Faculty: FACULTY OF TELECOMMUNICATIONS AND MANAGEMENT
Department: GENERAL ENGENEERING
Professional Field: 5.13. GENERAL ENGENEERING
Specialty: DIGITAL ENTREPRENEURSHIP AND HIGH TECHNOLOGY
Educational-qualification degree: BACHELOR

LEARNING COURSE DESCRIPTION

1. Course title: *FUNDAMENTALS OF PROGRAMMING*
2. Course code: B.45.024.1
3. Type of the course: *Compulsory*
4. Level: *Bachelor*
5. Year of study: *Second*
6. Semester: *Third*
7. Number of credits: *3*
8. Name of the lecturer: *Assoc. Prof. eng. Valeri Petrov Gochev, PhD*
9. Course learning outcomes:

Basic knowledge of nature and specificity of programming, design and operation in a common high-tech environment with clear consideration of essential paradigms of entrepreneurship.

Practical skills in working with object-oriented and other types of programming for solving professional tasks.

Competencies: Upon completion of the course, students must be able to identify, analyze and implement algorithms and data structures in software systems.

10. Teaching methods:

During lectures Microsoft software and multimedia resources are used in order basic principles and technologies to be studied. The last ones are applied using the same software on practical exercises.

11. Prerequisites:

Prerequisites for the following disciplines: Engineering Mathematics - I and II, Fundamentals of Information Technology, Fundamentals of Engineering Design, Fundamentals of Electronics.

Courses using the discipline are Integrated Business Process Management Systems, Network Technologies, Database Management Language, Cybersystems and Internet Services, Large Data Arrays, Cloud Computing, Software Design Models and Methods.

12. Course contents:

The course deals with topics which are related to the most important aspects of object-oriented programming, as well as features of other types of programming. The practical exercises use Microsoft software (.NET Framework and Visual Studio), for which there is a large amount of literature (including in Bulgarian).

13. Bibliography

Basic literature:

1. **Наков С. и колектив**. Основи на програмирането със C#. Изд. „Фабер“, София, 2017.
2. **Наков С., В. Колев и колектив**. Принципи на програмирането със C#. Изд. „Фабер“, Велико Търново, 2018.
3. **Василев А.** C# – основи на езика в примери. Изд. „Асеневци“, 2018.
4. **Крушков Х.** Програмиране на C#. Изд. „Коала Прес“, 2017.
5. **Stepanov A., P. McJones.** Elements of Programming. Semigroup Press, 2019.

Additional literature:

1. **Василев А.** Програмиране с Java SE 10 - основи на езика в примери. Изд. „Асеневци“, 2018.
2. **Bourke C.** Computer Science I, Department of Computer Science & Engineering University of Nebraska – Lincoln, NE 68588, USA, 2018.
3. **Teukolsky R.** AP Computer Science A with 6 Practice Tests. Barron’s Educational Series, Kaplan Inc., 2020.
4. **Freeman E., E. Robson.** Design Paterns. O’Reilly, 2020.

14. Assessment methods and criteria:

Tasks for work related to the lecture material or practical exercises are given to students. *Ongoing assessment* includes solving tests and practical tasks. The evaluation is in accordance with previously announced criteria. The activity of the students during the classes is important in setting specific practical tasks. The course ends with an exam, taking into account the student's work during the semester on lectures and practical classes.

The assessment in the course is formed on the basis of a point system, and the maximum number of points that students can receive is 100. The sum of points in ongoing control is collected by solving tests and practical tasks; with it the student is admitted to an exam, within which points are added, the maximum of which is announced in advance. Table 1 presents the evaluation based on the number of points.

Table 1.

Number of points	**Assessment According to the 6-point Scale System**
0 – 20	Fail 2 **(**F)
20 – 39	Fail 2 (FX)
40 – 49	Satisfactory 3 (E)
50 – 59	Satisfactory 3 (D)
60 – 69	Good 4 (C)
70 – 84	Very good 5 (B)
85 – 100	Excellent 6 (A)

15. Language of instruction: *Bulgarian*