

Courses in Winter Semester

Courses

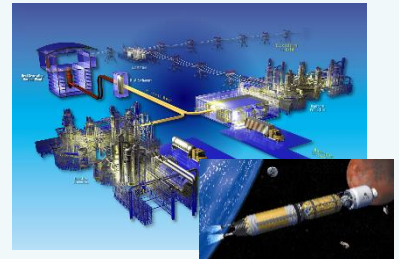
MW0799 Introduction to Nuclear Energy (Course 3 SWS/5 ECTS)

The course offers an introduction to the main scientific, engineering and safety aspects of Nuclear Energy. In the lectures you will learn the most important topics needed to understand how nuclear energy is produced by today's reactors and by future designs, as well as the most important issues related to the use of nuclear energy: safe operation, efficiency, fuel cycle and nuclear waste disposal, and the effects of radiation.



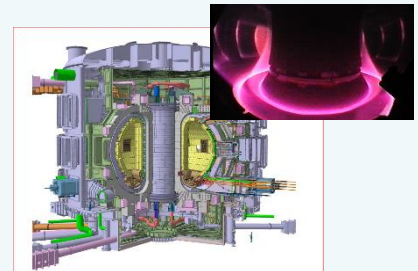
MW1906 Technology and Application of Current and Future Nuclear Reactors (Course 3 SWS/5 ECTS)

The course offers a detailed overview of advanced nuclear reactor designs planned to be deployed around the world in the coming years. It focuses on their development, their new nuclear fuel cycles, and on their advanced areas of application, such as ship propulsion, nuclear rockets, space exploration, production of hydrogen and synthetic fuels, desalination, and future compact and transportable nuclear reactors.



MW1112 Nuclear Fusion Reactor Engineering (Course 2 SWS/3 ECTS)

The course introduces the fundamentals of nuclear fusion reactor engineering and fusion technology. After explaining the main nuclear fusion reactions and their physical background, it describes the operating principles of existing fusion devices and those under construction, with focus on the TOKAMAK machines. It also introduces the concepts of future thermonuclear reactors.



MW 1353 Radiation and Radiation Protection (Course + Exercises 3 SWS/5 ECTS)

The course presents the fundamentals of radiation, radiation protection and radiobiology. It explains how to control and protect people and machines against ionizing radiation by introducing and practically using the most important mathematical and computer techniques employed today in the design and analysis of radiation protection devices.



Seminar

MW2089 Nuclear Safety Principles (5 ECTS)

The seminar introduces the participants to nuclear safety based on the development of individual topics selected by themselves according to their interests: e.g. nuclear safety systems, nuclear accidents and their consequences, nuclear safety policy, nuclear security and non-proliferation issues, etc.

