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| Óbuda University Bánki Donát Mechanical and Safety Engineering Faculty | | Mechatronics and Autechnics Engineering Institute | | |
| Course title and code: Pneumatics, Hydraulics NMEI_PH1_ENNE | | | | Credits: 5 |
| <i>Full-time, 2020/21 academic year. 1. Semester</i> | | | | |
| Faculties in which the subject is taught: Mechatronics | | | | |
| Lecturer Instructor: Dr. Ferenc Szlivka | | Instructors: Dr. Ferenc Szlivka | | |
| Prerequisites conditions (code) | | | | |
| Hours per week: | Lecture: 2 | Practise: 1 | Laboratory: 1 | Consultation: 1 |
| Semester Closing way: (required) | Written examination and 4 pieces of job report | | | |
| The program | | | | |
| <p>Course description: The principles, functions, terminology and uses of fluid power components are studied in this course. Control techniques are examined by interpreting hydraulic and pneumatic drawings and symbols. The course provides a survey of actuation and fluid power transmission devices, as well as the properties of fluids. System-technical introduction of the control and auxiliary components of the energy converter of hydraulic and pneumatic power transmitters. Construction and planning methods of hydraulics and pneumatics systems. The program of the semester can be changed because of the virus condition.</p> <p>You will be informed in NEPTUN and in MODDLE.</p> <p>The lectures will be in online format or sometimes you can find the whole lecture in video file in mp4 format in the MOODLE system. If you should not come in the building of the university in this case the practices will be also in online format.</p> <p>You will be informed in email in NEPTUN and in MODDLE system.</p> | | | | |
| Schedule: | | | | |
| Education week (consultation) | Topics | | | |
| 1. | Equations of hydrostatic power transfer Losses in pipe systems | | | |
| 2. | Losses of Power transfer. Determination of operating temperature. Hydraulics and pneumatics systems | | | |
| 3. | Pumps / motors structure and operation characteristics. Solution of pneumatic problems with FLUIDSIM | | | |
| 4. | Energy converters operational. Shell chart measurement. Displacement step diagram | | | |
| 5. | Controlling of the reciprocating pumps. Pneumatic laboratory equipment | | | |
| 6. | Hydraulic cylinders and fixed angular displacement engines. Minimal method | | | |
| 7. | Holiday | | | |
| 8. | Class room Test I. or MOODLE test (depends on the virus condition) Minimal method task solution in laboratory | | | |
| 9. | Directional valves/continuously variable valves, (dimensions, characteristics etc.). | | | |
| 10. | Pressure control valves types, check valves/isolating valves, construction characteristics Cascade method | | | |
| 11. | Flow control valves, types, characteristics, constructions, applications. Cascade method task solution in laboratory | | | |
| 12. | Hydrostatic basic types of connections and features. Shift register method and task solution with FLUIDSIM | | | |
| 13. | Class room Test II. or MOODLE test (depends on the virus condition) | | | |
| 14. | Supplements | | | |

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| Mid-semester requirements: 4 pieces of job preparation and measurement protocol. | |
| Education week (consultation) | 4 tasks (3 pcs of pneumatics and 1 pcs. of hydraulics) deadline on the 12th week. |
| <p>A foglalkozásokon való részvételt a TVSZ III.23.§ (1)-(4) pontja szabályozza.</p> <p><i>A szorgalmi időszakban</i>, a fenti ütemezésben feltüntetett időpontokban és formában, az aláírás követelményeit <i>pótolhatja</i> az a hallgató, aki a feladatokat és a mérési jegyzőkönyveket elkészítette.....</p> <p><i>Letiltva</i> bejegyzést kap az a hallgató „aki sikertelen „Aláíráspótló vizsgát „ tesz vagy arról igazolatlanul távolmarad.</p> <p><i>Aláírás megtagadva</i> bejegyzést kap az a hallgató, aki:sem a feladatokat és mérési jegyzőkönyveket, sem azok pótlását az adott határidőre nem készítette el.....</p> <p>Az évközi jegy/aláírás szorgalmi időszakon túli pótlásának módjáról a Tanulmányi Ügyrend III.6.1.(3)/III.6.2.(3) pontja rendelkezik. Valamennyi, jelen dokumentumban nem szabályozott, kérdésben az Óbudai Egyetem Tanulmányi és Vizsgaszabályzata valamint Tanulmányi Ügyrendjének rendelkezései az irányadók.</p> | |
| The semester closing method (method of examination: written, oral, testing, etc.). | |
| Written exam | |
| There are theoretical questions of the subject. „Questions_2020_Pneumatics and hydraulics.doc” The written exam will be on class rooms on paper or test in MODDLE system. (It depends on the virus condition) | |
| Required reading: Rudi A. Lang: Basic Principles and Components of Fluid Techniques MODDLE system ppt and video | |
| <p>Supplementary readings: Szlivka Ferenc: Irányítástechnika ÓE-BGK 3058, Óbudai Egyetem, 2014 Fűrész-Dr Harkay : Laboratóriumi gyakorlatok és feladatok BMF BGK 3018</p> | |
| Other materials: FLUIDSYM CODE CX-ONE-EDU CODE PPT lecture slides http://siva.bgk.uni-obuda.hu/~szlivka and in MOODLE system | |

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tantárgyfelelős

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főigazgató