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| Óbudai University | | Institute of Mechatronics and Vehicle Engineering | | |
| Donát Bánki Faculty of Mechanical and Safety Engineering | | Engineering | | |
| Course name and Neptun-code: Basics of Informatics, BMXI1EHBNE, BMXIAYHBNE | | | | Credits: 3 |
| <i>Full time, 1st Semester of the Academic year 2022/23.</i> | | | | |
| Faculties in which the subject is taught: BSc in Mechatronics | | | | |
| Supervised by: Dr. Laufer Edit | | Lecturers: Dr. Laufer Edit | | |
| Prerequisites conditions: (Neptun Codes) | | | | |
| Lessons per week: | Theory: 2 | Practice (in Auditorium): 0 | Lab: 0 | Consultation: |
| Exam type (s,v,f): | exam | | | |
| The Syllabus | | | | |
| Aim: Give an overview about the basic tools of Informatics, which are needed during engineering work. | | | | |
| Schedule | | | | |
| Weeks | Topics | | | |
| 1. | Concept of informatics. Emergence, development trends. Basic concepts of informatics. | | | |
| 2. | Concept, and quantity of information. Number systems. Transformation between number systems. | | | |
| 3. | Negative numbers. Operations. Numeric, alphanumeric codes. | | | |
| 4. | Real numbers. Operations. | | | |
| 5. | Concept of entropy. Searching theory. | | | |
| 6. | Concept of redundancy. Information coding process. Variable code length. | | | |
| 7. | Test I. | | | |
| 8. | Code tree. Prefix code. | | | |
| 9. | Statistics-based data compression I. | | | |
| 10. | Statistics-based data compression II. | | | |
| 11. | Heuristic information-based methods. Dictionary-based data compression. | | | |
| 12. | Basics of fault tolerant systems. Error detecting and correcting | | | |
| 13. | Test II. | | | |
| 14. | Retake | | | |
| Requirements | | | | |
| Weeks | Tests | | | |
| 7 | Test I. | | | |
| 13 | Test II. | | | |
| 14 | Retake | | | |
| <i>The evaluation criterias</i> | | | | |
| Classes and tests will be held in person. Any change due to the pandemic situation will be announced in the Moodle course. | | | | |
| All main areas of the course are evaluated by test papers. The course is to be considered successfully completed if and only if both tests are written with minimum 40%, as a prerequisite for obtaining a signature . | | | | |
| Based on the Study Regulations III.6.(4), the student may receive an offered grade if they have written both tests successfully and the average is minimum 55%. | | | | |
| All matters which are not covered in this document, the Study and Examination Rules and the provisions of the Study Regulations, valid at Óbuda University, prevails. | | | | |
| The semester closing method (method of examination: written, oral, testing, etc.). | | | | |
| Written exam | | | | |
| Literature: Moodle electronic materials | | | | |
| Quality Assurance: | | | | |