Lecture Content and Schedule

Integrated Circuits for Broadband Communications

- Version 07.01.2025, 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	15.10.24 (5. DS)	0. Prelude (11/11) 1. Apps, standards & technologies (9/12)			
2	18.10.24 (1. DS)	2. System considerations (27/29)			
3	18.10.24 (2. DS)	3. Optical devices (22/29)	1 (90)	22.10.24 (5. DS)	*ICBC theory tutorial I: System considerations*
4	25.10.24 (1. DS)	3. Optical devices (continued)			
5	25.10.24 (2. DS)	4. Transimpedance amplifiers (59/95)			
6	1.11.24 (1. DS)	4. Transimpedance amplifiers (continued)			
7	1.11.24 (2. DS)	5. Limiters and buffers (31/33)			
8	5.11.24 (5. DS)	6. Laser drivers (22/25)	2 (90)	8.11.24 (1. DS)	*ICBC theory tutorial II: Amplifier topologies (part I)*
			3 (90)	8.11.24 (2. DS)	*ICBC theory tutorial II: Common amplifier topologies (part II)*
9	15.11.24 (1. DS)	7. Voltage controlled oscillators (51/74)			
10	15.11.24 (2. DS)	7. Voltage controlled oscillators (continued)	4 (90)	19.11.24 (5. DS)	*ICBC lab tutorial 1: Initial step for start, circuit simulation in LTspice*
			5-6 (180)	22.11.24 (1.-2. DS)	*ICBC lab tutorial 2: Simulation of common-source amplifiers*
11	29.11.24 (1. DS)	8. Phase locked loops and synthesizers (37/47)			
12	29.11.24 (2. DS)	8. Phase locked loops and synthesizers (continued)			
13	6.12.24 (1. DS)	9. Clock data recovery (49/57)			
14	6.12.24 (2. DS)	9. Clock data recovery (continued)	7-8 (180)	13.12.24 (1.-2. DS)	*ICBC lab tutorial 3: Simulation of further amplifiers*
15	17.12.25 (5. DS)	10. Multiplexer and demultiplexer (16/19) 11. Frequency dividers (21/24)	9-10 (180)	17.1.25 (1.-2. DS)	*ICBC lab tutorial 4: Quadrature phase ring oscillator*
			11 (90)	21.1.25 (5. DS)	*ICBC theory tutorial III: Phase-locked loop*
			12-13 (180)	24.1.25 (1.-2. DS)	*ICBC lab tutorial 5: Phase detector*
16	31.1.25 (1. DS)	11. Frequency dividers (21/24) 12. Transceiver implementation examples (8/8)			
17	31.1.25 (2. DS)	13. Chip design procedure (11/12) 14. Conclusions (6/6)	14 (90)	4.2.25 (5. DS)	Open questions