

Satellite Research Centre

EE 9913 – SPACE ENVIRONMENT AND SPACECRAFT SYSTEMS ENGINEERING

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This course introduces spacecraft design and satellite technologies at a fundamental level. This course will introduce the topic of spacecraft design, the principles governing the design process to achieve mission success and spacecraft environmental testing to engineering students.

Students will learn:

1. Basic orbital dynamics
2. Different subsystems of a spacecraft.
3. Systems engineering approach towards spacecraft development
4. The space environment, its effect on spacecraft and environmental testing

Course Content

- Orbital Mechanics
- Space Environment
- Systems Engineering for Space Missions
- Propulsion
- Attitude Control
- Power Systems
- Thermal Control
- Command and Data Handling
- Telecommunication
- Spacecraft Structures
- Project Management

The course material (slides) will be distributed. This course will be offered in three weeks. A 3-hour lecture will be given each day from Monday to Friday. There will be quiz and assignments to assess and evaluate students.

The Satellite Research Centre is starting a student Cubesat project in 2018 with expected launch by end of 2019. Selected students from the course will have an opportunity to work on a real space mission. The course will use the space mission for concept study. Selected students will work to assemble the space hardware, test and operate the satellite.

Embark on a career truly out of this world!!