32117 - RNS - Radio Navigation Systems

Coordinating unit: 230 - ETSETB - Barcelona School of Telecommunications Engineering
Teaching unit: 739 - TSC - Department of Signal Theory and Communications
Academic year: 2015
Degree: ERASMUS MUNDUS MASTER'S DEGREE IN RESEARCH ON INFORMATION AND COMMUNICATION TECHNOLOGIES (Syllabus 2009). (Teaching unit Optional)
ECTS credits: 6
Teaching languages: English

Teaching staff
Coordinator: Jordi Mallorquí
Others: Jordi Mallorquí, Albert Aguasca, Sebastià Blanch, Joan O’Callaghan

Prior skills
It is recommended that students have basic knowledge regarding the following subjects: Signal Processing, Radiocommunications, Antennas, Microwaves and Radar. Any gaps in students' knowledge of the topics will be filled in by consulting a basic reading list.

Learning objectives of the subject
Content

(ENG) 1. Introduction to the course

Degree competences to which the content contributes:

(ENG) 2. Types of navigation systems

Degree competences to which the content contributes:

(ENG) 3. Mathematical models for representing the earth.

Degree competences to which the content contributes:

(ENG) 4. Propagation effects

Degree competences to which the content contributes:

(ENG) 5. Direction finding and hyperbolic systems: Loran C, Decca, Omega

Degree competences to which the content contributes:

(ENG) 6. Air Traffic Control Aids

Degree competences to which the content contributes:

(ENG) 7. Orbits and Geometry.

Degree competences to which the content contributes:


Degree competences to which the content contributes:

(ENG) 9. Systems based on Doppler effect.

Degree competences to which the content contributes:
### 10. Spread-Spectrum signals

Degree competences to which the content contributes:

### 11. NAVSTAR GPS

Degree competences to which the content contributes:

### 12. GLONASS

Degree competences to which the content contributes:

### 13. How to determine position?

Degree competences to which the content contributes:

### 14. Errors

Degree competences to which the content contributes:

### 15. GPS Receivers

Degree competences to which the content contributes:

### 16. GPS supplementary sensors

Degree competences to which the content contributes:

### 17. Kalman filtering / GPS Integration with other systems

Degree competences to which the content contributes:

### 18. Augmentation systems: differential GPS ands pseudolites

Degree competences to which the content contributes:
(ENG) 19. GPS field practice

Degree competences to which the content contributes:

(ENG) 20. Works assignment presentations

Degree competences to which the content contributes:

Bibliography

Basic: