SEMESTER 4 (summer), total **270 hours = 240 O**[*)] **+ 30 F**[**)], ECTS: 26 **(21 O + 5 F)**

[*)] **O – Obligatory courses (in yellow)**

[**)] **F – Facultative courses (in pink)**

no.	courses	type	hours	ECTS	credit
1	**Master work laboratory II**	laboratory	210 O	**18**	assessment
2	**Master thesis seminar II**	seminar	30 O	**3**	assessment
3	**Synchrotron radiation** • Properties of radiation beams, conservation of radiance • Properties and generation of electromagnetic waves • Relativistic transformations of electromagnetic radiation • Time and frequency domain descriptions • Radiation of undulators • Radiation of bending magnets and wigglers • Radiation of free electron lasers • Acceleration of electrons • Electron beam optics • Construction of electron source, liniac, synchrotron storage ring • History and present of synchrotron radiation sources in the world examples of synchrotron radiation based	lecture	30 F	**5**	exam
4	**Facultative lectures of FAIS**	lecture	30 F	**5**	exam