Module	***Radiation Metrology***
Code	71419
Instruction language	German
ECTS credits	4
Credit hours	4
Duration	1 semester
Cycle	Each semester
Coordinator	Dean of Physics Studies
Lecturer	Prof. Thomas Raiber
Allocation to study programs	Physics M.Sc., elective module, 1st or 2nd semester Wirtschaftsphysik M.Sc., elective module, 1st -3rd Semester
Formal prerequisites	None
Recommended prerequisites	Fundamentals of Atomic Physics and Nuclear Physics
Learning objectives	Students who successfully passed this module • know the generation and effects of X-rays and radioactive radiation • understand the foundations of dosimetry • are able to implement the radiation protection properly • have applied independently the acquired knowledge in a team, and practiced the handling of radioactive measurement methods
Syllabus	Foundation of Nuclear Physics: • composition of the atomic nucleus • decay scheme, decay laws • properties of Alpha, Beta and Gamma radiation protection • Dosimetry: activity, dose rate, measurement instruments • Contamination, incorporation, radio toxicity, natural radiation exposure, man-induced radiation, measurement and estimation of radiation, • Biological effects of radiation: radiation damage, early damage, late damage, effects on adults and embryos, low dose radiation
Literature	
Teaching and learning methods	Lecture (2 hours per week) Lab practice (2 hours per week) (The lectures are held at the Hochschule Ulm H205, Prittwitzstr. 10)
Workload	30 hours lecture (attendance time) 30 hours laboratory course (attendance time) 60 hours self-study and exam preparation Total: 120 hours
Assessment	Written examination. A prerequisite for the participation in the examination is attendance in the lab practice.
Examination	11958 Radiation Metrology

Grading procedure	The module grade is the examination grade.
Basis for	