

Sommersemester 2020

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| Course | System Dynamics (1V, 1Ü, 1P) |
| Zielgruppe | ISE (Bachelor) |
| URL of the course | https://moodle.uni-due.de/course/view.php?id=19656 Description of previous year (2019) http://www.uni-due.de/srs/v-sd_en.shtml |
| Lecturer | Dr.-Ing. Sandra Rothe/Univ.-Prof. Dr.-Ing. Söffker |
| Assistant | Dr.-Ing. Fateme Bakhshande |
| About course | <p>In SoSe 2020, the course will be realized via the moodle system using video material.</p> <p>The realization is carried out via:</p> <ul style="list-style-type: none"> - Lecture and exercise material (pdf) - Lecture video material (mp4) - Exercise video material (mp4) - Interactive consulting hour (at the time of the course) <p>The videos are published online 3 days before the lecture/exercise date in the Moodle course. During the consulting hours, questions can be asked about the video (lecture or exercise) posted in the corresponding week.</p> <p>The consulting hours are held via Jitsi/Zoom/MS Teams*. Prior to this, registration via the Moodle course is required for each individual course. After the registration you will receive all necessary information or the weekly updated link for participation.</p> <p>* is currently being clarified</p> <p>The basis of the course is the specified textbook (> available in the textbook collection). The central teaching materials are available as encrypted PDF documents in the Moodle course.</p> <p>For each lecture unit a raw manuscript is published which can be downloaded in the Moodle course from the beginning of the course. This serves to structure/individualize the personal notes.</p> <p>The password can be requested via the e-mail address srs-pw@uni-due.de. The subject must contain the word SDe.</p> <p>For preparation/postprocessing of the lecture it is strongly recommended</p> <ul style="list-style-type: none"> ➤ the previous substance, ➤ attend the consultation hours ➤ as well as reading the upcoming substance in |

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| | the given chapters in advance (in the specified textbook/textbook) to work out. |
| Material | Moodle: System Dynamics - SDe https://moodle.uni-due.de/course/view.php?id=19656 |
| Day | Friday |
| Time | Preparation time: 1:00 – 2:30 pm Interactive consulting hour: 2:30 – 4:00 pm |
| First course | April, 24th |
| Last course | June, 26th |
| Literature | Lunze, J.: Regelungstechnik 1, Springer, 3. Auflage, 2001 (available in the library) > L Ogata, K.: Modern Control Engineering, 4th Edition, 2002. (available in the library) > O |
| Additional Reading | Franklin, G.F.; Powell, J.D.; Emami-Naeini, A.: Feedback Control of Dynamic Systems, Prentice Hall 2002 (available in the library) Dorf, R.C.; Bishop, R.H.: Modern Control Systems, Pearson, 2005. |
| Content | <ol style="list-style-type: none"> 1 Terms, Definition, Idea of Feed Back, Technical Control (L 1 – 2.10, O1 + Material) 2 Dynamic Systems, Description of dynamical systems (L 3.1-3.2,4.1; O2.3(**), O3.4(*), O3.5(*), O11.4(*)) [Eq. 11-25f,11-39f] 3 Description of linear systems (L 4.1-4.3.3; O2.3(**),O3.4(*),O3.5(*),O11.4(*)) [Eq. 11-25f,11-39f] 4 Behavior of linear systems (L 5.1.1, L 5.1.2-5.2 + Material) 5 Time behavior of elements and loops (L 5.6 + Material) |
| Practical Exercise | Check separate notice. |
| Exam | ** , Written exam, 90 min, closed-book, mandatory registration at the examination office ** is currently being clarified |