



Sensors and Location (CEGE0095)

Description

Outline:

Runs from 2018/19 as part of new MSc Geospatial Sciences;

Basic principles of operation, applications and integration of sensors used in smartphones and professional geomatic engineering equipment.

Location technology with an emphasis on Global Navigation Satellite Systems (GNSSs), but also other radio signals, inertial sensors, digital maps (for map matching), vehicle odometers, compasses, sonar/radar and cameras.

Context determination using smartphone sensors.

Application of low-cost imaging and 3D imaging sensors to 3D reconstruction and positioning;

Students will be introduced to the principles of citizen science and crowd sourcing and how low cost sensors and smart phones can be used to gather data about the urban environment.

Strengths (e.g.

ability to represent individual views) and issues (data quality, coverage) will be discussed in theory and validated via practical sessions;

Aims and Learning Outcomes:

The aim of this module is to give students a broad understanding of the capabilities of smartphone and geomatics sensors and their application in location, context determination, image understanding and crowdsourcing for both geomatics professionals and consumers;

Students will develop a broad knowledge of sensors used both by geomatic engineering professionals and by consumers on smartphones, including their basic principles of operation and their applications.

There will be a particular focus on location technology, including global navigation satellite systems (GNSS).

Key information

Year	2018/19
Credit value	15 (150 study hours)
Delivery	PGT L7, Campus-based
Reading List	View on UCL website
Tutor	Dr Paul Groves
Term	Term 2
Timetable	View on UCL website

Assessment



- Coursework: 40%
- Coursework: 60%

Find out more

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Students will learn the strengths and weaknesses of the different location technologies and how to select different combinations of sensors for different location tasks.

Students will also learn how to use imaging sensors for 3D reconstruction, how to determine context from smartphone sensors and how to crowdsource data;

