**Bachelor’s degree study programme: *SUSTAINABLE ENGINEERING***

**Faculty of Engineering/ Agricultural Academy**

**Curriculum**

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| --- | --- | --- | --- |
| **No.** | **Study course** | **Course code** | **ECTS Credits** |
| **I Year, I Semester** | | | |
| 1. | Study subjects in groups A and B |  | 10 |
| **2.** | Mathematics -1 | MAT 1021 | 6 |
| 3. | Chemistry | MEAEB112 | 4 |
| 4. | Physics | MFITB073 | 4 |
| 5. | Introduction to Specialty | TVI1001 | 3 |
| 6. | Engineering graphics | ZUM1002 | 3 |
|  |  | **Total:** | **30** |
| **II Semester** | | | |
| 1. | Study subjects in groups A and B |  | 10 |
| **2.** | Mathematics-2 | MAT1022 | 6 |
| 3. | Theoretical mechanics | ZUM1004 | 4 |
| 4. | Programming Technologies | INF1018 | 5 |
| 5. | General Biology | BIO1008 | 4 |
|  |  | **Total:** | **29** |
| **II Year, III Semester** | | | |
| 1. | Study subjects of Group A |  | 6 |
| **2.** | Basics of statistics | MAT1025 | 3 |
| 3. | Machine Elements | TVI2002 | 4 |
| **4.** | Thermodynamics | TVI2003 | 5 |
| **5.** | Electrical engineering and electronics | TVI2004 | 4 |
| 6. | Fluid mechanics | ZUM3016 | 4 |
| 7. | Agronomy | TVI2005 | 4 |
|  |  | **Total:** | **30** |
| **IV Semester** | | | |
| 1. | Study subjects in groups A and B |  | 10 |
| **2.** | Automatic Control | TVI2006 | 4 |
| 3. | Sustainable Biosystems Engineering-1 (Precision Agriculture Engineering, GIS) | TVI2007 | 6 |
| 4. | Power and Transport Machinery | TVI2008 | 6 |
| 5. | Computer-aided design | TVI2009 | 5 |
|  |  | **Total:** | **31** |
| **III Year, V Semester** | | | |
| 1. | Study subjects of Group B |  | 4 |
| 2. | Mechatronic systems | TVI3010 | 4 |
| **3.** | Sustainable Biosystems Engineering-2 (Precision Harvesting Machines) | TVI3011 | 6 |
| 4. | Environmental engineering | TVI3012 | 4 |
| **5.** | Language for Specific Purposes | TVI3013 | 3 |
| **6.** | Application of Artificial Intelligence (Application of Machine Learning Systems) | *INF2040* | 5 |
| **7.** | Animal Science | TVI3014 | 4 |
|  |  | **Total:** | **30** |
| **VI Semester** | | | |
| 1. | Sustainable livestock farming | TVI3014 | 6 |
| **2.** | Human Safety | TVI3016 | 4 |
| 3. | Storage Engineering | TVI3017 | 4 |
| **4.** | Reliability of Engineering Systems | TVI3018 | 4 |
| **5.** | Robotics, robots and aircrafts in agriculture | TVI3019 | 8 |
| **6.** | Business planning and evaluation | TVI3020 | 4 |
|  |  | **Total:** | **30** |
| **IV Year, VII Semester** | | | |
| 1. | Bio-waste Recovery Engineering | TVI4021 | 6 |
| 2. | Data Science | TVI4030 | 4 |
| **3.** | Circular Economy | TVI4032 | 4 |
| 4. | Quality Control | TVI4031 | 4 |
| **5.** | *Optional (one group of study subjects is selected out of 4):* |  | 12 |
|  | 1. Precision Agriculture |  |  |
|  | Remote Monitoring of Machine Work Processes | TVI4022 | 6 |
|  | Assessment of Sustainability of Engineering Systems | TVI4023 | 6 |
|  | 2. Intelligent Livestock Farming |  |  |
|  | Design of Smart Livestock Structures | TVI4024 | 6 |
|  | Life Cycle Assessment of Zoosystems | TVI4025 | 6 |
|  | 3.Production of Bioproducts |  |  |
|  | Manufacturing Technology of Bioproducts | TVI4026 | 6 |
|  | Biowaste Energetics | TVI4027 | 6 |
|  | 4.Reliability of Engineering Systems |  |  |
|  | Service of Engineering Systems | TVI4028 | 6 |
|  | Green Tribo Engineering | TVI4029 | 6 |
|  |  | **Total:** | **30** |
| **VIII Semester** | | | |
| 1. | Professional practice | TVI4033 | 15 |
| **2.** | Final work | BENBTVI01 | 15 |
|  |  | **Total:** | **30** |
|  | **Total for the Programme:** |  | **240** |