

## COURSE DETAIL

### RADIO ASTRONOMY PROJECT

**Country**

Germany

**Host Institution**

Technical University Berlin

**Program(s)**

Technical University Berlin

**UCEAP Course Level**

Upper Division

**UCEAP Subject Area(s)**

Electrical Engineering Computer Science

**UCEAP Course Number**

152

**UCEAP Course Suffix****UCEAP Official Title**

RADIO ASTRONOMY PROJECT

**UCEAP Transcript Title**

RADIO ASTRNMY PROJ

**UCEAP Quarter Units**

5.50

**UCEAP Semester Units**

3.70

## Course Description

In the scope of a project, students build radio astronomy components or perform radio astronomy measurements and data processing within interdisciplinary teams. They gain basic knowledge in high frequency technology and signal processing as well as electrical, mechanical, and software engineering. Students learn to understand the working principles of hardware and software related to radio astronomy. Using the knowledge and skills gained in other courses in electrical and computer engineering, participants are able to set up a simple radio telescope. They document and present their work at the end of the project. After successful completion of this module, students are able to work in an interdisciplinary project team, understand general structure and components of radio telescopes, organize small interdisciplinary engineering projects, and use open source soft- and hardware tools for management and development. This course covers applied technical know-how regarding radio astronomy: e.g. characteristics of electromagnetic waves, components for transmitter and receiver circuits, antennas, transmission path, electronics, mechanics, programming, networking and other IT components etc. It discusses practical hardware, software and/or system design as well as manufacturing and implementation. Students use electrical and RF measuring instruments and/or troubleshooting tools. They also study methods for planning and organizing projects and learn the technical and project documentation and presentation of the practical work.

### Language(s) of Instruction

English

### Host Institution Course Number

### Host Institution Course Title

RADIO ASTRONOMY PROJECT (SIERRA)

### Host Institution Course Details

<https://moseskonto.tu-berlin.de/moses/modultransfersystem/bolognamodule/beschre...>

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|---------------------------------------------------------------------------------------------------|
| <b>Host Institution Campus</b>                                                                    |
| <b>Host Institution Faculty</b>                                                                   |
| <b>Host Institution Degree</b>                                                                    |
| <b>Host Institution Department</b><br>Institut für Hochfrequenz und Halbleiter-Systemtechnologien |
| <b>Course Last Reviewed</b><br>2025-2026                                                          |

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