

Sommersemester 2025

Course	System Dynamics (1V, 1Ü, 1P)
Zielgruppe	ISE (Bachelor)
URL of the course	https://lehre.moodle.uni-due.de/course/view.php?id=1024
Lecturer	Univ.-Prof. Dr.-Ing. Dirk Söffker
Assistant	Olena Shyshova, M.Sc.
About course	In SoSe 2025, the course will be realized in presence at the university. The course is based on the following material (downloadable via Moodle): - Lecture and exercise material (pdf) 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. 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. For preparation/postprocessing of the lecture it is strongly recommended ➤ preparation of the previous material, ➤ attending the consultation hours, ➤ as well as reading the upcoming material in the given chapters in advance (in the specified textbook/textbook).
Material	Moodle: System Dynamics – SDe (https://lehre.moodle.uni-due.de/course/view.php?id=1024) The password can be requested via the e-mail address srs-pw@uni-due.de. The subject must contain the word SDe.
Day	Friday
Time	1:00 – 4:00 pm
Room	MB 144
First course	April 11
Last course	June 6

Consulting hours	Thursday, 10.00 – 11.30 am, MB 326
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	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, English OR German examination, mandatory registration at the examination office Please note the changes to the permitted aids for the exam beginning from SoSe24.