

**UNIVERSITY "ECONOMICS ACADEMY" BRCKO DISTRICT OF BOSNIA AND HERZEGOVINA**  
**FACULTY OF TECHNICAL SCIENCES**  
**FIRST CYCLE - UNDERGRADUATE ACADEMIC STUDIES**  
**Bachelor of Science in Chemical Engineering and Technology – 240 ECTS**

**CURRICULUM**

| CURRICULUM                                                      |      |                                                  |      |   |        |                   |     |        |      |
|-----------------------------------------------------------------|------|--------------------------------------------------|------|---|--------|-------------------|-----|--------|------|
| No.                                                             | Code | Course Title                                     | Sem. | T | Status | Hours of Teaching |     | Active | ECTS |
|                                                                 |      |                                                  |      |   |        | L                 | P   | C      |      |
| FIRST YEAR                                                      |      |                                                  |      |   |        |                   |     |        |      |
| 1.                                                              | Z01  | Informatics                                      | 1    |   | M      | 2                 | 2   | 5      | 5    |
| 2.                                                              | Z02  | Management                                       | 1    |   | M      | 2                 | 2   | 5      | 5    |
| 3.                                                              | Z03  | Business English 1                               | 1    |   | M      | 2                 | 1   | 5      | 5    |
| 4.                                                              | Z04  | Business Ethics                                  | 1    |   | M      | 2                 | 1   | 5      | 5    |
| 5.                                                              | Z05  | Elective 1                                       | 1    |   | E      | 2                 | 2   | 5      | 5    |
|                                                                 |      | Machinery in Plant Protection                    |      |   |        |                   |     |        |      |
|                                                                 |      | Zoology                                          |      |   |        |                   |     |        |      |
|                                                                 |      | Introduction to Food Technologies                |      |   |        |                   |     |        |      |
|                                                                 |      | Introduction to Technologies and Materials       |      |   |        |                   |     |        |      |
|                                                                 |      | Systems Biology                                  |      |   |        |                   |     |        |      |
| 5.                                                              | Z06  | Elective 2                                       | 1    |   | E      | 2                 | 2   | 5      | 5    |
|                                                                 |      | Special Entomology                               |      |   |        |                   |     |        |      |
|                                                                 |      | Botany                                           |      |   |        |                   |     |        |      |
|                                                                 |      | Organic Food Production and Processing           |      |   |        |                   |     |        |      |
|                                                                 |      | Formulation Engineering                          |      |   |        |                   |     |        |      |
|                                                                 |      | Principles of Molecular and Phonotypic Evolution |      |   |        |                   |     |        |      |
| Total:                                                          |      |                                                  |      |   |        | 12                | 10  |        | 30   |
| 6.                                                              | Z07  | Introduction to Economics                        | 2    |   | M      | 2                 | 2   | 5      | 5    |
| 7.                                                              | Z08  | Business Law                                     | 2    |   | M      | 2                 | 2   | 5      | 5    |
| 8.                                                              | Z09  | Business English 2                               | 2    |   | M      | 2                 | 1   | 5      | 5    |
| 9.                                                              | Z10  | E-Business                                       | 2    |   | M      | 2                 | 1   | 5      | 5    |
| 10.                                                             | Z11  | Elective 3                                       | 2    |   | E      | 2                 | 2   | 5      | 5    |
|                                                                 |      | Pseudomycoses and Mycoses of Plants              |      |   |        |                   |     |        |      |
|                                                                 |      | Seed Production and Nursery production           |      |   |        |                   |     |        |      |
|                                                                 |      | Hydromechanical Operations                       |      |   |        |                   |     |        |      |
|                                                                 |      | Introduction to Chemical Engineering             |      |   |        |                   |     |        |      |
|                                                                 |      | Morphology and Anatomy of Invertebrates          |      |   |        |                   |     |        |      |
| 10.                                                             | Z12  | Elective 4                                       | 2    |   | E      | 2                 | 2   | 5      | 5    |
|                                                                 |      | Fundamentals of Pesticide Analysis               |      |   |        |                   |     |        |      |
|                                                                 |      | Physiology of Domestic Animals                   |      |   |        |                   |     |        |      |
|                                                                 |      | Food Legislation                                 |      |   |        |                   |     |        |      |
|                                                                 |      | Material and Energy                              |      |   |        |                   |     |        |      |
|                                                                 |      | Anatomy and Morphology of Plants                 |      |   |        |                   |     |        |      |
| Total:                                                          |      |                                                  |      |   |        | 12                | 10  |        | 30   |
| Total Hours in the First Year of Undergraduate Academic Studies |      |                                                  |      |   |        | 360               | 300 |        | 60   |
| SECOND YEAR                                                     |      |                                                  |      |   |        |                   |     |        |      |
| 1.                                                              | Z13  | Environmental Management                         | 3    |   | M      | 2                 | 2   | 5      | 5    |
| 2.                                                              | Z14  | General Chemistry                                | 3    |   | M      | 2                 | 2   | 5      | 5    |
| 3.                                                              | Z15  | Fundamentals of Cell and Tissue Biology          | 3    |   | M      | 2                 | 1   | 5      | 5    |
| 4.                                                              | Z16  | Biostatistics                                    | 3    |   | M      | 2                 | 1   | 5      | 5    |
| 5.                                                              | Z17  | Elective 5                                       | 3    |   | E      | 2                 | 2   | 5      | 5    |

|                                                                  |     |                                                  |   |  |   |     |     |   |    |
|------------------------------------------------------------------|-----|--------------------------------------------------|---|--|---|-----|-----|---|----|
|                                                                  |     | Phytonematology                                  |   |  |   |     |     |   |    |
|                                                                  |     | General Agriculture                              |   |  |   |     |     |   |    |
|                                                                  |     | Fruit and Vegetable Technology                   |   |  |   |     |     |   |    |
|                                                                  |     | Process and Environmental Engineering            |   |  |   |     |     |   |    |
|                                                                  |     | Molecular Biology                                |   |  |   |     |     |   |    |
| 10.                                                              | Z18 | <i>Elective 6</i>                                | 2 |  | E | 2   | 2   | 5 | 5  |
|                                                                  |     | Plant Protection Technology                      |   |  |   |     |     |   |    |
|                                                                  |     | General Animal Husbandry                         |   |  |   |     |     |   |    |
|                                                                  |     | Quality Control in Technologies of Animal Origin |   |  |   |     |     |   |    |
|                                                                  |     | Catalysis and Catalysts                          |   |  |   |     |     |   |    |
|                                                                  |     | Anatomy and Morphology of Chordates              |   |  |   |     |     |   |    |
| Total:                                                           |     |                                                  |   |  |   | 12  | 10  |   | 30 |
| 6.                                                               | Z19 | Organic Chemistry                                | 4 |  | M | 2   | 2   | 5 | 5  |
| 7.                                                               | Z20 | General Physiology                               | 4 |  | M | 2   | 2   | 5 | 5  |
| 8.                                                               | Z21 | Environmental Physics                            | 4 |  | M | 2   | 1   | 5 | 5  |
| 9.                                                               | Z22 | Environmental Applications of GIS                | 4 |  | M | 2   | 1   | 5 | 5  |
| 10.                                                              | Z23 | <i>Elective 7</i>                                | 4 |  | E | 2   | 2   | 5 | 5  |
|                                                                  |     | Diseases of Planting Material                    |   |  |   |     |     |   |    |
|                                                                  |     | General Fruit Growing                            |   |  |   |     |     |   |    |
|                                                                  |     | Meat and Fish Technology                         |   |  |   |     |     |   |    |
|                                                                  |     | Inorganic Technology                             |   |  |   |     |     |   |    |
|                                                                  |     | Basics of Biology and Ecology                    |   |  |   |     |     |   |    |
| 10.                                                              | Z14 | <i>Elective 8</i>                                | 2 |  | E | 2   | 2   | 5 | 5  |
|                                                                  |     | Diagnosis of Plant Diseases                      |   |  |   |     |     |   |    |
|                                                                  |     | Special Fruit Growing                            |   |  |   |     |     |   |    |
|                                                                  |     | Technology of Milk and Dairy Products            |   |  |   |     |     |   |    |
|                                                                  |     | Electrochemical Engineering                      |   |  |   |     |     |   |    |
|                                                                  |     | Biogeography                                     |   |  |   |     |     |   |    |
| Total:                                                           |     |                                                  |   |  |   | 12  | 10  |   | 30 |
| Total Hours in the Second Year of Undergraduate Academic Studies |     |                                                  |   |  |   | 360 | 300 |   | 60 |
| THIRD YEAR                                                       |     |                                                  |   |  |   |     |     |   |    |
| 1.                                                               | Z25 | Physiology and Ecophysiology of Animals          | 5 |  | M | 2   | 3   | 5 | 5  |
| 2.                                                               | Z26 | Phytocenology                                    | 5 |  | M | 2   | 3   | 5 | 5  |
| 3.                                                               | Z27 | Biochemistry                                     | 5 |  | M | 2   | 1   | 5 | 5  |
| 4.                                                               | Z28 | Introduction to Technology and Materials         | 5 |  | M | 2   | 2   | 5 | 5  |
| 5.                                                               | Z29 | <i>Elective 9</i>                                | 5 |  | E | 2   | 1   | 5 | 5  |
|                                                                  |     | Plant Protection Products                        |   |  |   |     |     |   |    |
|                                                                  |     | Special Vegetable Growing                        |   |  |   |     |     |   |    |
|                                                                  |     | Laboratory for Quality Control                   |   |  |   |     |     |   |    |
|                                                                  |     | Organic Technology                               |   |  |   |     |     |   |    |
|                                                                  |     | Pedobiology                                      |   |  |   |     |     |   |    |
| 10.                                                              | Z30 | <i>Elective 10</i>                               | 2 |  | E | 2   | 2   | 5 | 5  |
|                                                                  |     | Bacteriosis of Plants                            |   |  |   |     |     |   |    |
|                                                                  |     | Special Reproduction of Domestic Animals         |   |  |   |     |     |   |    |
|                                                                  |     | Quality Control of Packaging and Packaging       |   |  |   |     |     |   |    |
|                                                                  |     | Biofuels                                         |   |  |   |     |     |   |    |
|                                                                  |     | Hydroecology                                     |   |  |   |     |     |   |    |
| Total:                                                           |     |                                                  |   |  |   | 12  | 10  |   | 30 |
| 6.                                                               | Z31 | Formulation Engineering                          | 6 |  | M | 2   | 3   | 2 | 5  |
| 7.                                                               | Z32 | Numerical Methods in                             | 6 |  | M | 2   | 3   | 2 | 5  |

|                                                                 |     |                                                          |   |  |   |     |     |   |    |
|-----------------------------------------------------------------|-----|----------------------------------------------------------|---|--|---|-----|-----|---|----|
|                                                                 |     | Engineering                                              |   |  |   |     |     |   |    |
| 8.                                                              | Z33 | Organic Technology                                       | 6 |  | M | 2   | 1   | 2 | 5  |
| 9.                                                              | Z34 | Pedology                                                 | 6 |  | M | 2   | 2   | 2 | 5  |
| 10.                                                             | Z35 | <i>Elective 11</i>                                       | 6 |  | E | 2   | 1   | 5 | 5  |
|                                                                 |     | Fundamentals of Pesticide Selectivity and Phytotoxicity  |   |  |   |     |     |   |    |
|                                                                 |     | Nutrition of Ruminants and Non-ruminants                 |   |  |   |     |     |   |    |
|                                                                 |     | Quality Control and Technology of Confectionery Products |   |  |   |     |     |   |    |
|                                                                 |     | Green Engineering                                        |   |  |   |     |     |   |    |
|                                                                 |     | Algology                                                 |   |  |   |     |     |   |    |
| 10.                                                             | Z36 | <i>Elective 12</i>                                       | 2 |  | E | 2   | 2   | 5 | 5  |
|                                                                 |     | Weed Ecology                                             |   |  |   |     |     |   |    |
|                                                                 |     | Plant Breeding                                           |   |  |   |     |     |   |    |
|                                                                 |     | Food Toxicology                                          |   |  |   |     |     |   |    |
|                                                                 |     | Fundamentals of Safety in Chemical Plants                |   |  |   |     |     |   |    |
|                                                                 |     | Mycology                                                 |   |  |   |     |     |   |    |
| Total:                                                          |     |                                                          |   |  |   | 12  | 10  |   | 30 |
| Total Hours in the Third Year of Undergraduate Academic Studies |     |                                                          |   |  |   | 360 | 300 |   | 60 |
| <b>FOURTH YEAR</b>                                              |     |                                                          |   |  |   |     |     |   |    |
| 1.                                                              | Z37 | Genetics                                                 | 7 |  | M | 2   | 2   | 2 | 5  |
| 2.                                                              | Z38 | Instrumental Methods                                     | 7 |  | M | 2   | 1   | 2 | 5  |
| 3.                                                              | Z39 | Anatomy and Physiology of Domestic Animals               | 7 |  | M | 2   | 1   | 2 | 5  |
| 4.                                                              | Z40 | Professional Practice 1                                  | 7 |  | M | 2   | 4   | 5 | 5  |
| 5.                                                              | Z41 | <i>Elective 13</i>                                       | 7 |  | E | 2   | 2   | 5 | 5  |
|                                                                 |     | Plant Viruses                                            |   |  |   |     |     |   |    |
|                                                                 |     | Ecological Animal Husbandry                              |   |  |   |     |     |   |    |
|                                                                 |     | Health Food Safety                                       |   |  |   |     |     |   |    |
|                                                                 |     | Separation Processes                                     |   |  |   |     |     |   |    |
|                                                                 |     | Basic Plant Physiology                                   |   |  |   |     |     |   |    |
| 10.                                                             | Z12 | <i>Elective 14</i>                                       | 2 |  | E | 2   | 2   | 5 | 5  |
|                                                                 |     | Plant bacterioses                                        |   |  |   |     |     |   |    |
|                                                                 |     | Production of Vegetables in a Protected Area             |   |  |   |     |     |   |    |
|                                                                 |     | Bioreaction Systems                                      |   |  |   |     |     |   |    |
|                                                                 |     | Material Analysis                                        |   |  |   |     |     |   |    |
|                                                                 |     | Animal Physiology                                        |   |  |   |     |     |   |    |
| Total:                                                          |     |                                                          |   |  |   | 12  | 12  |   | 30 |
| 6.                                                              | Z36 | Entomology                                               | 8 |  | M | 2   | 2   |   | 5  |
| 7.                                                              | Z37 | Cell Biology                                             | 8 |  | M | 2   | 1   |   | 5  |
| 8.                                                              | Z38 | Parasitology                                             | 8 |  | M | 2   | 1   |   | 5  |
| 9.                                                              | Z39 | Professional Practice 2                                  | 8 |  | M | 2   | 4   |   | 5  |
| 10.                                                             | Z40 | <i>Elective 15</i>                                       | 8 |  | E | 2   | 2   | 5 | 5  |
|                                                                 |     | Bacteriosis of Plants                                    |   |  |   |     |     |   |    |
|                                                                 |     | Pomology                                                 |   |  |   |     |     |   |    |
|                                                                 |     | Technology of Flour and Flour Products                   |   |  |   |     |     |   |    |
|                                                                 |     | Recycling and Waste Disposal                             |   |  |   |     |     |   |    |
|                                                                 |     | Physiology of Plant Growth and Development               |   |  |   |     |     |   |    |
| 10.                                                             | Z41 | <i>Elective 16</i>                                       | 2 |  | E | 2   | 2   | 5 | 5  |
|                                                                 |     | Pseudomycoses and Plant Mycoses                          |   |  |   |     |     |   |    |
|                                                                 |     | Innovations in Agricultural production                   |   |  |   |     |     |   |    |
|                                                                 |     | Technology of Edible Oils and Fats                       |   |  |   |     |     |   |    |
|                                                                 |     | Process Integration                                      |   |  |   |     |     |   |    |
|                                                                 |     | Man and the Environment                                  |   |  |   |     |     |   |    |

|                                                                  |     |     |  |    |
|------------------------------------------------------------------|-----|-----|--|----|
| Total:                                                           | 12  | 12  |  | 30 |
| Total Hours in the Fourth Year of Undergraduate Academic Studies | 360 | 360 |  | 60 |

**After passing all the subjects provided for in the curriculum for eight semesters, a student receives a certificate of completion of the study program with 240 ECTS points, namely Bachelor of Science in Chemical Engineering and Technology - 240 ECTS.**

