

# GENETICS

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|------|---|---|--|
| 1    | Course Title:   | GENETICS  |  |
| 2    | Course Code:  | ZOO2402   |  |
| 3    | Type of Course:   | Compulsory  |  |
| 4    | Level of Course:  | First Cycle   |  |
| 5    | Year of Study:  | 2   |  |
| 6    | Semester:   | 4   |  |
| 7    | ECTS Credits Allocated:                                       | 4.00  |  |
| 8    | Theoretical (hour/week):                                      | 3.00  |  |
| 9    | Practice (hour/week):   | 0.00  |  |
| 10   | Laboratory (hour/week):                                       | 0   |  |
| 11   | Prerequisites:  | NONE  |  |
| 12   | Language:   | Turkish   |  |
| 13   | Mode of Delivery:   | Face to face  |  |
| 14   | Course Coordinator:   | Prof. Dr. CENGİZ ELMACI   |  |
| 15   | Course Lecturers:   | Prof. Dr. Cengiz ELMACI   |  |
| 16   | Contact information of the Course Coordinator:                | elmaci@uludag.edu.tr, 224 2941554<br>U.Ü. Ziraat Fakültesi Zootekni Bölümü, Bursa |  |
| 17   | Website:  |   |  |
| 18   | Objective of the Course:                                      | Learn principal topics and basic concepts of genetics and heredity.               |  |
| 19   | Contribution of the Course to Professional Development:       |   |  |
| 20   | Learning Outcomes:  |   |  |
|      |   | 1   | Learns basic concepts of Genetics  |
|      |   | 2   | Knows genetic material and its function in heredity.   |
|      |   | 3   | Understands relationship between heredity model of different traits and breeding programmes. |
|      |   | 4   | Learns sources and mechanisms of genetic diversity.  |
|      |   | 5   | Comprehends importance and role of genetics in Agricultural sciences.                        |
|      |   | 6   | Learns basic essential knowledge for genetic engineering and biotechnology.                  |
|      |   | 7   |  |
|      |   | 8   |  |
|      |   | 9   |  |
|      |   | 10  |  |
| 21   | Course Content:   |   |  |
|      |   | <b>Course Content:</b>  |  |
| Week | Theoretical   | Practice  |  |
| 1    | Introduction to genetics, brief history of the genetics       |   |  |
| 2    | Cells, prokaryotic and eukaryotic organisms, chromosomes      |   |  |
| 3    | Genetics events   |   |  |
| 4    | Mendelian genetics and its basic principles, solving problems |   |  |

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| 5  | Linkage, crossing-over, solving problems                               |   |
| 6  | Sex and sex determination systems, sex linked traits, solving problems |   |
| 7  | Gen interactions, solving problems                                     |   |
| 8  | Quantitative traits and genetics                                       |   |
| 9  | Population genetics, Hardy-Weinberg equilibrium, solving problem       |   |
| 10   | Gene concept, What is gene?  |   |
| 11   | DNA: Chemical nature of gene   |   |
| 12   | DNA replication, transcription, Genetic code and translation           |   |
| 13   | Mutation, Gene(Point) mutation   |   |
| 14   | Variations in chromosome structure and numbers                         |   |
| 22   | Textbooks, References and/or Other Materials:                          | <p>Soysal, M.İ. 2006. Genetik, Tekirdağ Ziraat Fakültesi Yayınları, Tekirdağ.</p> <p>Yüce, S., Bilgen, G., Demir, İ. 2010. Genetik, Nobel Yayın Dağıtım, Ankara</p> <p>Öner, C. 2001. Genetik, Kavramlar, Palme Yayıncılık</p> <p>Pierce, B.A., 2003. Genetics: A Conceptual Approaches., ISBN: 1-57259-160-9</p> |
| 23   | Assesment  |   |
| <b>TERM LEARNING ACTIVITIES</b>                                  |  | <b>NUMBER</b>   |
| Midterm Exam   |  | 1   |
| Quiz   |  | 0   |
| Home work-project  |  | 0   |
| Final Exam   |  | 1   |
| Total  |  | 2   |
| Contribution of Term (Year) Learning Activities to Success Grade |  | 40.00   |
| Contribution of Final Exam to Success Grade                      |  | 60.00   |
| Total  |  | 100.00  |
| Measurement and Evaluation Techniques Used in the Course         |  |   |
| 24   | <b>ECTS / WORK LOAD TABLE</b>  |   |

| Activites                  | Number | Duration (hour) | Total Work Load (hour) |
|----------------------------|--------|-----------------|------------------------|
| Theoretical                | 14     | 3.00            | 42.00                  |
| Practicals/Labs            | 0      | 0.00            | 0.00                   |
| Self study and preperation | 14     | 2.00            | 28.00                  |
| Homeworks                  | 0      | 0.00            | 0.00                   |
| Projects                   | 0      | 0.00            | 0.00                   |
| Field Studies              | 0      | 0.00            | 0.00                   |
| Midterm exams              | 1      | 12.00           | 12.00                  |
| Others                     | 10     | 2.00            | 20.00                  |
| Final Exams                | 1      | 18.00           | 18.00                  |
| Total Work Load            |        |                 | 120.00                 |
| Total work load/ 30 hr     |        |                 | 4.00                   |
| ECTS Credit of the Course  |        |                 | 4.00                   |

| 25  | CONTRIBUTION OF LEARNING OUTCOMES TO PROGRAMME QUALIFICATIONS |     |       |     |          |     |        |     |             |      |      |      |      |      |      |      |
|---|---|-----|-------|-----|----------|-----|--------|-----|-------------|------|------|------|------|------|------|------|
|   | PQ1   | PQ2 | PQ3   | PQ4 | PQ5      | PQ6 | PQ7    | PQ8 | PQ9         | PQ10 | PQ11 | PQ12 | PQ13 | PQ14 | PQ15 | PQ16 |
| ÖK1   | 0   | 0   | 0     | 0   | 0        | 3   | 0      | 0   | 3           | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| ÖK2   | 0   | 0   | 0     | 0   | 0        | 4   | 0      | 0   | 4           | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| ÖK3   | 0   | 0   | 0     | 0   | 0        | 4   | 0      | 0   | 4           | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| ÖK4   | 0   | 0   | 0     | 0   | 0        | 0   | 0      | 0   | 0           | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| ÖK5   | 0   | 0   | 0     | 0   | 0        | 0   | 0      | 0   | 4           | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| ÖK6   | 0   | 0   | 0     | 0   | 0        | 0   | 0      | 0   | 0           | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| LO: Learning Objectives    PQ: Program Qualifications |   |     |       |     |          |     |        |     |             |      |      |      |      |      |      |      |
| Contribution Level:                                   | 1 very low  |     | 2 low |     | 3 Medium |     | 4 High |     | 5 Very High |      |      |      |      |      |      |      |