**SUBJECT (MODULE) DESCRIPTION**

| Subject (module) name | Code |
|---|---|
| Programming „Python“ | |

| Lecturer | Unit |
|---|---|
| **Coordinating: Assist. dr. Konstantinas Korovkinas** | Kaunas faculty<br>Institute of Social Sciences and Applied Informatics<br>Muitines str. 8, LT-44280 Kaunas |

| Study stage | Subject (module) level | Subject (module) type |
|---|---|---|
| First | | mandatory |

| Form of implementation | Implementation period | Implementation language |
|---|---|---|
| Auditorium | 4 semester | English |

| Requirements for the student | |
|---|---|
| **Prerequisites:**<br>Structured and object-oriented programming | **Adjacent requirements:** |

| Subject (module) volume in credits | Full student workload | Contact Hours | Independent working hours |
|---|---|---|---|
| 5 | 130 | 52 | 78 |

**Subject (module) goal: study program competences to be developed**

Subject goal – to introduce the possibilities of programming in Python and to provide practical skills.

**General competence:**

1. Continuous learning (BK2)

**Subject competencies:**

1. Knowledge and skills of conceptual basics (DK4)
2. Technological, methodological knowledge and skills, professional competence (DK6)

| Subject (module) learning outcomes | Study methods | Assessment methods |
|---|---|---|
| Will be able to describe Python programming language syntax and principles. | Demonstration, discussion, problem-based teaching, independent work | Practical tasks, exam |
| Will be able to understand a source code written in Python, to modify and execute it. | | |
| Will be able to write applications in Python. | | |
| Will be able to work with text files. | | |
| Will be able to work with databases. | | |
| Will be able to develop web services. | | |

| Topics | Contact Hour | | | | | | | Independent working hours | |
|---|---|---|---|---|---|---|---|---|---|
| | Lectures | Consultations | Seminars | Exercise | Labworks | Practice | **Full Contact Hours** | **Independent work** | **Tasks** |
| 1. Python interpreter, programming language syntax (procedural programming, object-oriented programming) and style | 3 | | | | 3 | 6 | **6** | **2** | Tasks:<br>1. Functions, object-oriented programming<br>2. Modules, standard library<br>3. Work with text files<br>4. Work with databases<br>5. Web services |
| 2. Modules and standard library | 3 | | | | 3 | | **6** | **6** | |
| 3. Work with text files | 3 | | | | 3 | | **6** | **6** | |
| 4. Work with databases | 6 | | | | 6 | | **12** | **18** | |
| 5. Web services creation | 6 | | | | 6 | | **12** | **18** | |
| 6. Popular Python Libraries | 4 | | | | 4 | | **8** | **10** | |
| 7. Preparing for the exam | | | | | | | | **18** | |
| 8. Exam | | 2 | | | | | **2** | | |
| **Total** | **25** | | | | **25** | | **52** | **78** | |

| Estimation strategy | Weight %. | When | Estimation criterion |
|---|---|---|---|
| Practical tasks | 50 | During the semester | Three tasks. Each is rated on a 10-point scale. Criteria for evaluation: correct functioning and the fulfillment of the specified conditions (70%), error handling in source code (20%), explanation of the source code (10%). The exercise rating is calculated using the formula: PI = (U1+U2+U3)/3 |
| Exam | 50 | During the semester | Three tasks to implement. Maximum rating 10 points. |

| Author | Year of publication | Title | Periodical No. or volume of publication | Place of publication and publisher or internet address |
|---|---|---|---|---|
| **Mandatory literature** | | | | |
| Allen B. Downey | 2013 | Think Python, 2nd Edition | | http://shop.oreilly.com/product/0636920045267.do |
| Zed A. Shaw | 2017 | Learn Python 3 the Hard Way | | https://www.amazon.com/Learn-Python-Hard-Way-Introduction/dp/0134692888 |
| **Additional literature** | | | | |
| Python documentation | | The Python documentation | | https://docs.python.org/3/ |
| Sqlalchemy documentation | | Sqlalchemy documentation | | http://docs.sqlalchemy.org/en/latest/ |
| Flask documentation | | Flask documentation | | http://flask.pocoo.org/docs/0.12/ |