

**DESCRIPTION FORM OF COURSE**

| <b>Course Code and Name: AIT101 Atatürk's First and Revolution History-I</b> |               |                                                                                                                                                                                                                                                                                                                                                           |              | <b>Program: Organic Agriculture</b> |             |                           |                                        |
|------------------------------------------------------------------------------|---------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|-------------------------------------|-------------|---------------------------|----------------------------------------|
| <b>Semester</b>                                                              | <b>Theory</b> | <b>Prac.</b>                                                                                                                                                                                                                                                                                                                                              | <b>Total</b> | <b>Credits</b>                      | <b>ECTS</b> | <b>Language of Course</b> | <b>Course Type Compulsory/Elective</b> |
| Fall Semester                                                                | 2             | 0                                                                                                                                                                                                                                                                                                                                                         | 2            | 2                                   | 2           | Turkish                   | Compulsory                             |
| <b>Prerequisites of Course</b>                                               |               | There are no prerequisites.                                                                                                                                                                                                                                                                                                                               |              |                                     |             |                           |                                        |
| <b>Course Instructor</b>                                                     |               |                                                                                                                                                                                                                                                                                                                                                           |              |                                     |             |                           |                                        |
| <b>Aims of Course</b>                                                        |               | It aims to let the student who attends the courses to acquire the ability of classification, description, explanation, analysis of the current social and individual problems in Turkey by taking rationality and science, norms of modernity into account with respect to the Kemalist thought and the Turkish Revolution                                |              |                                     |             |                           |                                        |
| <b>Course Learning Outcomes and Competencies</b>                             |               | 1. Have knowledge about the developments in European History, and Ottoman modernization<br>2. Have knowledge about the causes of the Collapse of the Ottoman Empire<br>3. Have knowledge about the First World War<br>4. Have knowledge about the Turkish National Struggle<br>5. Have knowledge about the founding philosophy of the Republic of Turkey. |              |                                     |             |                           |                                        |
| <b>Textbooks and /or Other Required Materials</b>                            |               | Images/visuals, slides, videos and lecture notes on the course content.                                                                                                                                                                                                                                                                                   |              |                                     |             |                           |                                        |
| <b>Method of delivery of the course</b>                                      |               | Online                                                                                                                                                                                                                                                                                                                                                    |              |                                     |             |                           |                                        |
| <b>Teaching Methods and Techniques</b>                                       |               | Explanation, Question-Answer                                                                                                                                                                                                                                                                                                                              |              |                                     |             |                           |                                        |

| <b>Evaluation Criteria</b> |                                           | <b>If yes, please mark (X)</b> | <b>Percentage (%) Contribution to the Overall Average</b> |
|----------------------------|-------------------------------------------|--------------------------------|-----------------------------------------------------------|
|                            | <b>1. Midterm Exam</b>                    | X                              | <b>40</b>                                                 |
|                            | <b>2. Midterm Exam</b>                    |                                |                                                           |
|                            | <b>3. Midterm Exam</b>                    |                                |                                                           |
|                            | <b>Oral Exam</b>                          |                                |                                                           |
|                            | <b>Practical Exam (Lab, Project etc.)</b> |                                |                                                           |

|  |                            |          |           |
|--|----------------------------|----------|-----------|
|  | <b>Semester Final Exam</b> | <b>X</b> | <b>60</b> |
|--|----------------------------|----------|-----------|

| <b>Semester Course Plan</b> |                                                                                                                                                                                                                                                              |
|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Week</b>                 | <b>Syllabus</b>                                                                                                                                                                                                                                              |
| <b>1</b>                    | Concepts Related to the Revolution                                                                                                                                                                                                                           |
| <b>2</b>                    | Developments in European history, and their impact on the Ottoman Empire                                                                                                                                                                                     |
| <b>3</b>                    | 19th century reform movements in the Ottoman Empire (Tanzimat period, the First Constitutional Period)                                                                                                                                                       |
| <b>4</b>                    | The second constitutional era,trends and movement in Turkish Political thought,the Turco-Italian war 1911),the Balkan Wars(1912-1913)                                                                                                                        |
| <b>5</b>                    | World War I and the Ottoman Empire (outbreak of the war, participation of the Ottoman Empire, the fronts, and the end of the war), the signing of the Mondros Armistice                                                                                      |
| <b>6</b>                    | Invasions and reactions against them, Kuva-yı Milliye, Societies (national, associations hostile to the national presence, and societies of the minorities), the difficulties after the armistice, Mustafa Kemal Pasha's activities and arrival in Anatolia. |
| <b>7</b>                    | The mudros armistice,Turkish national struggle preparations organization                                                                                                                                                                                     |
| <b>8</b>                    | Midterm                                                                                                                                                                                                                                                      |
| <b>9</b>                    | The beginnings of the national struggle through organization of Congresses (Amasya Circular, Erzurum, Sivas and Western Anatolian Congresses,).                                                                                                              |
| <b>10</b>                   | Amasya interview, the arrival of the Representatives in Ankara, the last Ottoman Parliament, the adoption of the National Pact, the invasion of Istanbul                                                                                                     |
| <b>11</b>                   | The opening of the Grand National Assembly of Turkey, the Assembly's structure, its activities and laws, domestic and foreign reactions to the opening of Parliament.                                                                                        |
| <b>12</b>                   | Dissolution of the national forces, and founding of the regular army, the Greek general attack, and wars in the Western Front                                                                                                                                |
| <b>13</b>                   | Mustafa Kemal Pasha's supreme military command, Tekâlif-i Milliye orders, Sakarya War and foreign policy developments in its aftermath (Turkish-Russian, Turkish-Afghan relations, the London Conference, Ankara Agreement)                                  |
| <b>14</b>                   | The Great Offensive, and signing of the Mudanya Armistice, the developments before the Lausanne Conference, the conference and the signing of the peace agreement                                                                                            |
| <b>15</b>                   | Final exam                                                                                                                                                                                                                                                   |

### DESCRIPTION FORM OF COURSE

| <b>Course Code and Name: AIT102 Atatürk's First and Revolution History-II</b> |        |                                                                                                                                                                                                                                                                                                         |       | <b>Program: Organic Agriculture</b> |      |                    |                                 |
|-------------------------------------------------------------------------------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-------------------------------------|------|--------------------|---------------------------------|
| Semester                                                                      | Theory | Prac.                                                                                                                                                                                                                                                                                                   | Total | Credits                             | ECTS | Language of Course | Course Type Compulsory/Elective |
| Spring                                                                        | 2      | 0                                                                                                                                                                                                                                                                                                       | 2     | 2                                   | 2    | Türkisch           | Compulsory                      |
| <b>Prerequisites of Course</b>                                                |        | There are no prerequisites.                                                                                                                                                                                                                                                                             |       |                                     |      |                    |                                 |
| <b>Course Instructor</b>                                                      |        |                                                                                                                                                                                                                                                                                                         |       |                                     |      |                    |                                 |
| <b>Aims of Course</b>                                                         |        | Understanding the Turkish National Struggle and Atatürk's Principles and Revolutions                                                                                                                                                                                                                    |       |                                     |      |                    |                                 |
| <b>Course Learning Outcomes and Competencies</b>                              |        | 1. Have knowledge about Atatürk's reforms<br>2. Have knowledge about the Turkish Foreign Policy in Atatürk's period<br>3. Have knowledge about Atatürk's principles<br>4. Have basic level of knowledge about the political developments in Turkey and the world during and after the Second World War. |       |                                     |      |                    |                                 |
| <b>Textbooks and /or Other Required Materials</b>                             |        | Images/visuals, slides, videos and lecture notes on the course content.                                                                                                                                                                                                                                 |       |                                     |      |                    |                                 |
| <b>Method of delivery of the course</b>                                       |        | Online                                                                                                                                                                                                                                                                                                  |       |                                     |      |                    |                                 |
| <b>Teaching Methods and Techniques</b>                                        |        | Explanation, Question-Answer,                                                                                                                                                                                                                                                                           |       |                                     |      |                    |                                 |

| Evaluation Criteria |                                    | If yes, please mark (X) | Percentage (%) Contribution to the Overall Average |
|---------------------|------------------------------------|-------------------------|----------------------------------------------------|
|                     | 1. Midterm Exam                    | X                       | 40                                                 |
|                     | 2. Midterm Exam                    |                         |                                                    |
|                     | 3. Midterm Exam                    |                         |                                                    |
|                     | Oral Exam                          |                         |                                                    |
|                     | Practical Exam (Lab, Project etc.) |                         |                                                    |

|  |                            |          |           |
|--|----------------------------|----------|-----------|
|  | <b>Semester Final Exam</b> | <b>X</b> | <b>60</b> |
|--|----------------------------|----------|-----------|

| <b>Semester Course Plan</b> |                                                                                                                                                                                                                                                                                                                          |
|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Week</b>                 | <b>Syllabus</b>                                                                                                                                                                                                                                                                                                          |
| <b>1</b>                    | Factors as the basis and motives of political modernization: the abolition of the dynasty, The establishment of the Republic, the abolition of the Caliphate. Debates concerning the Dynasty-Caliphate and Republic on the eve of the new state                                                                          |
| <b>2</b>                    | The foundation of the Progressive Republican Party, Sheikh Said Rebellion, declaration of the tranquility law and the attempted assassination of Atatürk.                                                                                                                                                                |
| <b>3</b>                    | The foundation of the Free Republican Party, The rally of İzmir, closing the party, Menemen and Bursa events.                                                                                                                                                                                                            |
| <b>4</b>                    | The Constitution of 1924, other constitutions, the developments in the area of law, reforms regarding the regulation of social life and the process of secularization of the Republic of Turkey                                                                                                                          |
| <b>5</b>                    | Reforms related to education and Culture (the Unification of the Education, introduction of the Latin letters, National Schools, establishment of Turkish history and Turkish Language Institutions and their activities, Turkish history thesis, the sun-language theory, 1933 university reform, (the People's Houses) |
| <b>6</b>                    | Healthcare developments                                                                                                                                                                                                                                                                                                  |
| <b>7</b>                    | İzmir Economic Congress, economic policies in the first years of the Republic, the World Economic Depression in 1929 and its reflection on the statist economic policy agenda of Turkey, and the I. Five-Year Development Program.T                                                                                      |
| <b>8</b>                    | Midterm                                                                                                                                                                                                                                                                                                                  |
| <b>9</b>                    | Kemalist Thought System, its scope and Principles (republicanism, secularism, nationalism, populism, statism, reformism) and threats to those principles.                                                                                                                                                                |
| <b>10</b>                   | The Atatürk Era and Turkish Foreign Policy in the Interwar Period I (1923-1930): Turkey's bilateral relations with the European states following the Lausanne Treaty                                                                                                                                                     |
| <b>11</b>                   | Turkish Foreign Policy in the Interwar Period II (1930-1938)                                                                                                                                                                                                                                                             |
| <b>12</b>                   | II. World war                                                                                                                                                                                                                                                                                                            |
| <b>13</b>                   | The second World war and Turkey                                                                                                                                                                                                                                                                                          |
| <b>14</b>                   | Developments in the second world war                                                                                                                                                                                                                                                                                     |
| <b>15</b>                   | Final exam                                                                                                                                                                                                                                                                                                               |

**DESCRIPTION FORM OF COURSE**

| Course Code and Name: TTO401 Marketing of Organic Products |        |                                                                                                                                                                                                                                                                                                                                                                                                                                 |       | Program: Organic Agriculture                                                                                                        |      |                    |                                 |
|------------------------------------------------------------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-------------------------------------------------------------------------------------------------------------------------------------|------|--------------------|---------------------------------|
| Semester                                                   | Theory | Prac.                                                                                                                                                                                                                                                                                                                                                                                                                           | Total | Credits                                                                                                                             | ECTS | Language of Course | Course Type Compulsory/Elective |
| Spring Semester                                            | 3      |                                                                                                                                                                                                                                                                                                                                                                                                                                 | 3     | 3                                                                                                                                   | 4    | Türkish            | Compulsory                      |
| Prerequisites of Course                                    |        | There are no prerequisites.                                                                                                                                                                                                                                                                                                                                                                                                     |       |                                                                                                                                     |      |                    |                                 |
| Course Instructor                                          |        | Assoc. Prof. Dr. Mikail Açar                                                                                                                                                                                                                                                                                                                                                                                                    |       | E-mail : mikailacar@munzur.edu.tr<br>Web : https://www.munzur.edu.tr/birimler/akademik/myo/tmyo/bolumler/bitkisel/Pages/akadro.aspx |      |                    |                                 |
| Aims of Course                                             |        | The aim of this course is to teach the basic concepts, processes and strategies related to marketing organic products; to analyze the differences of organic products from conventional products, the determination of target markets, consumer preferences, branding and labeling practices; and to understand important issues such as sustainability, quality assurance and legal regulations in the organic product market. |       |                                                                                                                                     |      |                    |                                 |
| Course Learning Outcomes and Competencies                  |        | 1- Explains the marketing processes and basic concepts of organic products.<br>2- Can evaluate target market analysis and consumer behavior.<br>3- Understands the branding, labeling and certification processes of organic products.<br>4- Applies sustainability and quality assurance principles in organic marketing.<br>5- Can develop strategic marketing plans for the marketing of organic products.                   |       |                                                                                                                                     |      |                    |                                 |
| Textbooks and /or Other Required Materials                 |        | Marangoz, M. (2008). Organik ürünlerin pazarlanması. Ekin Kitabevi.                                                                                                                                                                                                                                                                                                                                                             |       |                                                                                                                                     |      |                    |                                 |
| Method of delivery of the course                           |        | Face to face / Hybrid                                                                                                                                                                                                                                                                                                                                                                                                           |       |                                                                                                                                     |      |                    |                                 |
| Teaching Methods and Techniques                            |        | Explanation, question-answer, discussion, practice                                                                                                                                                                                                                                                                                                                                                                              |       |                                                                                                                                     |      |                    |                                 |

| Evaluation Criteria |                                    | If yes, please mark (X) | Percentage (%) Contribution to the Overall Average |
|---------------------|------------------------------------|-------------------------|----------------------------------------------------|
|                     | 1. Midterm Exam                    | X                       | 40                                                 |
|                     | 2. Midterm Exam                    |                         |                                                    |
|                     | 3. Midterm Exam                    |                         |                                                    |
|                     | Oral Exam                          |                         |                                                    |
|                     | Practical Exam (Lab, Project etc.) |                         |                                                    |
|                     | Semester Final Exam                | X                       | 60                                                 |

| Semester Course Plan |                                                                         |
|----------------------|-------------------------------------------------------------------------|
| Week                 | Syllabus                                                                |
| 1                    | Marketing Concept and Introduction to Organic Marketing                 |
| 2                    | Definition of Organic Products and Organic Agriculture Market in Turkey |
| 3                    | Consumer Behavior and Organic Product Demand                            |
| 4                    | Marketing Research and Market Segmentation                              |
| 5                    | Basic Features of Organic Products and Marketing Opportunities          |
| 6                    | Certification and Legal Regulations in Organic Products                 |
| 7                    | Branding and Packaging in Organic Products                              |
| 8                    | Midterm Exam                                                            |
| 9                    | Distribution Channels of Organic Products                               |
| 10                   | Pricing Strategies in Organic Products                                  |
| 11                   | Digital and Social Media in Organic Product Marketing                   |
| 12                   | Sustainability and Ethical Marketing in Organic Products                |
| 13                   | Consumer Trends and Market Trends in Organic Products                   |
| 14                   | Final Exam                                                              |

**COURSE DEFINITION FORM**

| <b>Course Code and Name: GON101Volunteering Activities</b> |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |       | <b>Program: Organic Agriculture</b>                                                                                                                                                                  |      |                 |                                 |
|------------------------------------------------------------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|-----------------|---------------------------------|
| Semester                                                   | Theory | APPLICATION.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Total | Credits                                                                                                                                                                                              | ECTS | Course Language | Course Type Compulsory/Elective |
| Fall Semester                                              | 1      | 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 3     | 2                                                                                                                                                                                                    | 2    | Turkish         | Elective                        |
| <b>Course Prerequisites</b>                                |        | There are no prerequisites.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |       |                                                                                                                                                                                                      |      |                 |                                 |
| <b>Course Instructor</b>                                   |        | Prof. Dr. Numan YILDIRIM                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |       | <b>Email :</b> numanyildirim@munzur.edu.tr<br><b>Web :</b> <a href="https://akademik.yok.gov.tr/AkademikArama/view/viewAuthor.jsp">https://akademik.yok.gov.tr/AkademikArama/view/viewAuthor.jsp</a> |      |                 |                                 |
| <b>Objectives of the Course</b>                            |        | The aim is to strengthen the ties between the university and society by using the knowledge, skills and accumulation that students acquire throughout their education life, to ensure the development of human, social, cultural and moral values and skills through some volunteering activities that they will participate and carry out, to increase the visibility and awareness in society on issues that are very sensitive to society such as disabled life, migration and disaster, and thus to enable students to do volunteer work in a volunteering area of their choice for a certain period of time within the scope of a plan to be prepared in advance and to share the results. |       |                                                                                                                                                                                                      |      |                 |                                 |
| <b>Course Learning Outcomes and Competencies</b>           |        | 1. Learn the concept of volunteering and volunteer management.<br>2. Recognize the concept of civil society and non-governmental organizations<br>3. Recognize the concept of civil society and non-governmental organizations<br>4. Gain knowledge and skills about volunteering and volunteer management in non-governmental organizations.<br>5. Learn the basic areas of volunteering<br>6. Understands the importance of community service practices<br>7. Can produce projects to find solutions to current problems of society.<br>8. Gains experience in Social Responsibility and Social Entrepreneurship                                                                              |       |                                                                                                                                                                                                      |      |                 |                                 |
| <b>Textbooks and/or Other Required Materials</b>           |        | Current reports from international and national organizations<br>Lecture Notes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |       |                                                                                                                                                                                                      |      |                 |                                 |
| <b>Course presentation format</b>                          |        | Face to face, Online                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |       |                                                                                                                                                                                                      |      |                 |                                 |
| <b>Teaching Methods and Techniques</b>                     |        | Explanation, presentation, group work, field work                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |       |                                                                                                                                                                                                      |      |                 |                                 |

|  |                 | If yes, please mark (X). | Percentage (%) Contribution to the Overall Average |
|--|-----------------|--------------------------|----------------------------------------------------|
|  | 1. Midterm Exam | X                        | 40                                                 |
|  | 2. Midterm Exam |                          |                                                    |

|                            |                                                         |   |           |
|----------------------------|---------------------------------------------------------|---|-----------|
| <b>Evaluation Criteria</b> | <b>3. Midterm Exam</b>                                  |   |           |
|                            | <b>Oral examination</b>                                 |   |           |
|                            | <b>Applied Exam<br/>(Laboratory, Project,<br/>etc.)</b> | X | <b>60</b> |
|                            | <b>Final Exam</b>                                       |   |           |

| <b>Term Lesson Plan</b> |                                                                                                     |
|-------------------------|-----------------------------------------------------------------------------------------------------|
| <b>Week</b>             | <b>Curriculum</b>                                                                                   |
| <b>1</b>                | Management and Organization Concepts                                                                |
| <b>2</b>                | The Concept of Volunteering and Volunteer Management                                                |
| <b>3</b>                | The Concept of Civil Society and Non-Governmental Organizations (NGOs)                              |
| <b>4</b>                | State and Civil Society in Türkiye                                                                  |
| <b>5</b>                | Volunteering in Civil Society Organizations, Volunteer Management                                   |
| <b>6</b>                | Main areas of volunteering (Afad, Environment, Education, Culture, Sports, Health, Social Services) |
| <b>7</b>                | Main areas of volunteering (Afad, Environment, Education, Culture, Sports, Health, Social Services) |
| <b>8</b>                | Midterm Exam                                                                                        |
| <b>9</b>                | The importance of community service practices                                                       |
| <b>10</b>               | Identifying current problems of society and producing projects that will provide solutions          |
| <b>11</b>               | Identifying current problems of society and producing projects that will provide solutions          |
| <b>12</b>               | Social Responsibility and Social Entrepreneurship                                                   |
| <b>13</b>               | Application Examples                                                                                |
| <b>14</b>               | Evaluation of Produced Projects                                                                     |



**DESCRIPTION FORM OF COURSE**

| <b>Course Code and Name: LTP220 Entrepreneurship</b> |               |                                                                                                                                                                                                                                                                                                                                        |              | <b>Program: Organic Agriculture</b> |             |                           |                                        |
|------------------------------------------------------|---------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|-------------------------------------|-------------|---------------------------|----------------------------------------|
| <b>Semester</b>                                      | <b>Theory</b> | <b>Prac.</b>                                                                                                                                                                                                                                                                                                                           | <b>Total</b> | <b>Credits</b>                      | <b>ECTS</b> | <b>Language of Course</b> | <b>Course Type Compulsory/Elective</b> |
| Spring                                               | 2             | 0                                                                                                                                                                                                                                                                                                                                      | 2            | 2                                   | 2           | Türkisch                  | Elective                               |
| <b>Prerequisites of Course</b>                       |               | There are no prerequisites.                                                                                                                                                                                                                                                                                                            |              |                                     |             |                           |                                        |
| <b>Course Instructor</b>                             |               |                                                                                                                                                                                                                                                                                                                                        |              |                                     |             |                           |                                        |
| <b>Aims of Course</b>                                |               | It is the training of entrepreneurial individuals by developing their conceptual and application skills in entrepreneurship and innovation.                                                                                                                                                                                            |              |                                     |             |                           |                                        |
| <b>Course Learning Outcomes and Competencies</b>     |               | 1.Knows the meaning and importance of entrepreneurship.<br>2.Develops their entrepreneurship and innovation comprehension skills.<br>3.Gains skills to evaluate their talents in terms of entrepreneurship by having innovative approaches.<br>4.Gains the ability to develop creative and innovative approaches to business problems. |              |                                     |             |                           |                                        |
| <b>Textbooks and /or Other Required Materials</b>    |               | - Entrepreneurship, Orhan Küçük, Seçkin Publications, Ankara, 2013.<br>-Innovation and Entrepreneurship , P.Drucker, First Harper Ltd, 1985<br>-Lecture Notes                                                                                                                                                                          |              |                                     |             |                           |                                        |
| <b>Method of delivery of the course</b>              |               | Face to face, Online                                                                                                                                                                                                                                                                                                                   |              |                                     |             |                           |                                        |
| <b>Teaching Methods and Techniques</b>               |               | Explanation, presentation, group work, Preparing a business plan                                                                                                                                                                                                                                                                       |              |                                     |             |                           |                                        |

| <b>Evaluation Criteria</b> |                                           | <b>If yes, please mark (X)</b> | <b>Percentage (%) Contribution to the Overall Average</b> |
|----------------------------|-------------------------------------------|--------------------------------|-----------------------------------------------------------|
|                            | <b>1. Midterm Exam</b>                    | X                              | <b>40</b>                                                 |
|                            | <b>2. Midterm Exam</b>                    |                                |                                                           |
|                            | <b>3. Midterm Exam</b>                    |                                |                                                           |
|                            | <b>Oral Exam</b>                          |                                |                                                           |
|                            | <b>Practical Exam (Lab, Project etc.)</b> | X                              | <b>60</b>                                                 |

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|  | <b>Semester Final Exam</b> |  |  |
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| <b>Semester Course Plan</b> |                                                                           |
|-----------------------------|---------------------------------------------------------------------------|
| <b>Week</b>                 | <b>Syllabus</b>                                                           |
| <b>1</b>                    | Entrepreneurship in practice and general characteristics of entrepreneurs |
| <b>2</b>                    | Creativity and innovation concepts and applications                       |
| <b>3</b>                    | Innovation models                                                         |
| <b>4</b>                    | Innovative business ideas and applications                                |
| <b>5</b>                    | Business Plan scope and content for new ventures                          |
| <b>6</b>                    | Production, Marketing and Financial Planning in Entrepreneurship          |
| <b>7</b>                    | Strategic planning applications for new ventures                          |
| <b>8</b>                    | Midterm Exam                                                              |
| <b>9</b>                    | Marketing plan applications for new ventures                              |
| <b>10</b>                   | Production planning applications for new ventures                         |
| <b>11</b>                   | Financial planning for new ventures                                       |
| <b>12</b>                   | Intellectual asset management                                             |
| <b>13</b>                   | Writing and presentation of business plans                                |
| <b>14</b>                   | Writing and presentation of business plans                                |

**DESCRIPTION FORM OF COURSE**

|                                            |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |       |                                                                                                                                                                                                                                               |      |                    |                                 |
|--------------------------------------------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|--------------------|---------------------------------|
| Course Code and Name: ORG111 Botany        |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |       | Program: Organic Agriculture                                                                                                                                                                                                                  |      |                    |                                 |
| Semester                                   | Theory | Prac.                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Total | Credits                                                                                                                                                                                                                                       | ECTS | Language of Course | Course Type Compulsory/Elective |
| Spring Semester                            | 2      | 0                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 2     | 2                                                                                                                                                                                                                                             | 2    | Turkish            | Elective                        |
| Prerequisites of Course                    |        | There are no prerequisites.                                                                                                                                                                                                                                                                                                                                                                                                                                                  |       |                                                                                                                                                                                                                                               |      |                    |                                 |
| Course Instructor                          |        | Assoc. Prof. Dr. Mikail Açar                                                                                                                                                                                                                                                                                                                                                                                                                                                 |       | E-mail : mikailacar@munzur.edu.tr<br>Web :<br><a href="https://www.munzur.edu.tr/birimler/akademik/myo/tmyo/bolumler/bitkisel/Pages/akadro.aspx">https://www.munzur.edu.tr/birimler/akademik/myo/tmyo/bolumler/bitkisel/Pages/akadro.aspx</a> |      |                    |                                 |
| Aims of Course                             |        | The aim of this course is to enable students to understand the structure, development, classification and interrelationships of plants based on scientific principles; to provide basic information about plant cells, tissues, organs, reproduction methods and systematic groups; and to provide the ability to evaluate the relationships of plants with environmental factors and their ecological roles.                                                                |       |                                                                                                                                                                                                                                               |      |                    |                                 |
| Course Learning Outcomes and Competencies  |        | 1- Explains the structure and functions of plant cells, tissues and organs.<br><br>2- Obtains basic information about the classification and morphological characteristics of plants.<br><br>3- Understands the plant life cycle, reproduction and development processes.<br><br>4- Evaluates the reactions of plants to environmental conditions.<br><br>5- Gains the ability to apply botanical knowledge in the fields of agriculture, environment and nature protection. |       |                                                                                                                                                                                                                                               |      |                    |                                 |
| Textbooks and /or Other Required Materials |        | Mauseth, J. D. (2014). Botany: an introduction to plant biology. Jones & Bartlett Publishers.                                                                                                                                                                                                                                                                                                                                                                                |       |                                                                                                                                                                                                                                               |      |                    |                                 |
| Method of delivery of the course           |        | Face to face / Hybrid                                                                                                                                                                                                                                                                                                                                                                                                                                                        |       |                                                                                                                                                                                                                                               |      |                    |                                 |
| Teaching Methods and Techniques            |        | Explanation, question-answer, discussion, practice                                                                                                                                                                                                                                                                                                                                                                                                                           |       |                                                                                                                                                                                                                                               |      |                    |                                 |

| Evaluation Criteria |                                    | If yes, please mark (X) | Percentage (%) Contribution to the Overall Average |
|---------------------|------------------------------------|-------------------------|----------------------------------------------------|
|                     | 1. Midterm Exam                    | X                       | 40                                                 |
|                     | 2. Midterm Exam                    |                         |                                                    |
|                     | 3. Midterm Exam                    |                         |                                                    |
|                     | Oral Exam                          |                         |                                                    |
|                     | Practical Exam (Lab, Project etc.) |                         |                                                    |
|                     | Semester Final Exam                | X                       | 60                                                 |

| Semester Course Plan |                                                    |
|----------------------|----------------------------------------------------|
| Week                 | Syllabus                                           |
| 1                    | Introduction and Plant Cell                        |
| 2                    | Plant Tissues and Meristems                        |
| 3                    | Root Morphology and Anatomy                        |
| 4                    | Stem Morphology and Anatomy                        |
| 5                    | Leaf Morphology and Anatomy                        |
| 6                    | Flower Morphology and Reproductive Organs          |
| 7                    | Seed and Fruit Morphology                          |
| 8                    | Midterm Exam                                       |
| 9                    | Introduction to Plant Systematics                  |
| 10                   | Plant Taxonomy and Classification Methods          |
| 11                   | Major Plant Groups: Algae, Bryophyta, Pteridophyta |
| 12                   | Major Plant Groups: Gymnosperms and Angiosperms    |
| 13                   | Plant Ecology: Habitat, Population and Communities |
| 14                   | Final Exam                                         |

**DESCRIPTION FORM OF COURSE**

|                                                |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |       |                                                                                                                                                                                                                                               |      |                    |                                 |
|------------------------------------------------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|--------------------|---------------------------------|
| Course Code and Name: ORG 222 Plant Physiology |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |       | Program: Organic Agriculture                                                                                                                                                                                                                  |      |                    |                                 |
| Semester                                       | Theory | Prac.                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Total | Credits                                                                                                                                                                                                                                       | ECTS | Language of Course | Course Type Compulsory/Elective |
| Spring Semester                                | 2      | 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 4     | 3                                                                                                                                                                                                                                             | 5    | Turkish            | Compulsory                      |
| Prerequisites of Course                        |        | There are no prerequisites.                                                                                                                                                                                                                                                                                                                                                                                                                                                        |       |                                                                                                                                                                                                                                               |      |                    |                                 |
| Course Instructor                              |        | Assoc. Prof. Dr. Mikail Açar                                                                                                                                                                                                                                                                                                                                                                                                                                                       |       | E-mail : mikailacar@munzur.edu.tr<br>Web :<br><a href="https://www.munzur.edu.tr/birimler/akademik/myo/tmyo/bolumler/bitkisel/Pages/akadro.aspx">https://www.munzur.edu.tr/birimler/akademik/myo/tmyo/bolumler/bitkisel/Pages/akadro.aspx</a> |      |                    |                                 |
| Aims of Course                                 |        | The aim of this course is to provide a physiological understanding of the life processes of plants; to explain basic physiological events such as water and mineral intake, photosynthesis, respiration, growth and development, the effects of hormones, and plant responses to environmental stress factors; to enable students to understand the functioning mechanisms of plants and to apply this information in areas such as agriculture, plant breeding and biotechnology. |       |                                                                                                                                                                                                                                               |      |                    |                                 |
| Course Learning Outcomes and Competencies      |        | 1- Explains the physiological processes of plants, namely photosynthesis, respiration and water intake.<br><br>2- Recognizes the functions of plant hormones and growth regulators.<br><br>3- Evaluates the physiological responses of plants to environmental stress factors.<br><br>4- Understands the metabolic activities and energy transformations of plants.<br><br>5- Apply plant physiology knowledge in the fields of agriculture and biotechnology.                     |       |                                                                                                                                                                                                                                               |      |                    |                                 |
| Textbooks and /or Other Required Materials     |        | Kaya, A., Akbulut, G. B., & Murathan, Z. T. Meslek Yüksekokulları İçin Bitki Fizyolojisi. Nobel Akademik Yayıncılık.                                                                                                                                                                                                                                                                                                                                                               |       |                                                                                                                                                                                                                                               |      |                    |                                 |
| Method of delivery of the course               |        | Face to face / Hybrid                                                                                                                                                                                                                                                                                                                                                                                                                                                              |       |                                                                                                                                                                                                                                               |      |                    |                                 |
| Teaching Methods and Techniques                |        | Explanation, question-answer, discussion, practice                                                                                                                                                                                                                                                                                                                                                                                                                                 |       |                                                                                                                                                                                                                                               |      |                    |                                 |

| Evaluation Criteria |                                    | If yes, please mark (X) | Percentage (%) Contribution to the Overall Average |
|---------------------|------------------------------------|-------------------------|----------------------------------------------------|
|                     | 1. Midterm Exam                    | X                       | 40                                                 |
|                     | 2. Midterm Exam                    |                         |                                                    |
|                     | 3. Midterm Exam                    |                         |                                                    |
|                     | Oral Exam                          |                         |                                                    |
|                     | Practical Exam (Lab, Project etc.) |                         |                                                    |
|                     | Semester Final Exam                | X                       | 60                                                 |

| Semester Course Plan |                                       |
|----------------------|---------------------------------------|
| Week                 | Syllabus                              |
| 1                    | Plant Cell and Chemical Composition   |
| 2                    | Water and Cell                        |
| 3                    | Plant-Soil-Water Relations            |
| 4                    | Water Loss in Plants                  |
| 5                    | Enzymes                               |
| 6                    | Nitrogen Metabolism                   |
| 7                    | Photosynthesis                        |
| 8                    | Midterm Exam                          |
| 9                    | Respiration                           |
| 10                   | Growth and Development in Plants      |
| 11                   | Plant Movement Physiology             |
| 12                   | Plant Hormones and Their Functions    |
| 13                   | Field Studies in the Application Area |
| 14                   | Final Exam                            |

### DESCRIPTION FORM OF COURSE

|                                            |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |       |                                                                                                                                                                                      |      |                    |                                 |
|--------------------------------------------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|--------------------|---------------------------------|
| Course Code and Name: TTO 170 Food Biology |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |       | Program: Organic Agriculture                                                                                                                                                         |      |                    |                                 |
| Semester                                   | Theory | Prac.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Total | Credits                                                                                                                                                                              | ECTS | Language of Course | Course Type Compulsory/Elective |
| Fall Semester                              | 3      | 0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 3     | 3                                                                                                                                                                                    | 3    | Turkish            | Compulsory                      |
| Prerequisites of Course                    |        | There are no prerequisites.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |       |                                                                                                                                                                                      |      |                    |                                 |
| Course Instructor                          |        | Prof. Dr. Rahmi AYDIN                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |       | Mail : raydin@munzur.edu.tr<br>Web : <a href="https://scholar.google.com/citations?hl=tr&amp;user=RIVWw4MAAAAJ">https://scholar.google.com/citations?hl=tr&amp;user=RIVWw4MAAAAJ</a> |      |                    |                                 |
| Aims of Course                             |        | Biomolecules and living things. Cell and its properties. Properties of living things (organization, metabolism, morphology, etc.). Energy transformations in living things. Providing information on the properties of plant and animal living things as food.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |       |                                                                                                                                                                                      |      |                    |                                 |
| Course Learning Outcomes and Competencies  |        | 1. To be able to learn about the definition of biomolecules and the formation of living things.<br>2. To understand basic information about cell organization, types and cell proliferation.<br>3. To gain the ability to understand substance transport and synthesis events in cells.<br>4. To learn basic information about energy transformations (photosynthesis, respiration) and other biological cycles in living things.<br>5. To understand basic information about plant tissues and their properties.<br>6. To understand basic information about animal tissues and their properties.<br>7. To understand the potential of plant and animal tissues to be used as a food source.<br>8. To gain basic information about the formation and functions of plant and animal organs.<br>9. To learn basic properties of biological materials as a food source.<br>. |       |                                                                                                                                                                                      |      |                    |                                 |
| Textbooks and /or Other Required Materials |        | Soil Analysis, Burhan Kaçar, Expanded 2nd Edition , Nobel Publications, Ankara, 2009                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |       |                                                                                                                                                                                      |      |                    |                                 |
| Method of delivery of the course           |        | Face to face,                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |       |                                                                                                                                                                                      |      |                    |                                 |
| Teaching Methods and Techniques            |        | Explanation, question-answer, presentation, practice, analysis                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |       |                                                                                                                                                                                      |      |                    |                                 |

|  |  |                                |                                                           |
|--|--|--------------------------------|-----------------------------------------------------------|
|  |  | <b>If yes, please mark (X)</b> | <b>Percentage (%) Contribution to the Overall Average</b> |
|--|--|--------------------------------|-----------------------------------------------------------|

|                            |                                           |   |           |
|----------------------------|-------------------------------------------|---|-----------|
| <b>Evaluation Criteria</b> | <b>1. Midterm Exam</b>                    | X | <b>40</b> |
|                            | <b>2. Midterm Exam</b>                    |   |           |
|                            | <b>3. Midterm Exam</b>                    |   |           |
|                            | <b>Oral Exam</b>                          |   |           |
|                            | <b>Practical Exam (Lab, Project etc.)</b> |   |           |
|                            | <b>Semester Final Exam</b>                | X | <b>60</b> |

| <b>Semester Course Plan</b> |                                                                               |
|-----------------------------|-------------------------------------------------------------------------------|
| <b>Week</b>                 | <b>Syllabus</b>                                                               |
| <b>1</b>                    | The concept of living being, the characteristics that determine living beings |
| <b>2</b>                    | Biomolecules and their characteristics                                        |
| <b>3</b>                    | Cell and cell molecular organization                                          |
| <b>4</b>                    | Cell division and their characteristics                                       |
| <b>5</b>                    | Transportation of matter in the cell                                          |
| <b>6</b>                    | Photosynthesis and chemosynthesis mechanism                                   |
| <b>7</b>                    | Aerobic and anaerobic respiration mechanism                                   |
| <b>8</b>                    | Plant tissues and their characteristics                                       |
| <b>9</b>                    | Midterm exam                                                                  |
| <b>10</b>                   | Plant organs and their characteristics                                        |
| <b>11</b>                   | Animal tissues and their characteristics                                      |
| <b>12</b>                   | Muscle tissue and its characteristics                                         |
| <b>13</b>                   | Carbon dioxide cycle in nature                                                |
| <b>14</b>                   | Nitrogen cycle in nature                                                      |
| <b>15</b>                   | Final Exam                                                                    |



**DESCRIPTION FORM OF COURSE**

**Course Code and Name:** TTO 205 Ecology

**Program:** Organic Agriculture Programme

| Semester      | Theory | Prac. | Total | Credits | ECTS | Language of Course | Course Type Compulsory/Elective |
|---------------|--------|-------|-------|---------|------|--------------------|---------------------------------|
| Fall Semester | 4      | 0     | 4     | 4       | 4    | Turkish            | Compulsory                      |

**Prerequisites of Course**

There are no prerequisites.

**Course Instructor**

Prof. Dr. Rahmi AYDIN

**Mail :** raydin@munzur.edu.tr

**Web :**

<https://scholar.google.com/citations?hl=tr&user=RIVWw4MAAAAJ>

**Aims of Course**

The aim is to teach the concepts and theories of ecology (habitat, etc.) sustainable agricultural ecology to ensure the preservation of natural ecosystems, agroeco systems, teaching to reveal the differences between environmental factors (climate, edaphic factors, biological and topographic factors).

**Course Learning Outcomes and Competencies**

- Will be able to define the basic rules and concepts of ecology.
1. Defines individual ecology, population ecology, community ecology and ecosystem ecology.
  2. Defines the concepts of environment, environment, biome, biosphere, ecosphere, ecological relationships and factors and homeostasis.
  3. Classifies living things according to their tolerance to ecological factors.
- Will be able to define the application areas of ecology, which forms the basis of environmental sciences.
1. Defines the application areas of ecology in the world ecosystem.
  2. Establishes a relationship with organisms by defining application areas on environmental pollution.
  3. Plans and implements projects by researching studies in applied ecology fields
- Will be able to classify the sub-branches of ecology and define the details related to them.
- Will define all biotic and abiotic factors related to individual, population, community and ecosystem ecology, which constitute the basic sub-branches of ecology, and their relationships with each other.
  - Will be able to define ecosystems and material cycles.

|                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|---------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                   | <ul style="list-style-type: none"> <li>• Will learn and apply the studies of the branch of ecology, will recognize ecosystems by seeing them and will meet those who are engaged in this branch of science through technical trips and see their work areas, will learn that their service purpose is nature and living things when they become environmental engineers and will plan how they will contribute to the world ecosystem with continuous studies towards this.</li> <li>• Will be able to define the major ecosystems of Turkey and the world.</li> </ul> <ol style="list-style-type: none"> <li>1. Will define terrestrial ecosystems.</li> <li>2. Will define freshwater ecosystems.</li> <li>3. Will define marine ecosystems.</li> <li>4. Will define wetlands and their importance.</li> </ol> |
| <b>Textbooks and /or Other Required Materials</b> | Soil Analysis, Burhan Kaçar, Expanded 2nd Edition , Nobel Publications, Ankara, 2009                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Method of delivery of the course</b>           | Face to face                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Teaching Methods and Techniques</b>            | Explanation, question-answer, presentation, practice, analysis                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

| <b>Evaluation Criteria</b> |                                           | <b>If yes, please mark (X)</b> | <b>Percentage (%) Contribution to the Overall Average</b> |
|----------------------------|-------------------------------------------|--------------------------------|-----------------------------------------------------------|
|                            | <b>1. Midterm Exam</b>                    | X                              | <b>40</b>                                                 |
|                            | <b>2. Midterm Exam</b>                    |                                |                                                           |
|                            | <b>3. Midterm Exam</b>                    |                                |                                                           |
|                            | <b>Oral Exam</b>                          |                                |                                                           |
|                            | <b>Practical Exam (Lab, Project etc.)</b> |                                |                                                           |
|                            | <b>Semester Final Exam</b>                | X                              | <b>60</b>                                                 |

| <b>Semester Course Plan</b> |                 |
|-----------------------------|-----------------|
| <b>Week</b>                 | <b>Syllabus</b> |

|    |                                                                                                                     |
|----|---------------------------------------------------------------------------------------------------------------------|
| 1  | Basic rules and concepts in ecology                                                                                 |
| 2  | Individual ecology, abiotic factors and their effects on organisms                                                  |
| 3  | Edaphic factors, Biological Relations                                                                               |
| 4  | Population Ecology, Definitions and Structural characteristics of the population                                    |
| 5  | Quantitative changes, Population dynamics, Species community ecology, Community and its characteristics, succession |
| 6  | Quantitative changes, Population dynamics, Species community ecology, Community and its characteristics, succession |
| 7  | Ecosystem and its characteristics                                                                                   |
| 8  | Material cycles in ecosystems                                                                                       |
| 9  | Material cycles in ecosystems                                                                                       |
| 10 | Major Ecosystems of the World                                                                                       |
| 11 | Major Ecosystems of the World                                                                                       |
| 12 | Major Ecosystems of the World                                                                                       |
| 13 | Applied Ecology, Environmental Pollution                                                                            |
| 14 | Ecological Balance                                                                                                  |
| 15 | General Exam                                                                                                        |

**DESCRIPTION FORM OF COURSE**

|                                                                                     |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |       |                                                                                                                                     |      |                    |                                 |
|-------------------------------------------------------------------------------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-------------------------------------------------------------------------------------------------------------------------------------|------|--------------------|---------------------------------|
| Course Code and Name: TTO 309 Collection from Nature, Medicinal and Aromatic Plants |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |       | Program: Organic Agriculture                                                                                                        |      |                    |                                 |
| Semester                                                                            | Theory | Prac.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Total | Credits                                                                                                                             | ECTS | Language of Course | Course Type Compulsory/Elective |
| Spring Semester                                                                     | 2      | 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 4     | 3                                                                                                                                   | 4    | Turkish            | Compulsory                      |
| Prerequisites of Course                                                             |        | There are no prerequisites.                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |       |                                                                                                                                     |      |                    |                                 |
| Course Instructor                                                                   |        | Assoc. Prof. Dr. Mikail Açar                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |       | E-mail : mikailacar@munzur.edu.tr<br>Web : https://www.munzur.edu.tr/birimler/akademik/myo/tmyo/bolumler/bitkisel/Pages/akadro.aspx |      |                    |                                 |
| Aims of Course                                                                      |        | The aim of this course is to provide basic knowledge and skills on the identification of medicinal and aromatic plants, their sustainable collection, protection and evaluation in their natural distribution areas. It is also aimed to raise awareness about the ethnobotanical importance of these plants, their pharmaceutical and cosmetic use potential, drying and storage techniques, as well as the legal and ethical rules to be considered during the collection process from nature. |       |                                                                                                                                     |      |                    |                                 |
| Course Learning Outcomes and Competencies                                           |        | 1- Recognizes the basic characteristics and classification of medicinal and aromatic plants.<br><br>2- Explains the methods of collection from nature and principles of sustainability.<br><br>3- Knows the drying, storage and processing techniques of medicinal and aromatic plants.<br><br>4- Evaluates the ethnobotanical and economic importance of plants.<br><br>5- Acts in accordance with legal and ethical rules in the processes of collection from nature.                          |       |                                                                                                                                     |      |                    |                                 |
| Textbooks and /or Other Required Materials                                          |        | Baydar, H. (2022). Tıbbi ve aromatik bitkiler bilimi ve teknolojisi. Nobel Akademik Yayıncılık.                                                                                                                                                                                                                                                                                                                                                                                                  |       |                                                                                                                                     |      |                    |                                 |
| Method of delivery of the course                                                    |        | Face to face / Hybrid                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |       |                                                                                                                                     |      |                    |                                 |
| Teaching Methods and Techniques                                                     |        | Explanation, question-answer, discussion, practice                                                                                                                                                                                                                                                                                                                                                                                                                                               |       |                                                                                                                                     |      |                    |                                 |

| Evaluation Criteria |                                    | If yes, please mark (X) | Percentage (%) Contribution to the Overall Average |
|---------------------|------------------------------------|-------------------------|----------------------------------------------------|
|                     | 1. Midterm Exam                    | X                       | 40                                                 |
|                     | 2. Midterm Exam                    |                         |                                                    |
|                     | 3. Midterm Exam                    |                         |                                                    |
|                     | Oral Exam                          |                         |                                                    |
|                     | Practical Exam (Lab, Project etc.) |                         |                                                    |
|                     | Semester Final Exam                | X                       | 60                                                 |

| Semester Course Plan |                                                                         |
|----------------------|-------------------------------------------------------------------------|
| Week                 | Syllabus                                                                |
| 1                    | Introduction to Medicinal and Aromatic Plants                           |
| 2                    | Botanical Characteristics of Medicinal and Aromatic Plants              |
| 3                    | Natural Collection Methods and Principles                               |
| 4                    | Active Compounds and Chemical Composition in Medicinal Plants           |
| 5                    | Aromatic Plants and Essential Oils                                      |
| 6                    | Drying, Storage and Processing Techniques                               |
| 7                    | Economic and Ethnobotanical Importance of Medicinal and Aromatic Plants |
| 8                    | Midterm Exam                                                            |
| 9                    | Natural Collection Permits and Legal Regulations                        |
| 10                   | Plant Populations and Sustainability                                    |
| 11                   | Diseases and Pests in Medicinal and Aromatic Plants                     |
| 12                   | Natural Collection and Quality Control                                  |
| 13                   | New Technologies and Research in Medicinal and Aromatic Plants          |
| 14                   | Final Exam                                                              |

**DESCRIPTION FORM OF COURSE**

|                                                                                                           |               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |              |                                                                                                                                                                                                    |             |                           |                                        |
|-----------------------------------------------------------------------------------------------------------|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|---------------------------|----------------------------------------|
| <b>Course Code and Name: TTO 405</b> General Principles of Organic Agriculture, Control and Certification |               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |              | <b>Program: <u>Organic Agriculture Programme</u></b>                                                                                                                                               |             |                           |                                        |
| <b>Semester</b>                                                                                           | <b>Theory</b> | <b>Prac.</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <b>Total</b> | <b>Credits</b>                                                                                                                                                                                     | <b>ECTS</b> | <b>Language of Course</b> | <b>Course Type Compulsory/Elective</b> |
| Fall Semester                                                                                             | 2             | 0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 2            | 2                                                                                                                                                                                                  | 4           | Turkish                   | Compulsory                             |
| <b>Prerequisites of Course</b>                                                                            |               | There are no prerequisites.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |              |                                                                                                                                                                                                    |             |                           |                                        |
| <b>Course Instructor</b>                                                                                  |               | Prof. Dr. Rahmi AYDIN                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |              | <b>Mail :</b> raydin@munzur.edu.tr<br><b>Web :</b> <a href="https://scholar.google.com/citations?hl=tr&amp;user=RIVWw4MAAAAJ">https://scholar.google.com/citations?hl=tr&amp;user=RIVWw4MAAAAJ</a> |             |                           |                                        |
| <b>Aims of Course</b>                                                                                     |               | Organic Agriculture; agricultural production is carried out with control and certification at every stage from production to consumption, without using                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |              |                                                                                                                                                                                                    |             |                           |                                        |
| <b>Course Learning Outcomes and Competencies</b>                                                          |               | 1. In agricultural enterprises that perform ecological production, production should be carried out using natural raw materials.<br>2. All kinds of environmentally threatening effects of raw materials and other business inputs should be reduced or completely avoided. For example, seedlings, saplings, etc. to be used in organic agriculture should be free of pesticides.<br>3. In order to process the soil and continue the living activity in it, rotational planting and organic fertilization should be done. For this, compost and green manure consisting of farm manure and organic waste should be used. In addition, appropriate soil processing tools should be used and excessive soil processing should be avoided.<br>4. Balanced mixtures suitable for the ecological environment should be made and emphasis should be given to legumes in rotational planting.<br>5. In the selection of plant species and varieties, the ecological conditions of the place where production will be made should be taken into consideration |              |                                                                                                                                                                                                    |             |                           |                                        |

and resistant seeds, saplings and animals suitable for these conditions should be used.

6. Biological methods should be used to combat pests.

7. In animal production, barns and stables should be in accordance with the rules, nutritional needs should be met by the farm as much as possible, and chemical substances (antibiotics, weight gain additives, etc.) should not be added to feed.

8. In breeding, 1 head of cattle should be considered for 1 ha of land to meet feed needs.

9. In ecological agriculture, producing sufficient amounts of high quality food should come before maximum yield.

10. Natural energy sources such as solar energy and wind energy should be preferred as much as possible for energy.

11. The earnings and opportunities of ecological agriculture enterprises should satisfy the producer and their employees.

|                                                   |                                                                      |
|---------------------------------------------------|----------------------------------------------------------------------|
| <b>Textbooks and /or Other Required Materials</b> | Ministry of Agriculture and Forestry Lecture notes and related books |
| <b>Method of delivery of the course</b>           | Face to face                                                         |
| <b>Teaching Methods and Techniques</b>            | Explanation, question-answer, presentation, practice, analysis       |

|  |                        | <b>If yes, please mark (X)</b> | <b>Percentage (%) Contribution to the Overall Average</b> |
|--|------------------------|--------------------------------|-----------------------------------------------------------|
|  | <b>1. Midterm Exam</b> | X                              | <b>40</b>                                                 |
|  | <b>2. Midterm Exam</b> |                                |                                                           |

| Evaluation Criteria | 3. Midterm Exam                    |   |    |
|---------------------|------------------------------------|---|----|
|                     | Oral Exam                          |   |    |
|                     | Practical Exam (Lab, Project etc.) |   |    |
|                     | Semester Final Exam                | X | 60 |

| Semester Course Plan |                                                                    |
|----------------------|--------------------------------------------------------------------|
| Week                 | Syllabus                                                           |
| 1                    | What is organic farming                                            |
| 2                    | Why should we consume organic farming products                     |
| 3                    | What should we pay attention to when choosing organic farming land |
| 4                    | What are the pest control methods in organic farming               |
| 5                    | What is a GMO water modified product                               |
| 6                    | Seedling                                                           |
| 7                    | Seed                                                               |
| 8                    | Production techniques with cuttings                                |
| 9                    | What is a certificate and how to get it                            |
| 10                   | What is crop rotation                                              |
| 11                   | Reducing soil erosion                                              |
| 12                   | The harms of pesticides                                            |
| 13                   | The effects of pesticides on non-target organisms                  |
| 14                   | Plant disease control techniques                                   |
| 15                   | General Exam                                                       |



### DESCRIPTION FORM OF COURSE

|                                                          |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |       |                                                                                                                                     |      |                    |                                 |
|----------------------------------------------------------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-------------------------------------------------------------------------------------------------------------------------------------|------|--------------------|---------------------------------|
| Course Code and Name: TTO101 Organic Animal Production-I |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |       | Program: Organic Agriculture                                                                                                        |      |                    |                                 |
| Semester                                                 | Theory | Prac.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Total | Credits                                                                                                                             | ECTS | Language of Course | Course Type Compulsory/Elective |
| Spring Semester                                          | 2      | 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 4     | 3                                                                                                                                   | 6    | Turkish            | Compulsory                      |
| Prerequisites of Course                                  |        | There are no prerequisites.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |       |                                                                                                                                     |      |                    |                                 |
| Course Instructor                                        |        | Assoc. Prof. Dr. Mikail Açar                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |       | E-mail : mikailacar@munzur.edu.tr<br>Web : https://www.munzur.edu.tr/birimler/akademik/myo/tmyo/bolumler/bitkisel/Pages/akadro.aspx |      |                    |                                 |
| Aims of Course                                           |        | The aim of this course is to enable students to comprehend the basic principles, philosophy and application principles of animal production within the organic farming system. The course aims to provide a holistic perspective at an introductory level to organic animal production by addressing issues such as the differences between conventional and organic animal husbandry systems, animal welfare, shelter and environmental conditions, natural feeding and breeding methods and health management. It is also aimed to enable students to reach the competence to evaluate organic animal production in terms of ethical, environmental and legal dimensions and principles of organic animal production. |       |                                                                                                                                     |      |                    |                                 |
| Course Learning Outcomes and Competencies                |        | 1- Explains the basic concepts and principles of organic animal production.<br>2- Analyzes the role of animal husbandry in the organic farming system.<br>3- Defines animal welfare, shelter conditions and environmental requirements in organic animal production.<br>4- Gains basic knowledge on feeding, reproduction and health management in organic animal production.<br>5- Understands the ethical, legal and environmental responsibilities related to organic animal production.                                                                                                                                                                                                                             |       |                                                                                                                                     |      |                    |                                 |
| Textbooks and /or Other Required Materials               |        | Er, C., & Başalma, D. (2008). Organik tarımdaki gelişmeler. Nobel Yayın Dağıtım, 1354.<br>Organik Hayvancılık" : Prof. Dr. Yusuf Erdoğan ve Prof. Dr. Muammer Öztürk                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |       |                                                                                                                                     |      |                    |                                 |
| Method of delivery of the course                         |        | Face to face / Hybrid                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |       |                                                                                                                                     |      |                    |                                 |
| Teaching Methods and Techniques                          |        | Explanation, question-answer, discussion, practice                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |       |                                                                                                                                     |      |                    |                                 |

| Evaluation Criteria |                                    | If yes, please mark (X) | Percentage (%) Contribution to the Overall Average |
|---------------------|------------------------------------|-------------------------|----------------------------------------------------|
|                     | 1. Midterm Exam                    | X                       | 40                                                 |
|                     | 2. Midterm Exam                    |                         |                                                    |
|                     | 3. Midterm Exam                    |                         |                                                    |
|                     | Oral Exam                          |                         |                                                    |
|                     | Practical Exam (Lab, Project etc.) |                         |                                                    |
|                     | Semester Final Exam                | X                       | 60                                                 |

| Semester Course Plan |                                                                          |
|----------------------|--------------------------------------------------------------------------|
| Week                 | Syllabus                                                                 |
| 1                    | Introduction to Organic Agriculture and Animal Production                |
| 2                    | The Place and Importance of Animal Husbandry in Organic Agriculture      |
| 3                    | Comparison of Conventional and Organic Animal Production Systems         |
| 4                    | Animal Welfare Principles in Organic Animal Production                   |
| 5                    | Shelter and Environmental Conditions in Organic Animal Production        |
| 6                    | Animal Breeds and Genetic Resources in Organic Production                |
| 7                    | Reproduction and Natural Methods in Organic Animal Production            |
| 8                    | Midterm Exam                                                             |
| 9                    | Hygiene and Health Management in Organic Animal Production: Introduction |
| 10                   | Social Behavior of Animals in Organic Animal Production                  |
| 11                   | Natural Pasture-Based Feeding in Organic Animal Production               |
| 12                   | Manure Management and Environmental Effects in Organic Animal Production |
| 13                   | Ethical and Legal Approaches in Organic Animal Production                |
| 14                   | Final Exam                                                               |

**DESCRIPTION FORM OF COURSE**

|                                                                     |               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |              |                                                                                                                                                                                                         |             |                            |                                            |
|---------------------------------------------------------------------|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|----------------------------|--------------------------------------------|
| <b>Course Code and Name:</b> TT0109 Food Chemistry and Biochemistry |               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |              | <b>Program: Organic Agriculture</b>                                                                                                                                                                     |             |                            |                                            |
| <b>Semester</b>                                                     | <b>Theory</b> | <b>APPLICAT<br/>ION.</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <b>Total</b> | <b>Credits</b>                                                                                                                                                                                          | <b>ECTS</b> | <b>Course<br/>Language</b> | <b>Course Type<br/>Compulsory/Elective</b> |
| Fall Semester                                                       | 3             | 0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 3            | 3                                                                                                                                                                                                       | 4           | Turkish                    | Compulsory                                 |
| <b>Course Prerequisites</b>                                         |               | There are no prerequisites.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |              |                                                                                                                                                                                                         |             |                            |                                            |
| <b>Course Instructor</b>                                            |               | Prof. Dr. Numan YILDIRIM                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |              | <b>Email :</b> numanyildirim@munzur.edu.tr<br><b>Web :</b><br><a href="https://akademik.yok.gov.tr/AkademikArama/view/viewAuthor.jsp">https://akademik.yok.gov.tr/AkademikArama/view/viewAuthor.jsp</a> |             |                            |                                            |
| <b>Objectives of the Course</b>                                     |               | In Food Science and Technology, basic information is given about the structure and properties of biomolecules, proteins, carbohydrates, fats, vitamins, minerals, citric acid cycle, oxidative phosphorylation, gluconeogenesis, biosynthesis of macromolecules, metabolic energy production and storage, glycolysis and major biochemical changes in food.                                                                                                                                                                                                                                                                                                               |              |                                                                                                                                                                                                         |             |                            |                                            |
| <b>Course Learning Outcomes and Competencies</b>                    |               | 1. To have knowledge about the definition of Food Biochemistry and its application areas.<br>2. Understanding the conditions of biochemical reactions occurring in foods<br>3. Understanding the structure and properties of bio-molecules formed as a result of reactions in foods.<br>4. Gain knowledge about the structure and properties of proteins.<br>5. Gain knowledge about the structure and properties of oils.<br>6. Gain information about the structure and properties of carbohydrates.<br>7. Gain information about the structure and properties of vitamins and minerals.<br>8. Understand the formation and breakdown reactions of metabolic compounds. |              |                                                                                                                                                                                                         |             |                            |                                            |
| <b>Textbooks and/or Other Required Materials</b>                    |               | Lecture Notes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |              |                                                                                                                                                                                                         |             |                            |                                            |
| <b>Course presentation format</b>                                   |               | Face to face, Online                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |              |                                                                                                                                                                                                         |             |                            |                                            |
| <b>Teaching Methods and Techniques</b>                              |               | Explanation, presentation, group work, field work                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |              |                                                                                                                                                                                                         |             |                            |                                            |

| Evaluation Criteria |                  | If yes, please mark (X). | Percentage (%) Contribution to the Overall Average |
|---------------------|------------------|--------------------------|----------------------------------------------------|
|                     | 1. Midterm Exam  | X                        | 40                                                 |
|                     | 2. Midterm Exam  |                          |                                                    |
|                     | 3. Midterm Exam  |                          |                                                    |
|                     | Oral examination |                          |                                                    |

|  |                                                         |   |    |
|--|---------------------------------------------------------|---|----|
|  | <b>Applied Exam<br/>(Laboratory, Project,<br/>etc.)</b> | X | 60 |
|  | <b>Final Exam</b>                                       |   |    |

| <b>Term Lesson Plan</b> |                                               |
|-------------------------|-----------------------------------------------|
| <b>Week</b>             | <b>Curriculum</b>                             |
| 1                       | The concept of food                           |
| 2                       | Food chemistry and food biochemistry concepts |
| 3                       | Food Ingredients                              |
| 4                       | Structural properties of proteins             |
| 5                       | Functions of proteins                         |
| 6                       | Structural properties of carbohydrates        |
| 7                       | Functions of carbohydrates                    |
| 8                       | Midterm Exam                                  |
| 9                       | Structural properties of oils                 |
| 10                      | Functions of Fats                             |
| 11                      | Vitamins and Minerals                         |
| 12                      | Vitamins and minerals                         |
| 13                      | Metabolic compounds, metabolism               |
| 14                      | Biochemical reactions in foods                |

### DESCRIPTION FORM OF COURSE

|                                                           |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |       |                                                                                                                                     |      |                    |                                 |
|-----------------------------------------------------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-------------------------------------------------------------------------------------------------------------------------------------|------|--------------------|---------------------------------|
| Course Code and Name: TTO201 Organic Animal Production-II |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |       | Program: Organic Agriculture                                                                                                        |      |                    |                                 |
| Semester                                                  | Theory | Prac.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Total | Credits                                                                                                                             | ECTS | Language of Course | Course Type Compulsory/Elective |
| Spring Semester                                           | 2      | 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 4     | 3                                                                                                                                   | 6    | Turkish            | Compulsory                      |
| Prerequisites of Course                                   |        | There are no prerequisites.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |       |                                                                                                                                     |      |                    |                                 |
| Course Instructor                                         |        | Assoc. Prof. Dr. Mikail Açar                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |       | E-mail : mikailacar@munzur.edu.tr<br>Web : https://www.munzur.edu.tr/birimler/akademik/myo/tmyo/bolumler/bitkisel/Pages/akadro.aspx |      |                    |                                 |
| Aims of Course                                            |        | The aim of this course is to provide advanced knowledge about animal health, welfare, shelter conditions, organic feeding methods, production systems and relevant legal regulations in line with the principles of organic animal production; to enable students to acquire the ability to evaluate organic animal husbandry practices within the framework of sustainability, environmental health and ethical production principles.                                                                                              |       |                                                                                                                                     |      |                    |                                 |
| Course Learning Outcomes and Competencies                 |        | 1- Explains the basic principles and applications of organic animal production systems.<br><br>2- Recognizes approaches specific to organic production in animal welfare, health and nutrition.<br><br>3- Gains the ability to plan organic feeding and shelter conditions.<br><br>4- Understands the certification processes and legal regulations of organic animal products.<br><br>5- Evaluates organic animal production problems in line with sustainable and ethical production principles and develops solution suggestions. |       |                                                                                                                                     |      |                    |                                 |
| Textbooks and /or Other Required Materials                |        | Er, C., & Başalma, D. (2008). Organik tarımdaki gelişmeler. Nobel Yayın Dağıtım, 1354.<br>Organik Hayvancılık" : Prof. Dr. Yusuf Erdoğan ve Prof. Dr. Muammer Öztürk                                                                                                                                                                                                                                                                                                                                                                 |       |                                                                                                                                     |      |                    |                                 |
| Method of delivery of the course                          |        | Face to face / Hybrid                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |       |                                                                                                                                     |      |                    |                                 |
| Teaching Methods and Techniques                           |        | Explanation, question-answer, discussion, practice                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |       |                                                                                                                                     |      |                    |                                 |

| Evaluation Criteria |                                    | If yes, please mark (X) | Percentage (%) Contribution to the Overall Average |
|---------------------|------------------------------------|-------------------------|----------------------------------------------------|
|                     | 1. Midterm Exam                    | X                       | 40                                                 |
|                     | 2. Midterm Exam                    |                         |                                                    |
|                     | 3. Midterm Exam                    |                         |                                                    |
|                     | Oral Exam                          |                         |                                                    |
|                     | Practical Exam (Lab, Project etc.) |                         |                                                    |
|                     | Semester Final Exam                | X                       | 60                                                 |

| Semester Course Plan |                                                           |
|----------------------|-----------------------------------------------------------|
| Week                 | Syllabus                                                  |
| 1                    | Basic Principles and Philosophy of Organic Agriculture    |
| 2                    | Control and Supervision Mechanisms in Organic Agriculture |
| 3                    | Basics for Starting Organic Agriculture                   |
| 4                    | Fundamentals of Organic Animal Production                 |
| 5                    | Management and Planning in Organic Animal Production      |
| 6                    | Organic Beekeeping                                        |
| 7                    | Organic Aquaculture Production                            |
| 8                    | Midterm Exam                                              |
| 9                    | Organic Poultry: Breeding and Management                  |
| 10                   | Organic Egg Production                                    |
| 11                   | Organic Animal Nutrition and Feed Management              |
| 12                   | Disease Control in Organic Animal Production              |
| 13                   | Sustainability and Economy in Organic Animal Production   |
| 14                   | Final Exam                                                |

**DESCRIPTION FORM OF COURSE**

|                                                |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                       |       |                                                                                                                                                                                                                                            |      |                    |                                 |
|------------------------------------------------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|--------------------|---------------------------------|
| Course Code and Name: TTO207 Climate Knowledge |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                       |       | Program: Organic Agriculture                                                                                                                                                                                                               |      |                    |                                 |
| Semester                                       | Theory | Prac.                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Total | Credits                                                                                                                                                                                                                                    | ECTS | Language of Course | Course Type Compulsory/Elective |
| Spring Semester                                | 2      |                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 2     | 2                                                                                                                                                                                                                                          | 2    | Turkish            | Compulsory                      |
| Prerequisites of Course                        |        | There are no prerequisites.                                                                                                                                                                                                                                                                                                                                                                                                                           |       |                                                                                                                                                                                                                                            |      |                    |                                 |
| Course Instructor                              |        | Assoc. Prof. Dr. Mikail Açar                                                                                                                                                                                                                                                                                                                                                                                                                          |       | E-mail : mikailacar@munzur.edu.tr<br>Web : <a href="https://www.munzur.edu.tr/birimler/akademik/myo/tmyo/bolumler/bitkisel/Pages/akadro.aspx">https://www.munzur.edu.tr/birimler/akademik/myo/tmyo/bolumler/bitkisel/Pages/akadro.aspx</a> |      |                    |                                 |
| Aims of Course                                 |        | The aim of this course is to enable students to understand the basic components of the climate system, atmospheric processes and climate types; to provide basic information about the functioning of climate on a global and regional scale; and to raise awareness about climate change, the effects of climate on human life and the environment, and the applications of climate information in areas such as agriculture, ecology and planning.. |       |                                                                                                                                                                                                                                            |      |                    |                                 |
| Course Learning Outcomes and Competencies      |        | 1- Explains the basic components of the climate system and atmospheric processes.<br><br>2- Recognizes different climate types and their characteristics.<br><br>3- Gains basic knowledge about climate change and its causes.<br><br>4- Evaluates the effects of climate on human life and the environment.<br><br>5- Can apply climate knowledge in areas such as agriculture, planning and environmental management.                               |       |                                                                                                                                                                                                                                            |      |                    |                                 |
| Textbooks and /or Other Required Materials     |        | Current reports of international and national organizations, Lecture Notes İklim Bilgisi ve Meteoroloji, Yazar: H. Gökmen                                                                                                                                                                                                                                                                                                                             |       |                                                                                                                                                                                                                                            |      |                    |                                 |
| Method of delivery of the course               |        | Face to face / Hybrid                                                                                                                                                                                                                                                                                                                                                                                                                                 |       |                                                                                                                                                                                                                                            |      |                    |                                 |
| Teaching Methods and Techniques                |        | Explanation, question-answer, discussion, practice                                                                                                                                                                                                                                                                                                                                                                                                    |       |                                                                                                                                                                                                                                            |      |                    |                                 |

| Evaluation Criteria |                                    | If yes, please mark (X) | Percentage (%) Contribution to the Overall Average |
|---------------------|------------------------------------|-------------------------|----------------------------------------------------|
|                     | 1. Midterm Exam                    | X                       | 40                                                 |
|                     | 2. Midterm Exam                    |                         |                                                    |
|                     | 3. Midterm Exam                    |                         |                                                    |
|                     | Oral Exam                          |                         |                                                    |
|                     | Practical Exam (Lab, Project etc.) |                         |                                                    |
|                     | Semester Final Exam                | X                       | 60                                                 |

| Semester Course Plan |                                                               |
|----------------------|---------------------------------------------------------------|
| Week                 | Syllabus                                                      |
| 1                    | Definition and General Features of the Atmosphere             |
| 2                    | Heat and Temperature in the Atmosphere                        |
| 3                    | Energy Uptake and Energy Transmission Forms in the Atmosphere |
| 4                    | Plant and Temperature Relationship                            |
| 5                    | Frost Event and Effects of Frost on Plants                    |
| 6                    | Air Moisture Content and Humidity Measurement Techniques      |
| 7                    | Evaporation and Condensation Events in the Atmosphere         |
| 8                    | Midterm Exam                                                  |
| 9                    | Atmospheric Pressure and Wind                                 |
| 10                   | Types of Clouds and Precipitation                             |
| 11                   | Climate Types and Classifications                             |
| 12                   | Microclimate and Effects on Plants                            |
| 13                   | Climate Change and Effects on Plant Production                |
| 14                   | Final Exam                                                    |



**DESCRIPTION FORM OF COURSE**

|                                                      |               |                                                                                                                                                                                                                                                                                                                                                                    |              |                                                                                                                                                                                                         |             |                        |                                        |
|------------------------------------------------------|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|------------------------|----------------------------------------|
| <b>Course Code and Name:</b> TTO211 Soil Information |               |                                                                                                                                                                                                                                                                                                                                                                    |              | <b>Program:</b> Organic Agriculture                                                                                                                                                                     |             |                        |                                        |
| <b>Semester</b>                                      | <b>Theory</b> | <b>Prac.</b>                                                                                                                                                                                                                                                                                                                                                       | <b>Total</b> | <b>Credits</b>                                                                                                                                                                                          | <b>ECTS</b> | <b>Course Language</b> | <b>Course Type Compulsory/Elective</b> |
| Spring Term                                          | 2             | 0                                                                                                                                                                                                                                                                                                                                                                  | 2            | 2                                                                                                                                                                                                       | 4           | Turkish                | Compulsory                             |
| <b>Course Prerequisites</b>                          |               | There are no prerequisites.                                                                                                                                                                                                                                                                                                                                        |              |                                                                                                                                                                                                         |             |                        |                                        |
| <b>Course Instructor</b>                             |               | Prof. Dr. Numan YILDIRIM                                                                                                                                                                                                                                                                                                                                           |              | <b>Email :</b> numanyildirim@munzur.edu.tr<br><b>Web :</b><br><a href="https://akademik.yok.gov.tr/AkademikArama/view/viewAuthor.jsp">https://akademik.yok.gov.tr/AkademikArama/view/viewAuthor.jsp</a> |             |                        |                                        |
| <b>Objectives of the Course</b>                      |               | The aim of this course is to enable students to recognize soil formation, rocks and minerals found in soil and the elements that form them, to establish relationships between the physical, chemical and biological properties of soil, and to determine which agricultural practices should be implemented to improve soil quality according to soil conditions. |              |                                                                                                                                                                                                         |             |                        |                                        |
| <b>Course Learning Outcomes and Competencies</b>     |               | 1. Define soil formation and its resources<br>3. Have knowledge about the physical, chemical and biological properties of the soil.<br>4. Describe soil structure and its fractions.<br>5. Explains soil color, soil temperature and soil porosity.                                                                                                                |              |                                                                                                                                                                                                         |             |                        |                                        |
| <b>Textbooks and/or Other Required Materials</b>     |               | Lecture Notes                                                                                                                                                                                                                                                                                                                                                      |              |                                                                                                                                                                                                         |             |                        |                                        |
| <b>Course presentation format</b>                    |               | Face to face, Online                                                                                                                                                                                                                                                                                                                                               |              |                                                                                                                                                                                                         |             |                        |                                        |
| <b>Teaching Methods and Techniques</b>               |               | Explanation, presentation, group work, field work                                                                                                                                                                                                                                                                                                                  |              |                                                                                                                                                                                                         |             |                        |                                        |

| Evaluation Criteria |                                    | If yes, please mark (X). | Percentage (%) Contribution to the Overall Average |
|---------------------|------------------------------------|--------------------------|----------------------------------------------------|
|                     | 1. Midterm Exam                    | X                        | 40                                                 |
|                     | 2. Midterm Exam                    |                          |                                                    |
|                     | 3. Midterm Exam                    |                          |                                                    |
|                     | Oral examination                   |                          |                                                    |
|                     | Applied Exam (Laboratory, Project, | X                        | 60                                                 |

|  |                   |  |  |
|--|-------------------|--|--|
|  | etc.)             |  |  |
|  | <b>Final Exam</b> |  |  |

| <b>Term Lesson Plan</b> |                                      |
|-------------------------|--------------------------------------|
| <b>Week</b>             | <b>Curriculum</b>                    |
| <b>1</b>                | The concept of soil                  |
| <b>2</b>                | Soil formation                       |
| <b>3</b>                | Mineral and organic parent materials |
| <b>4</b>                | Factors affecting soil formation     |
| <b>5</b>                | Soil chemistry                       |
| <b>6</b>                | Soil biology                         |
| <b>7</b>                | Soil structure                       |
| <b>8</b>                | Midterm Exam                         |
| <b>9</b>                | Soil fractions                       |
| <b>10</b>               | Earth color                          |
| <b>11</b>               | Soil porosity                        |
| <b>12</b>               | Soil temperature                     |
| <b>13</b>               | Plant growth chemicals               |
| <b>14</b>               | Soil tillage and fertilizers         |

### DESCRIPTION FORM OF COURSE

|                                               |        |                                                                                                                                                                                                                                                                                                                                                      |       |                                                                                                                                                                                                                                               |      |                    |                                 |
|-----------------------------------------------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|--------------------|---------------------------------|
| Course Code and Name: TTO213 Plant Protection |        |                                                                                                                                                                                                                                                                                                                                                      |       | Program: Organic Agriculture                                                                                                                                                                                                                  |      |                    |                                 |
| Semester                                      | Theory | Prac.                                                                                                                                                                                                                                                                                                                                                | Total | Credits                                                                                                                                                                                                                                       | ECTS | Language of Course | Course Type Compulsory/Elective |
| Spring Semester                               | 3      |                                                                                                                                                                                                                                                                                                                                                      | 3     | 3                                                                                                                                                                                                                                             | 2    | Turkish            | Compulsory                      |
| Prerequisites of Course                       |        | There are no prerequisites.                                                                                                                                                                                                                                                                                                                          |       |                                                                                                                                                                                                                                               |      |                    |                                 |
| Course Instructor                             |        | Prof. Dr. Mevlüt ALATAŞ                                                                                                                                                                                                                                                                                                                              |       | E-posta : mevlutalatas@munzur.edu.tr<br>Web : <a href="https://www.munzur.edu.tr/birimler/akademik/myo/tmyo/bolumler/bitkisel/Pages/akadro.aspx">https://www.munzur.edu.tr/birimler/akademik/myo/tmyo/bolumler/bitkisel/Pages/akadro.aspx</a> |      |                    |                                 |
| Aims of Course                                |        | To recognize physiological disorders, bacterial, fungal and viral disease symptoms of cultivated plants and to apply methods of combating these diseases.                                                                                                                                                                                            |       |                                                                                                                                                                                                                                               |      |                    |                                 |
| Course Learning Outcomes and Competencies     |        | 1. Recognizes plant disease agents.<br>2. Knows the penetration and infection physiology of pathogens.<br>3. Knows the effects of pathogens on plant physiological functions.<br>4. Knows the conditions that cause epidemics to occur.<br>5. Knows the methods of combating plant disease agents and occupational and worker health in combating.   |       |                                                                                                                                                                                                                                               |      |                    |                                 |
| Textbooks and /or Other Required Materials    |        | Lecture notes of the instructor who taught the course,<br>Kaygısız, H., Diseases in Plant Production. Hasad Publications. Istanbul, 2002.<br><br>Prof. Dr. Özdemir Alaoğlu,Prof. Dr. Nuh Boyraz,Prof. Dr. Ahmet Güncan,Prof. Dr. Kubilay Kurtuluş Baştaş, Plant Protection, Atlas Academy, 2024<br><br>Ankara University, Open Archive Lecture Notes |       |                                                                                                                                                                                                                                               |      |                    |                                 |
| Method of delivery of the course              |        | Face to face / Online                                                                                                                                                                                                                                                                                                                                |       |                                                                                                                                                                                                                                               |      |                    |                                 |
| Teaching Methods and Techniques               |        | Explanation, question-answer, discussion, practice                                                                                                                                                                                                                                                                                                   |       |                                                                                                                                                                                                                                               |      |                    |                                 |

| Evaluation Criteria |                                    | If yes, please mark (X) | Percentage (%) Contribution to the Overall Average |
|---------------------|------------------------------------|-------------------------|----------------------------------------------------|
|                     | 1. Midterm Exam                    | X                       | 40                                                 |
|                     | 2. Midterm Exam                    |                         |                                                    |
|                     | 3. Midterm Exam                    |                         |                                                    |
|                     | Oral Exam                          |                         |                                                    |
|                     | Practical Exam (Lab, Project etc.) |                         |                                                    |
|                     | Semester Final Exam                | X                       | 60                                                 |

| Semester Course Plan |                                                                                                             |
|----------------------|-------------------------------------------------------------------------------------------------------------|
| Week                 | Syllabus                                                                                                    |
| 1                    | Definition of Plant Protection and Entomological Factors                                                    |
| 2                    | External (Morphological) Structure of Insects                                                               |
| 3                    | Structure and Function of Internal Organs in Insects (Anatomy, Physiology, Reproduction and Development)    |
| 4                    | Insect Ecology                                                                                              |
| 5                    | Fighting with Insects (Cultural, Biological, Physical, Biotechnological, Chemical)                          |
| 6                    | Methods for taking soil samples and preparing them for analysis, drying, grinding, sifting and storing them |
| 7                    | Insect Taxonomy                                                                                             |
| 8                    | Midterm                                                                                                     |
| 9                    | Plant Protection Phytopathology                                                                             |
| 10                   | Plant Pathogenic Fungi                                                                                      |
| 11                   | Plant Pathogenic Bacteria                                                                                   |
| 12                   | Weeds and Flowering Parasitic Plants                                                                        |
| 13                   | Hygiene and Therapy (Science of Disease Prevention and Treatment)                                           |
| 14                   | Abiotic Factors                                                                                             |
| 15                   | Final exam                                                                                                  |

### DESCRIPTION FORM OF COURSE

|                                                       |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |       |                                                                                                                                        |      |                    |                                 |
|-------------------------------------------------------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|----------------------------------------------------------------------------------------------------------------------------------------|------|--------------------|---------------------------------|
| Course Code and Name: TTO307 Greenhouse cultivation-I |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |       | Program: Organic Agriculture                                                                                                           |      |                    |                                 |
| Semester                                              | Theory | Prac.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Total | Credits                                                                                                                                | ECTS | Language of Course | Course Type Compulsory/Elective |
| Fall Semester                                         | 2      | 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 4     | 3                                                                                                                                      | 4    | Turkish            | Compulsory                      |
| Prerequisites of Course                               |        | There are no prerequisites.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |       |                                                                                                                                        |      |                    |                                 |
| Course Instructor                                     |        | Prof. Dr. Mevlüt ALATAŞ                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |       | E-posta : mevlutalatas@munzur.edu.tr<br>Web : https://www.munzur.edu.tr/birimler/akademik/myo/tmyo/bolumler/bitkisel/Pages/akadro.aspx |      |                    |                                 |
| Aims of Course                                        |        | To teach the history of greenhouse farming, its place in the world and in Turkey, the classification of greenhouses, ecological and economic factors affecting the selection of greenhouse location, introduction of greenhouse elements, and planning of the greenhouse interior.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |       |                                                                                                                                        |      |                    |                                 |
| Course Learning Outcomes and Competencies             |        | 1. Learns the concepts of greenhouse and greenhouse farming.<br>2. Knows and analyzes the current status of greenhouse farming in Turkey.<br>3. Knows and analyzes the current status of greenhouse farming in the world.<br>4. Knows the techniques and methods of production, cultivation and maintenance in greenhouses.<br>5. Analyzes where, how and how economically a greenhouse can be established.<br>6. Increases the yield of products grown in greenhouses.<br>7. Becomes informed about how its quality can be increased.<br>8. Learns what to do in the next stage after establishing a greenhouse.<br>9. Prepares soil in the greenhouse. Performs cultural processes in the greenhouse.<br>10. Learns soilless agriculture, knows its methods and techniques and gains the qualification to apply it. |       |                                                                                                                                        |      |                    |                                 |
| Textbooks and /or Other Required Materials            |        | Lecture notes of the instructor,<br><br>Sevgican, A., 2002. Ertekin, Ü., 2002. Greenhouse and Covered Cultivation. Mars Press, Ankara.<br><br>Ankara University open archive lecture notes.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |       |                                                                                                                                        |      |                    |                                 |
| Method of delivery of the course                      |        | Face to face / Online                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |       |                                                                                                                                        |      |                    |                                 |
| Teaching Methods and Techniques                       |        | Explanation, question-answer, discussion, practice                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |       |                                                                                                                                        |      |                    |                                 |

| Evaluation Criteria |                                       | If yes, please mark<br>(X) | Percentage (%)<br>Contribution to the<br>Overall Average |
|---------------------|---------------------------------------|----------------------------|----------------------------------------------------------|
|                     | 1. Midterm Exam                       | X                          | 40                                                       |
|                     | 2. Midterm Exam                       |                            |                                                          |
|                     | 3. Midterm Exam                       |                            |                                                          |
|                     | Oral Exam                             |                            |                                                          |
|                     | Practical Exam (Lab,<br>Project etc.) |                            |                                                          |
|                     | Semester Final Exam                   | X                          | 60                                                       |

| Semester Course Plan |                                                                                                                                  |
|----------------------|----------------------------------------------------------------------------------------------------------------------------------|
| Week                 | Syllabus                                                                                                                         |
| 1                    | Definition of Greenhouse Cultivation, History of Greenhouse Cultivation, Greenhouse Cultivation in the World                     |
| 2                    | Greenhouse Cultivation in Turkey                                                                                                 |
| 3                    | Definition of Greenhouse Effect, Greenhouse Structures                                                                           |
| 4                    | Greenhouse Structures, Low Plastic Tunnel, High Plastic Tunnel                                                                   |
| 5                    | Greenhouse Structures, Greenhouses, General Features, Factors Affecting Greenhouse Type Selection, Classification of Greenhouses |
| 6                    | Economic and Ecological Factors Affecting Greenhouse Planning                                                                    |
| 7                    | Greenhouse Structural Elements                                                                                                   |
| 8                    | Midterm                                                                                                                          |
| 9                    | Greenhouse Business Planning                                                                                                     |
| 10                   | Providing Environmental Conditions Suitable for Plant Cultivation in Greenhouses                                                 |
| 11                   | Arrangement of Greenhouse Interiors                                                                                              |
| 12                   | Plant Cultivation in Greenhouses                                                                                                 |
| 13                   | Plant Cultivation in Greenhouses, Irrigation, Automation, Drainage                                                               |
| 14                   | Plant Cultivation in Greenhouses, Cultural Processes Performed in Greenhouses                                                    |
| 15                   | Final exam                                                                                                                       |

**DESCRIPTION FORM OF COURSE**

|                                           |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |       |                                                                                                                                                                                          |      |                 |                                 |
|-------------------------------------------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|-----------------|---------------------------------|
| Course Code and Name: TTO311 Genetics     |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |       | Program: Organic Agriculture                                                                                                                                                             |      |                 |                                 |
| Semester                                  | Theory | Prac.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Total | Credits                                                                                                                                                                                  | ECTS | Course Language | Course Type Compulsory/Elective |
| Fall Semester                             | 4      | 0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 4     | 4                                                                                                                                                                                        | 4    | Turkish         | Compulsory                      |
| Course Prerequisites                      |        | There are no prerequisites.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |       |                                                                                                                                                                                          |      |                 |                                 |
| Course Instructor                         |        | Prof. Dr. Numan YILDIRIM                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |       | Email :numanyildirim@munzur.edu.tr<br>Web :<br><a href="https://akademik.yok.gov.tr/AkademikArama/view/viewAuthor.jsp">https://akademik.yok.gov.tr/AkademikArama/view/viewAuthor.jsp</a> |      |                 |                                 |
| Objectives of the Course                  |        | The aim of this course is to provide students with basic information in the field of genetics along with current applications and examples.                                                                                                                                                                                                                                                                                                                                                                    |       |                                                                                                                                                                                          |      |                 |                                 |
| Course Learning Outcomes and Competencies |        | 1. Define the basic concepts used in genetics and model organisms. 2. Understand the biochemical reaction conditions that occur in foods.<br>3. Interpret the chromosome theory of inheritance and Mendelian genetics<br>4. Explain the differences between eukaryotic and prokaryotic genetics.<br>5. Explain mutations and their mechanisms of action.<br>6. Know the differences between DNA and RNA<br>7. Explain how DNA replication occurs<br>8. Explain how genetically modified organisms are obtained |       |                                                                                                                                                                                          |      |                 |                                 |
| Textbooks and/or Other Required Materials |        | Öner C. (Editor). (2009). Genetic Concepts. Palme Publishing House.<br>Lecture Notes                                                                                                                                                                                                                                                                                                                                                                                                                           |       |                                                                                                                                                                                          |      |                 |                                 |
| Course presentation format                |        | Face to face, Online                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |       |                                                                                                                                                                                          |      |                 |                                 |
| Teaching Methods and Techniques           |        | Explanation, presentation, group work, field work                                                                                                                                                                                                                                                                                                                                                                                                                                                              |       |                                                                                                                                                                                          |      |                 |                                 |

| <b>Evaluation Criteria</b> |                         | <b>If yes, please mark (X).</b> | <b>Percentage (%) Contribution to the Overall Average</b> |
|----------------------------|-------------------------|---------------------------------|-----------------------------------------------------------|
|                            | <b>1. Midterm Exam</b>  | X                               | 40                                                        |
|                            | <b>2. Midterm Exam</b>  |                                 |                                                           |
|                            | <b>3. Midterm Exam</b>  |                                 |                                                           |
|                            | <b>Oral examination</b> |                                 |                                                           |

|  |                                                         |   |    |
|--|---------------------------------------------------------|---|----|
|  | <b>Applied Exam<br/>(Laboratory, Project,<br/>etc.)</b> | X | 60 |
|  | <b>Final Exam</b>                                       |   |    |

| Term Lesson Plan |                                                        |
|------------------|--------------------------------------------------------|
| Week             | Curriculum                                             |
| 1                | Concept of gene and genome                             |
| 2                | Differences between eukaryotic and prokaryotic genomes |
| 3                | Nucleic acids, DNA                                     |
| 4                | History of DNA and DNA models                          |
| 5                | Structure and properties of RNA                        |
| 6                | DNA replication                                        |
| 7                | DNA transcription                                      |
| 8                | Midterm Exam                                           |
| 9                | Mutation                                               |
| 10               | DNA repair mechanisms                                  |
| 11               | Gene cloning studies                                   |
| 12               | Protein synthesis                                      |
| 13               | Gene transfer                                          |
| 14               | GMO organisms                                          |



**DESCRIPTION FORM OF COURSE**

|                                                                        |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |       |                                                                                                                                                                                                                                               |      |                    |                                 |
|------------------------------------------------------------------------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|--------------------|---------------------------------|
| Course Code and Name: TTO313 Agricultural Mechanisation and Irrigation |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |       | Program: Organic Agriculture                                                                                                                                                                                                                  |      |                    |                                 |
| Semester                                                               | Theory | Prac.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Total | Credits                                                                                                                                                                                                                                       | ECTS | Language of Course | Course Type Compulsory/Elective |
| Fall Semester                                                          | 2      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 2     | 2                                                                                                                                                                                                                                             | 3    | Turkish            | Compulsory                      |
| Prerequisites of Course                                                |        | There are no prerequisites.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |       |                                                                                                                                                                                                                                               |      |                    |                                 |
| Course Instructor                                                      |        | Prof. Dr. Mevlüt ALATAŞ                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |       | E-posta : mevlutalatas@munzur.edu.tr<br>Web : <a href="https://www.munzur.edu.tr/birimler/akademik/myo/tmyo/bolumler/bitkisel/Pages/akadro.aspx">https://www.munzur.edu.tr/birimler/akademik/myo/tmyo/bolumler/bitkisel/Pages/akadro.aspx</a> |      |                    |                                 |
| Aims of Course                                                         |        | Definition of agricultural mechanization, its benefits, our country's agricultural mechanization level. To provide information about agricultural tools and machines, tractors, machines included in tools and machines.<br><br>To understand irrigation methods in agriculture.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |       |                                                                                                                                                                                                                                               |      |                    |                                 |
| Course Learning Outcomes and Competencies                              |        | 1. Explains the development and importance of Agricultural Mechanization.<br>2. Learns the importance and benefits of Agricultural Mechanization in agriculture.<br>3. Understands the features and privileges of the tools, vehicles and equipment to be used for good agricultural mechanization.<br>4. Understands the development and importance of agricultural mechanization in the world and in Türkiye.<br>5. Explains the tools and equipment in Agricultural Mechanization.<br>6. Learns the tractor and its types.<br>7. Learns the sowing, planting and fertilizing machines.<br>8. Learns about plant protection machines and harvesting machines.<br>9. Explains irrigation methods in agriculture.<br>10. Understands the importance of water in plant production.<br>11. Learns the surface irrigation and pressurized irrigation methods in agricultural areas.<br>12. Understands the importance of agricultural drainage. |       |                                                                                                                                                                                                                                               |      |                    |                                 |
| Textbooks and /or Other Required Materials                             |        | Lecture notes of the instructor<br><br>Agricultural Mechanization 1, Çukurova University Publications, 2011<br><br>MEB, Agricultural Field Application 9th grade Textbook<br><br>Gürol Yıldırım, Micro-Irrigation System Lateral Pipe Flow Hydraulics - Analytical Solutions and Design Applications, Nobel Academy Publishing, 2024.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |       |                                                                                                                                                                                                                                               |      |                    |                                 |
| Method of delivery of the course                                       |        | Face to face / Online                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |       |                                                                                                                                                                                                                                               |      |                    |                                 |
| Teaching Methods and Techniques                                        |        | Explanation, question-answer, discussion, practice                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |       |                                                                                                                                                                                                                                               |      |                    |                                 |

| Evaluation Criteria |                                    | If yes, please mark (X) | Percentage (%) Contribution to the Overall Average |
|---------------------|------------------------------------|-------------------------|----------------------------------------------------|
|                     | 1. Midterm Exam                    | X                       | 40                                                 |
|                     | 2. Midterm Exam                    |                         |                                                    |
|                     | 3. Midterm Exam                    |                         |                                                    |
|                     | Oral Exam                          |                         |                                                    |
|                     | Practical Exam (Lab, Project etc.) |                         |                                                    |
|                     | Semester Final Exam                | X                       | 60                                                 |

| Semester Course Plan |                                                                    |
|----------------------|--------------------------------------------------------------------|
| Week                 | Syllabus                                                           |
| 1                    | Definition of Agricultural Mechanization                           |
| 2                    | Development and Importance of Agricultural Mechanization           |
| 3                    | Energy Sources in Agriculture                                      |
| 4                    | Energy Sources in Agriculture, Tractors                            |
| 5                    | Agricultural Tractors and Soil Tillage Mechanization               |
| 6                    | Relationship between Tractor and Soil Tillage Machine              |
| 7                    | Planting Methods                                                   |
| 8                    | Midterm                                                            |
| 9                    | Definition and Importance of Irrigation,                           |
| 10                   | Water transmission and distribution structures                     |
| 11                   | Importance of Irrigation for Plants and Surface Irrigation Methods |
| 12                   | Surface Irrigation Methods                                         |
| 13                   | Pressure Irrigation Methods                                        |
| 14                   | Pressure Irrigation Methods                                        |
| 15                   | Final exam                                                         |

**DESCRIPTION FORM OF COURSE**

|                                            |        |                                                                                                                                                                                                                                                                                                                                                      |       |                                                                                                                                                                                          |      |                 |                                 |
|--------------------------------------------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|-----------------|---------------------------------|
| Course Code and Name: TTO323 Biotechnology |        |                                                                                                                                                                                                                                                                                                                                                      |       | Program: Organic Agriculture                                                                                                                                                             |      |                 |                                 |
| Semester                                   | Theory | Prac.                                                                                                                                                                                                                                                                                                                                                | Total | Credits                                                                                                                                                                                  | ECTS | Course Language | Course Type Compulsory/Elective |
| Spring Term                                | 2      | 0                                                                                                                                                                                                                                                                                                                                                    | 2     | 2                                                                                                                                                                                        | 3    | Turkish         | Compulsory                      |
| Course Prerequisites                       |        | There are no prerequisites.                                                                                                                                                                                                                                                                                                                          |       |                                                                                                                                                                                          |      |                 |                                 |
| Course Instructor                          |        | Prof. Dr. Numan YILDIRIM                                                                                                                                                                                                                                                                                                                             |       | Email :numanyildirim@munzur.edu.tr<br>Web :<br><a href="https://akademik.yok.gov.tr/AkademikArama/view/viewAuthor.jsp">https://akademik.yok.gov.tr/AkademikArama/view/viewAuthor.jsp</a> |      |                 |                                 |
| Objectives of the Course                   |        | This course aims to help students understand what biotechnology means and where it is used.<br>concepts; distinguish between traditional and modern biotechnology<br>It aims to enable them to learn the areas in which biotechnology serves.                                                                                                        |       |                                                                                                                                                                                          |      |                 |                                 |
| Course Learning Outcomes and Competencies  |        | 1. Define biotechnology<br>2. Give examples of animal biotechnology application areas<br>3. Gain knowledge about the techniques used in plant biotechnology<br>4. Define microbial biotechnology<br>5. Gain knowledge about current applications of biotechnology<br>6. Define the fields of Environmental and Food Biotechnology and give examples. |       |                                                                                                                                                                                          |      |                 |                                 |
| Textbooks and/or Other Required Materials  |        | Lecture Notes                                                                                                                                                                                                                                                                                                                                        |       |                                                                                                                                                                                          |      |                 |                                 |
| Course presentation format                 |        | Face to face, Online                                                                                                                                                                                                                                                                                                                                 |       |                                                                                                                                                                                          |      |                 |                                 |
| Teaching Methods and Techniques            |        | Explanation, presentation, group work, field work                                                                                                                                                                                                                                                                                                    |       |                                                                                                                                                                                          |      |                 |                                 |

| <b>Evaluation Criteria</b> |                                           | <b>If yes, please mark (X).</b> | <b>Percentage (%) Contribution to the Overall Average</b> |
|----------------------------|-------------------------------------------|---------------------------------|-----------------------------------------------------------|
|                            | <b>1. Midterm Exam</b>                    | X                               | 40                                                        |
|                            | <b>2. Midterm Exam</b>                    |                                 |                                                           |
|                            | <b>3. Midterm Exam</b>                    |                                 |                                                           |
|                            | <b>Oral examination</b>                   |                                 |                                                           |
|                            | <b>Applied Exam (Laboratory, Project,</b> | X                               | 60                                                        |

|  |                   |  |  |
|--|-------------------|--|--|
|  | etc.)             |  |  |
|  | <b>Final Exam</b> |  |  |

| <b>Term Lesson Plan</b> |                                                                 |
|-------------------------|-----------------------------------------------------------------|
| <b>Week</b>             | <b>Curriculum</b>                                               |
| <b>1</b>                | Concept of Biotechnology                                        |
| <b>2</b>                | History of biotechnology                                        |
| <b>3</b>                | Definition and application areas of Food Biotechnology          |
| <b>4</b>                | Definition and application areas of Environmental Biotechnology |
| <b>5</b>                | Definition and application areas of Plant Biotechnology         |
| <b>6</b>                | Plant tissue culture methods                                    |
| <b>7</b>                | Definition and application areas of Animal Biotechnology        |
| <b>8</b>                | Midterm Exam                                                    |
| <b>9</b>                | Definition and application areas of Animal Biotechnology        |
| <b>10</b>               | Microbial biotechnology                                         |
| <b>11</b>               | Enzyme microbiotechnology                                       |
| <b>12</b>               | Fermentation methods                                            |
| <b>13</b>               | Characteristics of a good industrial microorganism              |
| <b>14</b>               | Industrial biotechnology                                        |

**DESCRIPTION FORM OF COURSE**

|                                                        |        |                                                                                                                                                                                                                                                                  |       |                                                                                                                                                                                                                                               |      |                    |                                 |
|--------------------------------------------------------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|--------------------|---------------------------------|
| Course Code and Name: TTO403 Greenhouse cultivation-II |        |                                                                                                                                                                                                                                                                  |       | Program: Organic Agriculture                                                                                                                                                                                                                  |      |                    |                                 |
| Semester                                               | Theory | Prac.                                                                                                                                                                                                                                                            | Total | Credits                                                                                                                                                                                                                                       | ECTS | Language of Course | Course Type Compulsory/Elective |
| Spring Semester                                        | 2      | 2                                                                                                                                                                                                                                                                | 4     | 3                                                                                                                                                                                                                                             | 4    | Turkish            | Compulsory                      |
| Prerequisites of Course                                |        | There are no prerequisites.                                                                                                                                                                                                                                      |       |                                                                                                                                                                                                                                               |      |                    |                                 |
| Course Instructor                                      |        | Prof. Dr. Mevlüt ALATAŞ                                                                                                                                                                                                                                          |       | E-posta : mevlutalatas@munzur.edu.tr<br>Web : <a href="https://www.munzur.edu.tr/birimler/akademik/myo/tmyo/bolumler/bitkisel/Pages/akadro.aspx">https://www.munzur.edu.tr/birimler/akademik/myo/tmyo/bolumler/bitkisel/Pages/akadro.aspx</a> |      |                    |                                 |
| Aims of Course                                         |        | Practicing greenhouse farming, growing seasonal plant species.                                                                                                                                                                                                   |       |                                                                                                                                                                                                                                               |      |                    |                                 |
| Course Learning Outcomes and Competencies              |        | 1. Understands the place and importance of greenhouse farming in agriculture.<br>2. Performs seed sowing, seedling planting and maintenance operations in the greenhouse.<br>3. Grows seasonal plant species (vegetables, fruits and flowers) in the greenhouse. |       |                                                                                                                                                                                                                                               |      |                    |                                 |
| Textbooks and /or Other Required Materials             |        | Lectures of the instructor,<br>MEB, Greenhouse Cultivation Systems Textbook.,<br>K. Savaş, Titiz Modern Greenhouse - Road Map for Investors Ansiad Publishing House, Antalya, 2004                                                                               |       |                                                                                                                                                                                                                                               |      |                    |                                 |
| Method of delivery of the course                       |        | Face to face / Online                                                                                                                                                                                                                                            |       |                                                                                                                                                                                                                                               |      |                    |                                 |
| Teaching Methods and Techniques                        |        | Explanation, question-answer, discussion, practice                                                                                                                                                                                                               |       |                                                                                                                                                                                                                                               |      |                    |                                 |

| Evaluation Criteria |                                    | If yes, please mark (X) | Percentage (%) Contribution to the Overall Average |
|---------------------|------------------------------------|-------------------------|----------------------------------------------------|
|                     | 1. Midterm Exam                    | X                       | 40                                                 |
|                     | 2. Midterm Exam                    |                         |                                                    |
|                     | 3. Midterm Exam                    |                         |                                                    |
|                     | Oral Exam                          |                         |                                                    |
|                     | Practical Exam (Lab, Project etc.) |                         |                                                    |
|                     | Semester Final Exam                | X                       | 60                                                 |

| Semester Course Plan |                                                                                          |
|----------------------|------------------------------------------------------------------------------------------|
| Week                 | Syllabus                                                                                 |
| 1                    | The importance of greenhouse farming, its history, its situation in the world and Turkey |
| 2                    | Soilless Agriculture                                                                     |
| 3                    | Greenhouse Tomato Cultivation                                                            |
| 4                    | Greenhouse Pepper Cultivation                                                            |
| 5                    | Greenhouse Cucumber Cultivation                                                          |
| 6                    | Greenhouse Eggplant Cultivation                                                          |
| 7                    | Greenhouse Banana Cultivation                                                            |
| 8                    | Midterm                                                                                  |
| 9                    | Greenhouse Strawberry Cultivation                                                        |
| 10                   | Greenhouse Melon Cultivation                                                             |
| 11                   | Greenhouse Squash and Cut Flower Cultivation                                             |
| 12                   | Greenhouse Lettuce Cultivation                                                           |
| 13                   | Greenhouse Onion Cultivation                                                             |
| 14                   | Greenhouse Watermelon and Potted Flower Cultivation                                      |
| 15                   | Final exam                                                                               |

**DESCRIPTION FORM OF COURSE**

|                                                                              |               |                                                                                                                                                                                                                                                                                                                                   |              |                                                                                                                                                                                                         |             |                        |                                        |
|------------------------------------------------------------------------------|---------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|------------------------|----------------------------------------|
| <b>Course Code and Name:</b> TTO409 Methods of Determination of GMO Products |               |                                                                                                                                                                                                                                                                                                                                   |              | <b>Program: Organic Agriculture</b>                                                                                                                                                                     |             |                        |                                        |
| <b>Semester</b>                                                              | <b>Theory</b> | <b>Prac.</b>                                                                                                                                                                                                                                                                                                                      | <b>Total</b> | <b>Credits</b>                                                                                                                                                                                          | <b>ECTS</b> | <b>Course Language</b> | <b>Course Type Compulsory/Elective</b> |
| Spring Term                                                                  | 4             | 0                                                                                                                                                                                                                                                                                                                                 | 4            | 4                                                                                                                                                                                                       | 5           | Turkish                | Compulsory                             |
| <b>Course Prerequisites</b>                                                  |               | There are no prerequisites.                                                                                                                                                                                                                                                                                                       |              |                                                                                                                                                                                                         |             |                        |                                        |
| <b>Course Instructor</b>                                                     |               | Prof. Dr. Numan YILDIRIM                                                                                                                                                                                                                                                                                                          |              | <b>Email :</b> numanyildirim@munzur.edu.tr<br><b>Web :</b><br><a href="https://akademik.vok.gov.tr/AkademikArama/view/viewAuthor.jsp">https://akademik.vok.gov.tr/AkademikArama/view/viewAuthor.jsp</a> |             |                        |                                        |
| <b>Objectives of the Course</b>                                              |               | This course aims to help students understand what Genetically Modified Organisms mean, where they are used, to learn about the effects of GMO products on health, and to teach the methods used to identify GMO products.                                                                                                         |              |                                                                                                                                                                                                         |             |                        |                                        |
| <b>Course Learning Outcomes and Competencies</b>                             |               | 1. Define GMO<br>2. Gain information about the techniques used to produce GMO organisms.<br>3. Knows the effects of GMO products on health and gives examples<br>4. List the GMO detection methods based on protein<br>5. Learn about methods for gene identification<br>6. Can decide which method to use for which type of food |              |                                                                                                                                                                                                         |             |                        |                                        |
| <b>Textbooks and/or Other Required Materials</b>                             |               | Lecture Notes                                                                                                                                                                                                                                                                                                                     |              |                                                                                                                                                                                                         |             |                        |                                        |
| <b>Course presentation format</b>                                            |               | Face to face, Online                                                                                                                                                                                                                                                                                                              |              |                                                                                                                                                                                                         |             |                        |                                        |
| <b>Teaching Methods and Techniques</b>                                       |               | Explanation, presentation, group work, field work                                                                                                                                                                                                                                                                                 |              |                                                                                                                                                                                                         |             |                        |                                        |

| <b>Evaluation Criteria</b> |                                           | <b>If yes, please mark (X).</b> | <b>Percentage (%) Contribution to the Overall Average</b> |
|----------------------------|-------------------------------------------|---------------------------------|-----------------------------------------------------------|
|                            | <b>1. Midterm Exam</b>                    | X                               | <b>40</b>                                                 |
|                            | <b>2. Midterm Exam</b>                    |                                 |                                                           |
|                            | <b>3. Midterm Exam</b>                    |                                 |                                                           |
|                            | <b>Oral examination</b>                   |                                 |                                                           |
|                            | <b>Applied Exam (Laboratory, Project,</b> | X                               | <b>60</b>                                                 |

|  |                   |  |  |
|--|-------------------|--|--|
|  | etc.)             |  |  |
|  | <b>Final Exam</b> |  |  |

| <b>Term Lesson Plan</b> |                                                     |
|-------------------------|-----------------------------------------------------|
| <b>Week</b>             | <b>Curriculum</b>                                   |
| <b>1</b>                | The Concept of GMO                                  |
| <b>2</b>                | The world market for GMO foods                      |
| <b>3</b>                | Methods used in the production of GMO products      |
| <b>4</b>                | Genetic sources used in GMO production              |
| <b>5</b>                | Examples of plants produced with GMO                |
| <b>6</b>                | Examples of plants produced with GMO                |
| <b>7</b>                | Effects of GMO products on health                   |
| <b>8</b>                | Midterm Exam                                        |
| <b>9</b>                | Methods for identifying GMO products                |
| <b>10</b>               | Gene-based methods                                  |
| <b>11</b>               | Protein-based Methods                               |
| <b>12</b>               | Laboratory techniques used to identify GMO products |
| <b>13</b>               | Laboratory stages used in determining GMO products  |
| <b>14</b>               | Case studies                                        |



**DESCRIPTION FORM OF COURSE**

|                                                                   |        |                                                                                                                                                                                                                                                                                                                                                                                 |       |                                                                                                                                        |      |                    |                                 |
|-------------------------------------------------------------------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|----------------------------------------------------------------------------------------------------------------------------------------|------|--------------------|---------------------------------|
| Course Code and Name: TTO419 Organic Agriculture and Forage Crops |        |                                                                                                                                                                                                                                                                                                                                                                                 |       | Program: Organic Agriculture                                                                                                           |      |                    |                                 |
| Semester                                                          | Theory | Prac.                                                                                                                                                                                                                                                                                                                                                                           | Total | Credits                                                                                                                                | ECTS | Language of Course | Course Type Compulsory/Elective |
| Spring Semester                                                   | 2      |                                                                                                                                                                                                                                                                                                                                                                                 | 2     | 2                                                                                                                                      | 2    | Turkish            | Elective                        |
| Prerequisites of Course                                           |        | There are no prerequisites.                                                                                                                                                                                                                                                                                                                                                     |       |                                                                                                                                        |      |                    |                                 |
| Course Instructor                                                 |        | Prof. Dr. Mevlüt ALATAŞ                                                                                                                                                                                                                                                                                                                                                         |       | E-posta : mevlutalatas@munzur.edu.tr<br>Web : https://www.munzur.edu.tr/birimler/akademik/myo/tmyo/bolumler/bitkisel/Pages/akadro.aspx |      |                    |                                 |
| Aims of Course                                                    |        | To understand the importance of meadows and pastures, to provide information about meadow and pasture management and improvement, and to provide a general understanding of forage crop cultivation.                                                                                                                                                                            |       |                                                                                                                                        |      |                    |                                 |
| Course Learning Outcomes and Competencies                         |        | 1. Çayır meraların tanımını ve ekonomik ve diğer önemlerini kavrar.<br>2. Çayır meraların yönetimi ve ıslahı hakkında bilgi sahibi olur.<br>3. Çayır ve meralarda yetişen yem bitkilerini tanıır ve yetiştiriciliğini öğrenir.                                                                                                                                                  |       |                                                                                                                                        |      |                    |                                 |
| Textbooks and /or Other Required Materials                        |        | Lecture notes of the instructor,<br><br>Altın, M.1994. Meadow-Pasture Management. Trakya University, Tekirdağ Faculty of Agriculture. Publication No:222, Textbook No:26, Tekirdağ<br><br>Gökkuş, A. Koç, 2005. Meadow Pasture Improvement. Republic of Turkey. Ministry of Agriculture and Rural Affairs. Meadow Pasture and Basin Development Department, Ankara TEKELİ A.Ş., |       |                                                                                                                                        |      |                    |                                 |
| Method of delivery of the course                                  |        | Face to face / Online                                                                                                                                                                                                                                                                                                                                                           |       |                                                                                                                                        |      |                    |                                 |
| Teaching Methods and Techniques                                   |        | Explanation, question-answer, discussion, practice                                                                                                                                                                                                                                                                                                                              |       |                                                                                                                                        |      |                    |                                 |

| Evaluation Criteria |                                    | If yes, please mark (X) | Percentage (%) Contribution to the Overall Average |
|---------------------|------------------------------------|-------------------------|----------------------------------------------------|
|                     | 1. Midterm Exam                    | X                       | 40                                                 |
|                     | 2. Midterm Exam                    |                         |                                                    |
|                     | 3. Midterm Exam                    |                         |                                                    |
|                     | Oral Exam                          |                         |                                                    |
|                     | Practical Exam (Lab, Project etc.) |                         |                                                    |
|                     | Semester Final Exam                | X                       | 60                                                 |

| Semester Course Plan |                                                                  |
|----------------------|------------------------------------------------------------------|
| Week                 | Syllabus                                                         |
| 1                    | Definition and Classification of Pastures                        |
| 2                    | Definition and Scope of Pasture Management                       |
| 3                    | Relationships of Pasture Management with Plant Ecology           |
| 4                    | Grazing Systems                                                  |
| 5                    | Pasture Management                                               |
| 6                    | Graze Forage Crops 1                                             |
| 7                    | Graze Forage Crops 2                                             |
| 8                    | Midterm                                                          |
| 9                    | Cereal Forage Crops 3                                            |
| 10                   | Cereal Forage Crops 4                                            |
| 11                   | Status of Forage Crops Agriculture and Planting Areas in Turkey, |
| 12                   | General Morphological Characteristics of Legume Forage Crops     |
| 13                   | Special Legume Forage Crops                                      |
| 14                   | Special Legume Forage Crops                                      |
| 15                   | Final exam                                                       |

### COURSE DESCRIPTION FORM

**Course Code and Name: TTO413 - Conservation, Packaging, and Transportation**

**Program: Organic Agriculture**

| Semester                           | Theory | Practice                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Total Hours | Credits | AKTS                                                                                                                              | Course Language: | Course Type<br>Compulsory/Elective |
|------------------------------------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|---------|-----------------------------------------------------------------------------------------------------------------------------------|------------------|------------------------------------|
| Spring Semester                    | 4      | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 4           | 4       | 4                                                                                                                                 | Turkish          | Compulsory                         |
| Course Prerequisites               |        | There are no prerequisites .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |             |         |                                                                                                                                   |                  |                                    |
| Instructor:                        |        | Assoc. Prof. Dr. Neslihan TAŞAR                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |             |         | Email : ntasar@munzur.edu.tr<br>Web :<br>https://www.munzur.edu.tr/birimler/akademik/myo/tmyo/bolumler/bitkisel/Pages/akadro.aspx |                  |                                    |
| Course Objectives                  |        | .<br><br>This course aims to provide students with the knowledge and skills related to applying food preservation methods that reduce microbial activity or eliminate microorganisms, within the framework of occupational health and safety and environmental protection. It also covers the effectiveness of packaging in preserving food and the different preservation and packaging techniques used.                                                                                                                         |             |         |                                                                                                                                   |                  |                                    |
| Learning Outcomes and Competencies |        | 1.The student will be able to evaluate packaging methods for specialty foods and analyze the suitability of different types of packaging materials.<br><br>2.The student will be able to explain food preservation methods and identify the advantages and limitations of each method.<br><br>3.The student will acquire basic knowledge about packaging materials such as glass, metal, plastic, and paper, as well as modified atmosphere packaging, transport packaging, and packaging techniques specific to specialty foods. |             |         |                                                                                                                                   |                  |                                    |
| Course Material                    |        | Lecture Notes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |             |         |                                                                                                                                   |                  |                                    |
| Course Delivery                    |        | Face-to-face, Online                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |             |         |                                                                                                                                   |                  |                                    |
| Teaching Methods and Techniques    |        | * Explanation<br>* Presentation<br>* Group Work<br>* Field Work                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |             |         |                                                                                                                                   |                  |                                    |

| Evaluation Criteria | Assessment Type                            | If applicable, mark (X) | Percentage (%)<br>Contribution to Overall Grade |
|---------------------|--------------------------------------------|-------------------------|-------------------------------------------------|
|                     | Midterm Exam                               | X                       | 40                                              |
|                     | Final Exam                                 |                         |                                                 |
|                     | Oral Exam                                  |                         |                                                 |
|                     | Practical Exam                             |                         |                                                 |
|                     | Applied Exam<br>(Laboratory, Project etc.) |                         |                                                 |
|                     | Final Exam                                 | X                       | 60                                              |

| Course Weekly Schedule |                                         |
|------------------------|-----------------------------------------|
| Week                   | Topics                                  |
| 1                      | Food Spoilage and Preservation          |
| 2                      | Thermal Process Applications            |
| 3                      | Control of Water Activity               |
| 4                      | Addition of Preservatives               |
| 5                      | Controlled and Modified Atmosphere      |
| 6                      | Irradiation                             |
| 7                      | New Methods in Food Preservation        |
| 8                      | Midterm Exam                            |
| 9                      | Relationship Between Packaging and Food |
| 10                     | Geographical Indications                |
| 11                     | Glass Packaging                         |
| 12                     | Paper and Wooden Packaging              |
| 13                     | Metal and Aluminum Packaging            |
| 14                     | Final Exam                              |

### COURSE DESCRIPTION FORM

**Course Code and Name: TTO103 - Organic Plant Production**

**Program: Organic Agriculture**

| Semester                           | Theory | Practice                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Total Hours | Credits | AKTS                                                                                                                                                                                                                                  | Course Language: | Course Type Compulsory/Elective |
|------------------------------------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|---------------------------------|
| Fall Semester                      | 2      | 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 4           | 3       | 6                                                                                                                                                                                                                                     | Turkish          | Compulsory                      |
| Course Prerequisites               |        | None .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |             |         |                                                                                                                                                                                                                                       |                  |                                 |
| Instructor:                        |        | Assoc. Prof. Dr. Neslihan TAŞAR                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |             |         | Email : ntasar@munzur.edu.tr<br>Web : <a href="https://www.munzur.edu.tr/birimler/akademik/myo/tmyo/bolumler/bitkisel/Pages/akadro.aspx">https://www.munzur.edu.tr/birimler/akademik/myo/tmyo/bolumler/bitkisel/Pages/akadro.aspx</a> |                  |                                 |
| Course Objectives                  |        | .<br><br>This course aims to teach students the importance and role of plant production in the Turkish economy, the definition and classification of plants, and general plant production techniques.                                                                                                                                                                                                                                                                                                                                                                                                                                                          |             |         |                                                                                                                                                                                                                                       |                  |                                 |
| Learning Outcomes and Competencies |        | 1.Explains the fundamental principles and historical development of organic agriculture.<br><br>2.Describes soil preparation, fertilization, sowing/planting, and crop maintenance practices in organic plant production.<br><br>3.Analyzes the differences between plant nutrients used in organic farming and chemical fertilizers.<br><br>4.Explains biological and mechanical methods used for pest and disease management in organic production.<br><br>5.Demonstrates knowledge of organic agriculture legislation and certification procedures.<br><br>6.Evaluates the environmental, economic, and social impacts of organic plant production systems. |             |         |                                                                                                                                                                                                                                       |                  |                                 |
| Course Material                    |        | Lecture Notes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |             |         |                                                                                                                                                                                                                                       |                  |                                 |
| Course Delivery                    |        | Face-to-face, Online                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |             |         |                                                                                                                                                                                                                                       |                  |                                 |
| Teaching Methods and               |        | * Explanation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |             |         |                                                                                                                                                                                                                                       |                  |                                 |

|                   |                                                                                                              |
|-------------------|--------------------------------------------------------------------------------------------------------------|
| <b>Techniques</b> | <ul style="list-style-type: none"> <li>* Presentation</li> <li>* Group Work</li> <li>* Field Work</li> </ul> |
|-------------------|--------------------------------------------------------------------------------------------------------------|

| <b>Evaluation Criteria</b> | <b>Assessment Type</b> | <b>If applicable, mark (X)</b> | <b>Percentage (%) Contribution to Overall Grade</b> |
|----------------------------|------------------------|--------------------------------|-----------------------------------------------------|
|                            | <b>Midterm Exam</b>    | X                              | <b>40</b>                                           |
|                            | <b>Practical Exam</b>  |                                |                                                     |
|                            | <b>Oral Exam</b>       |                                | -                                                   |
|                            | <b>Final Exam</b>      | X                              | <b>60</b>                                           |

| <b>Course Weekly Schedule</b> |                                                                                                               |
|-------------------------------|---------------------------------------------------------------------------------------------------------------|
| <b>Week</b>                   | <b>Topics</b>                                                                                                 |
| <b>1</b>                      | Introduction: History of agriculture                                                                          |
| <b>2</b>                      | Basic concepts related to plant production                                                                    |
| <b>3</b>                      | Classification of horticultural crops (fruits, vegetables), economic importance                               |
| <b>4</b>                      | Classification of field crops (cereals, industrial crops)                                                     |
| <b>5</b>                      | Classification of legumes, forage crops, medicinal plants; economic importance                                |
| <b>6</b>                      | Biological features of plants – basic concepts related to flowers, pollination, fertilization, seed formation |
| <b>7</b>                      | Plant propagation: vegetative propagation (definition, methods, characteristics), generative propagation      |
| <b>8</b>                      | Midterm Exam                                                                                                  |
| <b>9</b>                      | Principles of plant production in vegetable growing                                                           |
| <b>10</b>                     | Principles of plant production in fruit growing                                                               |
| <b>11</b>                     | Irrigated and dry farming; principles in field crop production                                                |
| <b>12</b>                     | Principles of field crop production                                                                           |
| <b>13</b>                     | Principles of field crop production                                                                           |
| <b>14</b>                     | Final Exam                                                                                                    |

### COURSE DESCRIPTION FORM

**Course Code and Name: TTO203 - Organic Plant Production II**

**Program: Organic Agriculture**

| Semester        | Theory | Practice | Total Hours | Credits | AKTS | Course Language: | Course Type Compulsory/Elective |
|-----------------|--------|----------|-------------|---------|------|------------------|---------------------------------|
| Spring Semester | 2      | 2        | 4           | 3       | 6    | Turkish          | Compulsory                      |

**Course Prerequisites**

None .

**Instructor:**

Assoc. Prof. Dr. Neslihan TAŞAR

**Email :** ntasar@munzur.edu.tr

**Web :**  
<https://www.munzur.edu.tr/birimler/akademik/myo/tmyo/bolumler/bitkisel/Pages/akadro.aspx>

**Course Objectives**

This course aims to ensure that students comprehend the basic concepts related to plant production, and understand key practices such as sowing-planting, soil tillage, irrigation, fertilization, disease, pest and weed control, pruning, and harvesting in both horticultural and field crops.

**Learning Outcomes and Competencies**

1. Explain the principles of generative propagation (seed propagation) and its application techniques in vegetables.
2. Define vegetative propagation methods using plant organs (rhizome, tuber, bulb, layering, cutting) and analyze their advantages.
3. Distinguish between types of bud grafting and whip grafting, explaining their application areas and benefits.
4. Describe propagation through tissue culture and evaluate its importance in plant production.
5. Assess the impacts of propagation techniques used in organic plant production on sustainability, quality, and productivity.

**Course Material**

Lecture Notes

**Course Delivery**

Face-to-face, Online

**Teaching Methods and Techniques**

- \* Lecture
- \* Q&A
- \* Presentation
- \* Practice
- \* Analysis

| Evaluation Criteria | Assessment Type | If applicable, mark (X) | Percentage (%) Contribution to Overall Grade |
|---------------------|-----------------|-------------------------|----------------------------------------------|
|                     | Midterm Exam    | X                       | 40%                                          |
|                     | Final Exam      |                         |                                              |
|                     | Oral Exam       |                         |                                              |
|                     | Final Exam      | X                       | 60%-                                         |

**Course Weekly Schedule**

| Week | Topics                                     |
|------|--------------------------------------------|
| 1    | Generative propagation                     |
| 2    | Propagation by seed in vegetables          |
| 3    | Vegetative propagation using plant organs  |
| 4    | Propagation by rhizomes                    |
| 5    | Propagation by tubers                      |
| 6    | Propagation by bulbs                       |
| 7    | Propagation by layering and its advantages |
| 8    | Midterm Exam                               |
| 9    | Types of budding                           |
| 10   | Cases where budding is necessary           |
| 11   | Types of grafting                          |
| 12   | Advantages of grafting                     |



|           |                                |
|-----------|--------------------------------|
| <b>13</b> | Propagation via tissue culture |
| <b>14</b> | Final Exam                     |

### COURSE DESCRIPTION FORM

**Course Code and Name: TTO305 - Organic Fertilizers and Fertilization I**

**Program: Organic Agriculture**

| Semester                           | Theory | Practice                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Total Hours | Credits | AKTS                                                                                                                                                                                                                                     | Course Language: | Course Type<br>Compulsory/Elective |
|------------------------------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|------------------------------------|
| Fall Semester                      | 3      | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 3           | 3       | 4                                                                                                                                                                                                                                        | Turkish          | Compulsory                         |
| Course Prerequisites               |        | None .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |             |         |                                                                                                                                                                                                                                          |                  |                                    |
| Instructor:                        |        | Assoc. Prof. Dr. Neslihan TAŞAR                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |             |         | Email : ntasar@munzur.edu.tr<br>Web :<br><a href="https://www.munzur.edu.tr/birimler/akademik/myo/tmyo/bolumler/bitkisel/Pages/akadro.aspx">https://www.munzur.edu.tr/birimler/akademik/myo/tmyo/bolumler/bitkisel/Pages/akadro.aspx</a> |                  |                                    |
| Course Objectives                  |        | The importance of plant nutrition, the concepts of fertilizer and fertilization, classification of fertilizers, fertilizer production and methods, calculations for determining the nutrient requirements of plants, introduction of new trend fertilizers, the relationship between plant nutrition and fertilization, and explanation of the relationships between fertilizer–plant–soil–environment.                                                                                                                                                                                                                                                                                                                                                                        |             |         |                                                                                                                                                                                                                                          |                  |                                    |
| Learning Outcomes and Competencies |        | <ol style="list-style-type: none"><li>1. Define the concepts of plant nutrition and fertilization.</li><li>2. Distinguish between macro and micronutrients and explain their roles in plant development</li><li>3. Evaluate the importance of organic fertilizers, compost, and vermicompost in plant nutrition.</li><li>4. Classify types of chemical fertilizers and apply fertilizer requirement calculation methods.</li><li>5. Identify symptoms of nutrient deficiencies in plants and develop solutions to prevent these conditions.</li><li>6. Explain the uses and effects of fertilizers containing nitrogen, phosphorus, potassium, sulfur, and micronutrients.</li><li>7. Describe the characteristics and application techniques of foliar fertilizers.</li></ol> |             |         |                                                                                                                                                                                                                                          |                  |                                    |
| Course Material                    |        | Lecture Notes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |             |         |                                                                                                                                                                                                                                          |                  |                                    |
| Course Delivery                    |        | Face-to-face, Online                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |             |         |                                                                                                                                                                                                                                          |                  |                                    |

**Teaching Methods and Techniques**

Explanation  
Presentation  
Group Work  
Field Work

| Evaluation Criteria | Assessment Type | If applicable, mark (X) | Percentage (%) Contribution to Overall Grade |
|---------------------|-----------------|-------------------------|----------------------------------------------|
|                     | Midterm Exam    | X                       | 40%                                          |
|                     | Final Exam      |                         |                                              |
|                     | Oral Exam       |                         |                                              |
|                     | Final Exam      | X                       | 60%                                          |

**Course Weekly Schedule**

| Week | Topics                                                                        |
|------|-------------------------------------------------------------------------------|
| 1    | Introduction – Concepts of Plant Nutrition and Fertilization                  |
| 2    | Importance of Plant Nutrition                                                 |
| 3    | Macro and Micro Plant Nutrient Elements                                       |
| 4    | Organic Fertilizers in Plant Nutrition                                        |
| 5    | Importance of Compost and Vermicompost in Plant Nutrition                     |
| 6    | Chemical Fertilizers in Plant Nutrition – Fertilizer Requirement Calculations |
| 7    | Examination of Fertilizer Samples Used in Plant Nutrition                     |
| 8    | Midterm Exam                                                                  |
| 9    | Nitrogen Fertilizers                                                          |
| 10   | Phosphorus Fertilizers                                                        |
| 11   | Potassium Fertilizers                                                         |
| 12   | Sulfur-Containing Fertilizers                                                 |

|           |                                      |
|-----------|--------------------------------------|
| <b>13</b> | Micronutrient-Containing Fertilizers |
| <b>14</b> | <b>Final Exam</b>                    |

**DESCRIPTION FORM OF COURSE**

|                                            |        |                                                                                                                                                                                                                                                    |       |                                               |                                                                                                                                                                                      |                    |                                 |
|--------------------------------------------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-----------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|---------------------------------|
| Course Code and Name: TTO 315 Seminar      |        |                                                                                                                                                                                                                                                    |       | Program: <u>Organic Agriculture Programme</u> |                                                                                                                                                                                      |                    |                                 |
| Semester                                   | Theory | Prac.                                                                                                                                                                                                                                              | Total | Credits                                       | ECTS                                                                                                                                                                                 | Language of Course | Course Type Compulsory/Elective |
| Fall Semester                              | 2      | 0                                                                                                                                                                                                                                                  | 2     | 2                                             | 2                                                                                                                                                                                    | Turkish            | Compulsory                      |
| Prerequisites of Course                    |        | There are no prerequisites.                                                                                                                                                                                                                        |       |                                               |                                                                                                                                                                                      |                    |                                 |
| Course Instructor                          |        | Prof. Dr. Rahmi AYDIN                                                                                                                                                                                                                              |       |                                               | Mail : raydin@munzur.edu.tr<br>Web : <a href="https://scholar.google.com/citations?hl=tr&amp;user=RIVWw4MAAAAJ">https://scholar.google.com/citations?hl=tr&amp;user=RIVWw4MAAAAJ</a> |                    |                                 |
| Aims of Course                             |        | The Seminar Course is conducted to develop the student's ability to explain a selected topic and speak in front of a crowd                                                                                                                         |       |                                               |                                                                                                                                                                                      |                    |                                 |
| Course Learning Outcomes and Competencies  |        | Develop knowledge related to his/her own research topic<br>Apply necessary research and writing skills<br>Follow principles of research ethics and plagiarism<br>Evaluate his/her own work adequately<br>Present his/her own research topic orally |       |                                               |                                                                                                                                                                                      |                    |                                 |
| Textbooks and /or Other Required Materials |        | Seminar writing rules lecture notes                                                                                                                                                                                                                |       |                                               |                                                                                                                                                                                      |                    |                                 |
| Method of delivery of the course           |        | Face to face                                                                                                                                                                                                                                       |       |                                               |                                                                                                                                                                                      |                    |                                 |
| Teaching Methods and Techniques            |        | Seminar preparation                                                                                                                                                                                                                                |       |                                               |                                                                                                                                                                                      |                    |                                 |

|  |                        | <b>If yes, please mark (X)</b> | <b>Percentage (%) Contribution to the Overall Average</b> |
|--|------------------------|--------------------------------|-----------------------------------------------------------|
|  | <b>1. Midterm Exam</b> | X                              | <b>40</b>                                                 |

|                            |                                           |   |           |
|----------------------------|-------------------------------------------|---|-----------|
| <b>Evaluation Criteria</b> | <b>2. Midterm Exam</b>                    |   |           |
|                            | <b>3. Midterm Exam</b>                    |   |           |
|                            | <b>Oral Exam</b>                          |   |           |
|                            | <b>Practical Exam (Lab, Project etc.)</b> |   |           |
|                            | <b>Semester Final Exam</b>                | X | <b>60</b> |

| <b>Semester Course Plan</b> |                                                                       |
|-----------------------------|-----------------------------------------------------------------------|
| <b>Week</b>                 | <b>Syllabus</b>                                                       |
| <b>1</b>                    | Determining a seminar topic                                           |
| <b>2</b>                    | Importance of seminar course                                          |
| <b>3</b>                    | What to consider when writing a seminar                               |
| <b>4</b>                    | How to cite sources in seminars                                       |
| <b>5</b>                    | How to cite a source taken from the internet                          |
| <b>6</b>                    | What is plagiarism                                                    |
| <b>7</b>                    | Choosing a seminar topic                                              |
| <b>8</b>                    | Writing the seminar                                                   |
| <b>9</b>                    | Checking whether the written seminars are done according to the rules |
| <b>10</b>                   | Checking the spelling rules of the seminars                           |
| <b>11</b>                   | Checking the spelling rules of the seminars                           |
| <b>12</b>                   | Finishing the seminar                                                 |
| <b>13</b>                   | Receiving the seminar electronically                                  |
| <b>14</b>                   | Examining and evaluating the seminars                                 |
| <b>15</b>                   | General Exam                                                          |

**DESCRIPTION FORM OF COURSE**

| <b>Course Code and Name: TRD101 Turkish Language-I</b> |               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |              | <b>Program: Organic Agriculture</b> |             |                           |                                        |
|--------------------------------------------------------|---------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|-------------------------------------|-------------|---------------------------|----------------------------------------|
| <b>Semester</b>                                        | <b>Theory</b> | <b>Prac.</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | <b>Total</b> | <b>Credits</b>                      | <b>ECTS</b> | <b>Language of Course</b> | <b>Course Type Compulsory/Elective</b> |
| Fall Semester                                          | 2             | 0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 2            | 2                                   | 2           | Türkisch                  | Compulsory                             |
| <b>Prerequisites of Course</b>                         |               | There are no prerequisites.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |              |                                     |             |                           |                                        |
| <b>Course Instructor</b>                               |               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |              |                                     |             |                           |                                        |
| <b>Aims of Course</b>                                  |               | It aims to show students the characteristics and rules of the Turkish Language with examples; to provide them with the skills and habits of expressing their feelings, thoughts, plans, impressions, observations, and experiences correctly and effectively in words and writing; to develop their vocabulary through written and spoken texts; to teach them the rules of correctly understanding the texts they read or the programs they listen to; and to develop their language skills, which are the basis of communication between individuals and masses.                                                                                                                                                                                                                                                                                                                        |              |                                     |             |                           |                                        |
| <b>Course Learning Outcomes and Competencies</b>       |               | 1. Will be able to have general information about the concept of language.<br>1.1. Definition and birth of language; culture, thought and communication.<br>1.2. Understands the differences between written language and spoken language.<br>2. Will be able to gain correct and planned writing skills.<br>2.1. Learns the details of paper layout and paragraph information.<br>2.2. Gains competence in written communication by doing writing studies.<br>3. Will be able to have information about spelling rules and punctuation marks.<br>3.1. Uses punctuation marks correctly in the text.<br>3.2. Eliminates ambiguity in written communication by learning the details of spelling rules.<br>4. Will be able to have general information about the rules of petition.<br>4.1. Learns how to write a petition correctly.<br>4.2. Applies the rules in official correspondence. |              |                                     |             |                           |                                        |
| <b>Textbooks and /or Other Required Materials</b>      |               | Images/visuals, slides, videos and lecture notes on the course content.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |              |                                     |             |                           |                                        |
| <b>Method of delivery of the course</b>                |               | Face to face / Online                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |              |                                     |             |                           |                                        |
| <b>Teaching Methods and Techniques</b>                 |               | Explanation, Question-Answer, Discussion, Brainstorming, Individual Work, Team/Group Work                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |              |                                     |             |                           |                                        |

|  |                        | <b>If yes, please mark (X)</b> | <b>Percentage (%) Contribution to the Overall Average</b> |
|--|------------------------|--------------------------------|-----------------------------------------------------------|
|  | <b>1. Midterm Exam</b> | X                              | <b>40</b>                                                 |

|                            |                                           |   |    |
|----------------------------|-------------------------------------------|---|----|
| <b>Evaluation Criteria</b> | <b>2. Midterm Exam</b>                    |   |    |
|                            | <b>3. Midterm Exam</b>                    |   |    |
|                            | <b>Oral Exam</b>                          |   |    |
|                            | <b>Practical Exam (Lab, Project etc.)</b> |   |    |
|                            | <b>Semester Final Exam</b>                | X | 60 |

| <b>Semester Course Plan</b> |                                        |
|-----------------------------|----------------------------------------|
| <b>Week</b>                 | <b>Syllabus</b>                        |
| <b>1</b>                    | Definition and Function of Language    |
| <b>2</b>                    | Languages/Birth of Language            |
| <b>3</b>                    | Written Language and Spoken Language   |
| <b>4</b>                    | Paper Layout and Paragraph Information |
| <b>5</b>                    | Paragraph Plan                         |
| <b>6</b>                    | Writing and Writing Plan               |
| <b>7</b>                    | Writing Practices                      |
| <b>8</b>                    | Midterm                                |
| <b>9</b>                    | Writing Rules                          |
| <b>10</b>                   | Writing Rules                          |
| <b>11</b>                   | Punctuation Marks                      |
| <b>12</b>                   | Punctuation Marks                      |
| <b>13</b>                   | Petition                               |
| <b>14</b>                   | Writing Studies                        |
| <b>15</b>                   | Final exam                             |



**DESCRIPTION FORM OF COURSE**

| <b>Course Code and Name: TRD102 Turkish Language-II</b> |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |       | <b>Program: Organic Agriculture</b> |      |                    |                                 |
|---------------------------------------------------------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-------------------------------------|------|--------------------|---------------------------------|
| Semester                                                | Theory | Prac.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Total | Credits                             | ECTS | Language of Course | Course Type Compulsory/Elective |
| Spring                                                  | 2      | 0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 2     | 2                                   | 2    | Turkish            | Compulsory                      |
| <b>Prerequisites of Course</b>                          |        | There are no prerequisites.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |       |                                     |      |                    |                                 |
| <b>Course Instructor</b>                                |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |       |                                     |      |                    |                                 |
| <b>Aims of Course</b>                                   |        | To teach and/or remind the importance and subtleties of Turkish and to reinforce this with correct Turkish and its resources. In addition, to ensure that students use Turkish more consciously in daily conversations and correspondence throughout the course.                                                                                                                                                                                                                                                                                                                                                                                                                                                          |       |                                     |      |                    |                                 |
| <b>Course Learning Outcomes and Competencies</b>        |        | 1. Will be able to learn information for correct and proper expression.<br>1.1. Knows the importance of written expression and writes compositions.<br>1.2. Knows the rules of communication in oral expression.<br>2. Will be able to comprehend Turkish grammar.<br>2.1. Knows and applies sound events.<br>2.2. Understands morphology (root-stem-suffixes).<br>3. Will be able to analyze words in terms of their structure.<br>3.1. Develops and changes words.<br>3.2. Derives new words.<br>4. Uses the principles and techniques of speaking and discussion.<br>4.1. Applies Turkish spelling rules in speaking and discussion.<br>4.2. Can notice and correct expression errors in oral and written expressions. |       |                                     |      |                    |                                 |
| <b>Textbooks and /or Other Required Materials</b>       |        | Zeynep Korkmaz ve ark., Türk Dili ve Kompozisyon Bilgileri, 6. Baskı, Ankara: Yargı Yayınevi, 2003.<br>Yusuf Çotuksöken, Türk Dili, c. I-II, Papatya yay., 2003.<br>Akın Önen, Türkçeyi Türkçe Konuşmak (Diksiyon - Spikerlik - Etkili Konuşma), İnkılap Yayınevi, İstanbul, 2007.<br>Mustafa Durmuş, Türk Dili El Kitabı, Grafiker Yay., 2009.<br>Muharrem Ergin, Türk Dil Bilgisi, Bayrak Basım Yayın Tanıtım, İstanbul, İbrahim Delice, Türkçe Sözdizimi, Kitabevi Yay., 2007.                                                                                                                                                                                                                                         |       |                                     |      |                    |                                 |
| <b>Method of delivery of the course</b>                 |        | Face to face / Online                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |       |                                     |      |                    |                                 |
| <b>Teaching Methods and Techniques</b>                  |        | Explanation, Question-Answer, Discussion, Brainstorming, Individual Work, Team/Group Work                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |       |                                     |      |                    |                                 |

|  |                        | <b>If yes, please mark (X)</b> | <b>Percentage (%) Contribution to the Overall Average</b> |
|--|------------------------|--------------------------------|-----------------------------------------------------------|
|  | <b>1. Midterm Exam</b> | X                              | 40                                                        |

|                            |                                           |   |           |
|----------------------------|-------------------------------------------|---|-----------|
| <b>Evaluation Criteria</b> | <b>2. Midterm Exam</b>                    |   |           |
|                            | <b>3. Midterm Exam</b>                    |   |           |
|                            | <b>Oral Exam</b>                          |   |           |
|                            | <b>Practical Exam (Lab, Project etc.)</b> |   |           |
|                            | <b>Semester Final Exam</b>                | X | <b>60</b> |

| <b>Semester Course Plan</b> |                                                                                                 |
|-----------------------------|-------------------------------------------------------------------------------------------------|
| <b>Week</b>                 | <b>Syllabus</b>                                                                                 |
| <b>1</b>                    | Punctuation marks (Period, comma, semicolon, colon, exclamation point ...)                      |
| <b>2</b>                    | Spelling rules (Writing of capital letters, numbers, compound words)                            |
| <b>3</b>                    | Spelling rules (Writing of idioms, reduplications, loanwords and foreign proper names)          |
| <b>4</b>                    | Spelling rules (Writing of abbreviations and some suffixes)                                     |
| <b>5</b>                    | Composition (definition, purpose, methods of being successful in composition)                   |
| <b>6</b>                    | Methods in writing composition (formation of supporting and main ideas, planning)               |
| <b>7</b>                    | Methods in writing composition (paragraph creation, methods of developing thought in paragraph) |
| <b>8</b>                    | Midterm Exam                                                                                    |
| <b>9</b>                    | Expression characteristics                                                                      |
| <b>10</b>                   | Expression characteristics                                                                      |
| <b>11</b>                   | Expression disorders                                                                            |
| <b>12</b>                   | Types of expression (oral expression)                                                           |
| <b>13</b>                   | Types of expression (written expression: resume, petition...)                                   |
| <b>14</b>                   | Types of expression (written expression: story, novel, theater, poetry...)                      |
| <b>15</b>                   | Final exam                                                                                      |

**DESCRIPTION FORM OF COURSE**

| <b>Course Code and Name: YDİ 131.1. İNGİLİZCE -I</b> |               |                                                                                                                                                                                                                                                                                                          |              | <b>Program: Organic Agriculture Program</b> |             |                           |                                        |
|------------------------------------------------------|---------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|---------------------------------------------|-------------|---------------------------|----------------------------------------|
| <b>Semester</b>                                      | <b>Theory</b> | <b>Prac.</b>                                                                                                                                                                                                                                                                                             | <b>Total</b> | <b>Credits</b>                              | <b>ECTS</b> | <b>Language of Course</b> | <b>Course Type Compulsory/Elective</b> |
| Fall Semester                                        | 2             | 0                                                                                                                                                                                                                                                                                                        | 2            | 2                                           | 2           | Turkish                   | Compulsory                             |
| <b>Prerequisites of Course</b>                       |               | There are no prerequisites.                                                                                                                                                                                                                                                                              |              |                                             |             |                           |                                        |
| <b>Course Instructor</b>                             |               |                                                                                                                                                                                                                                                                                                          |              |                                             |             |                           |                                        |
| <b>Aims of Course</b>                                |               | It aims to provide students with information about English grammar and vocabulary and to enable them to use these in daily life.                                                                                                                                                                         |              |                                             |             |                           |                                        |
| <b>Course Learning Outcomes and Competencies</b>     |               | 1. Will be able to learn the tenses used in English.<br>2. Will be able to make dialogues in English and use the tenses he/she learned.<br>3. Will be able to read English texts.<br>3.1. Reads and comments on English stories.<br>3.2. Reads English newspaper articles. Translates them into Turkish. |              |                                             |             |                           |                                        |
| <b>Textbooks and /or Other Required Materials</b>    |               | Images/visuals, slides, videos and lecture notes on the course content.                                                                                                                                                                                                                                  |              |                                             |             |                           |                                        |
| <b>Method of delivery of the course</b>              |               | Online                                                                                                                                                                                                                                                                                                   |              |                                             |             |                           |                                        |
| <b>Teaching Methods and Techniques</b>               |               | Explanation, Question-Answer                                                                                                                                                                                                                                                                             |              |                                             |             |                           |                                        |

| <b>Evaluation Criteria</b> |                                           | <b>If yes, please mark (X)</b> | <b>Percentage (%) Contribution to the Overall Average</b> |
|----------------------------|-------------------------------------------|--------------------------------|-----------------------------------------------------------|
|                            | <b>1. Midterm Exam</b>                    | X                              | 40                                                        |
|                            | <b>2. Midterm Exam</b>                    |                                |                                                           |
|                            | <b>3. Midterm Exam</b>                    |                                |                                                           |
|                            | <b>Oral Exam</b>                          |                                |                                                           |
|                            | <b>Practical Exam (Lab, Project etc.)</b> |                                |                                                           |

|  |                            |          |           |
|--|----------------------------|----------|-----------|
|  | <b>Semester Final Exam</b> | <b>X</b> | <b>60</b> |
|--|----------------------------|----------|-----------|

| <b>Semester Course Plan</b> |                                                                                    |
|-----------------------------|------------------------------------------------------------------------------------|
| <b>Week</b>                 | <b>Syllabus</b>                                                                    |
| <b>1</b>                    | Present Form of 'to be'                                                            |
| <b>2</b>                    | Subject Pronouns, Countries and Nationalities                                      |
| <b>3</b>                    | Family Members, Possesive Adjectives                                               |
| <b>4</b>                    | Possesive Case, Have got/Has got, Adjectives                                       |
| <b>5</b>                    | Singular&Plural Nouns& a/an, This/That/These/Those, Countable&Uncountable Nouns    |
| <b>6</b>                    | Some&Any&How much&How many                                                         |
| <b>7</b>                    | Revision                                                                           |
| <b>8</b>                    | Midterm Exam                                                                       |
| <b>9</b>                    | Parts of the House&Furniture, There is/There are, Prepositions of Place, Can/Can't |
| <b>10</b>                   | Telling the Time, Days& Months, Prepositions of Time                               |
| <b>11</b>                   | The Simple Present Tense                                                           |
| <b>12</b>                   | Adverbs of Frequency, Object Pronouns                                              |
| <b>13</b>                   | Reading, analyzing, interpreting, and evaluating English texts                     |
| <b>14</b>                   | General Revision                                                                   |
| <b>15</b>                   | Final exam                                                                         |

**DESCRIPTION FORM OF COURSE**

| <b>Course Code and Name: YDİ 132.1. İNGİLİZCE II</b> |               |                                                                                                                                                                                                                                                                                                          |              | <b>Program: Organic Agriculture Program</b> |             |                           |                                        |
|------------------------------------------------------|---------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|---------------------------------------------|-------------|---------------------------|----------------------------------------|
| <b>Semester</b>                                      | <b>Theory</b> | <b>Prac.</b>                                                                                                                                                                                                                                                                                             | <b>Total</b> | <b>Credits</b>                              | <b>ECTS</b> | <b>Language of Course</b> | <b>Course Type Compulsory/Elective</b> |
| Spring Semester                                      | 2             | 0                                                                                                                                                                                                                                                                                                        | 2            | 2                                           | 2           | Turkish                   | Compulsory                             |
| <b>Prerequisites of Course</b>                       |               | There are no prerequisites.                                                                                                                                                                                                                                                                              |              |                                             |             |                           |                                        |
| <b>Course Instructor</b>                             |               |                                                                                                                                                                                                                                                                                                          |              |                                             |             |                           |                                        |
| <b>Aims of Course</b>                                |               | It aims to provide students with information about English grammar and vocabulary and to enable them to use these in daily life.                                                                                                                                                                         |              |                                             |             |                           |                                        |
| <b>Course Learning Outcomes and Competencies</b>     |               | 1. Will be able to learn the tenses used in English.<br>2. Will be able to make dialogues in English and use the tenses he/she learned.<br>3. Will be able to read English texts.<br>3.1. Reads and comments on English stories.<br>3.2. Reads English newspaper articles. Translates them into Turkish. |              |                                             |             |                           |                                        |
| <b>Textbooks and /or Other Required Materials</b>    |               | Images/visuals, slides, videos and lecture notes on the course content.                                                                                                                                                                                                                                  |              |                                             |             |                           |                                        |
| <b>Method of delivery of the course</b>              |               | Online                                                                                                                                                                                                                                                                                                   |              |                                             |             |                           |                                        |
| <b>Teaching Methods and Techniques</b>               |               | Explanation, Question-Answer                                                                                                                                                                                                                                                                             |              |                                             |             |                           |                                        |

| <b>Evaluation Criteria</b> |                                           | <b>If yes, please mark (X)</b> | <b>Percentage (%) Contribution to the Overall Average</b> |
|----------------------------|-------------------------------------------|--------------------------------|-----------------------------------------------------------|
|                            | <b>1. Midterm Exam</b>                    | X                              | 40                                                        |
|                            | <b>2. Midterm Exam</b>                    |                                |                                                           |
|                            | <b>3. Midterm Exam</b>                    |                                |                                                           |
|                            | <b>Oral Exam</b>                          |                                |                                                           |
|                            | <b>Practical Exam (Lab, Project etc.)</b> |                                |                                                           |

|  |                            |          |           |
|--|----------------------------|----------|-----------|
|  | <b>Semester Final Exam</b> | <b>X</b> | <b>60</b> |
|--|----------------------------|----------|-----------|

| <b>Semester Course Plan</b> |                                                    |
|-----------------------------|----------------------------------------------------|
| <b>Week</b>                 | <b>Syllabus</b>                                    |
| <b>1</b>                    | The Present Continuous Tense                       |
| <b>2</b>                    | Weather&Season&Clothes                             |
| <b>3</b>                    | The Present Simple or The Present Continuous Tense |
| <b>4</b>                    | Past Form of ‘To be’                               |
| <b>5</b>                    | The Past Simple Tense with Regular Verbs           |
| <b>6</b>                    | The Past Simple Tense with Irregular Verbs         |
| <b>7</b>                    | Revision                                           |
| <b>8</b>                    | Midterm Exam                                       |
| <b>9</b>                    | The Past Continuous Tense                          |
| <b>10</b>                   | Comparative Forms of Adjectives                    |
| <b>11</b>                   | Superlative Forms of Adjectives                    |
| <b>12</b>                   | Giving Advice (Should/Shouldn’t)                   |
| <b>13</b>                   | The Future Tense (be going to)                     |
| <b>14</b>                   | The Future Tense (will)                            |
| <b>15</b>                   | Final Exam                                         |