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

LEARNING COURSE DESCRIPTION

1. Course title: *COMPUTER PROJECTING*
2. Course code: B.45.049.2
3. Type of the course: *Elective*
4. Level: *Bachelor*
5. Year of study: *Third*
6. Semester: *Fifth*
7. Number of credits: *3*
8. Name of the lecturer: *Assoc. Prof. eng. Ivan Dinkov Ivanov, PhD*
9. Course learning outcomes:

The aim of the course is to give students an overview and to form basic knowledge necessary for conducting in-depth study of computer design based on the software product MATLAB.

Students who have completed their training in the discipline must acquire:

Basic knowledge of the user interface, operations with vectors and matrices, data types - arrays of special type, software for processing graphics, data and files.

Practical skills for system functions, main window interface. Working with menus. Editing and debugging m> files, creating and working with matrices, multidimensional arrays, structures, cell arrays, graphs for functions and data, visualization in the polar coordinate system, array data processing, geometric data analysis, etc.

Competencies: After completing the course, students must have mastered the basic concepts in the field of computer design using the specialized software product MATLAB.

10. Teaching methods:

The lectures are conducted by acquainting the students with the material provided in the curriculum. The lectures are illustrated with graphic and video material, with illustrative examples and tasks, which are presented through presentations with a multimedia projector.

The practical exercises are conducted in the laboratories of the department, equipped with modern computers, and each student works independently. Before each practical session, students are informed about the need for preliminary preparation on the topic.

11. Prerequisites:

Students should have knowledge of "Fundamentals of Engineering Design" and "Fundamentals of Programming" and others. disciplines from previous semesters.

Courses using the discipline are all disciplines in the remaining semesters.

12. Course contents:

The course studies basic modules and tools of the MATLAB software product, enabling students to deal with future cases and developments requiring computer design and processing.

13. Bibliography

Basic literature:

1. **Stormy Attaway, Matlab:** A Practical Introduction to Programming and Problem Solving 4th Edition, Kindle Edition, Butterworth-Heinemann; 4 edition (July 23, 2016).
2. **Brian Hahn, Daniel Valentine,** Essential MATLAB for Engineers and Scientists 6th Edition, Kindle Edition, Academic Press; 6 edition (September 1, 2016).
3. **Stormy Attaway, MATLAB:** A Practical Introduction to Programming and Problem Solving 5th Edition, Butterworth-Heinemann; 5 edition (July 11, 2018).

Additional literature:

1. **Holly Moore, MATLAB for Engineers**, Global Edition 5th Edition, Pearson; 5 edition (July 2, 2018).
2. **Sulaymon Eshkabilov**, Beginning MATLAB and Simulink: From Novice to Professional, Apress; 1 edition (November 28, 2019).
3. **Taan S.** ElAli, Discrete Systems and Digital Signal Processing with MATLAB 2nd Edition, CRC Press; 2 edition (April 19, 2016).

14. Assessmentmethodsandcriteria:

The course ends with an *ongoing assessment.* The individual and team work of the student during the exercises and the passed online tests is taken into account.

1. Requirements for the assessment of the six-point system

30% of the final grade is formed by the results of the current electronic tests, 20% is formed by the implementation of the practical exercises and 50% by the final test. The current tests and the final test are electronic and are published in the e-learning system of UTP. These include open and closed questions. Some of the questions are related to solving cases in order to check the creative application of the acquired knowledge.

2. Formation of the final mark

Forming an assessment in the training course at each of the above stages, according to the points obtained and their ranking according to the six-point system is given in Table 1.

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 3.00 (E)
50 – 59	Satisfactory 3.00 (D)
60 – 69	Good 4.00 (C)
70 – 84	Very good 5.00 (B)
85 – 100	Excellent 6.00 (A)

15. Language of instruction: *Bulgarian*

1