Lecture Content and Schedule

Integrated Circuits for Broadband Communications

- Version 06.10.2025, modifications possible, please check regularly
- Change of dates for tutorials may be possible according to preferences of students if ok for tutors
- On Fridays, lectures and tutorials (1. and 2. DS) are in GÖR 226
- On Tuesdays (5. DS), lectures and tutorials are in GÖR 229
- Please bring your portable personal computer (PC) to lab tutorial sessions
- Lecturer: Prof. Frank Ellinger
- Tutorials and contact: Dr. Gunia, marco.gunia@tu-dresden.de

Lectures			**Tutorials**		
No	***Date***	***Content***	***No (min)***	***Date***	***Content***
1	14.10.25 (5. DS)	0. Prelude (11/11) 1. Apps, standards & technologies (9/12)			
2	17.10.25 (1. DS)	2. System considerations (27/29)			
3	17.10.25 (2. DS)	3. Optical devices (22/29)	1 (90)	21.10.25 (5. DS)	*ICBC theory tutorial I: System considerations*
4	24.10.25 (1. DS)	3. Optical devices (continued)			
5	24.10.25 (2. DS)	4. Transimpedance amplifiers (59/95)	2-3 (180)	31.10.25 (1.-2.DS)	*ICBC theory tutorial II: Common amplifier topologies*
6	7.11.25 (1. DS)	4. Transimpedance amplifiers (continued)			
7	7.11.25 (2. DS)	5. Limiters and buffers (31/33)			
8	21.11.25 (1. DS)	6. Laser drivers (22/25)			
9	21.11.25 (2. DS)	7. Voltage controlled oscillators (51/74)	4 (90)	25.11.25 (5. DS)	*ICBC lab tutorial 1: Initial step for start, circuit simulation in LTspice*
			5-6 (180)	28.11.25 (1.-2. DS)	*ICBC lab tutorial 2: Simulation of common-source amplifiers*
10	5.12.25 (1. DS)	7. Voltage controlled oscillators (continued)			
11	5.12.25 (2. DS)	8. Phase locked loops and synthesizers (37/47)	7-8 (180)	12.12.24 (1.-2. DS)	*ICBC lab tutorial 3: Simulation of further amplifiers*
			9-10 (180)	19.12.25 (1.-2. DS)	*ICBC lab tutorial 4: Quadrature phase ring oscillator*
12	9.1.26 (1. DS)	8. Phase locked loops and synthesizers (continued)			
13	9.1.26 (2. DS)	9. Clock data recovery (49/57)			
14	16.1.26 (1. DS)	9. Clock data recovery (continued)			
15	16.1.26 (2. DS)	10. Multiplexer and demultiplexer (16/19) 11. Frequency dividers (21/24)	11 (90)	20.1.26 (5. DS)	*ICBC theory tutorial III: Phase-locked loop*
			12-13 (180)	23.1.26 (1.-2. DS)	*ICBC lab tutorial 5: Phase detector*
16	30.1.26 (1. DS)	11. Frequency dividers (21/24) 12. Transceiver implementation examples (8/8)			
17	30.1.26 (2. DS)	13. Chip design procedure (11/12) 14. Conclusions (6/6)	14 (90)	3.2.26 (5. DS)	Open questions