### 330513 - ME - Mathematics for Engineering

**Coordinating unit:** 330 - EPSEM - Manresa School of Engineering  
**Teaching unit:** 749 - MAT - Department of Mathematics  
**Academic year:** 2018  
**Degree:** BACHELOR'S DEGREE IN AUTOMOTIVE ENGINEERING (Syllabus 2017). (Teaching unit Compulsory)  
**ECTS credits:** 4,5  
**Teaching languages:** English

### Degree competences to which the subject contributes

**Basic:**

CB1. The students have demonstrated to possess and to understand knowledge in an area of study that starts from the base of the general secondary education, and is usually found to a level that, although it relies on advanced textbooks, also includes some aspects that involve knowledge from the vanguard of their field of study.

CB2. Students can apply their knowledge to their work or vocation in a professional way and possess the skills that are usually demonstrated through the elaboration and defense of arguments and problem solving within their area of study.

**Specific:**

CE1. Ability to solve mathematical problems that may arise in engineering. Ability to apply knowledge about: linear algebra; geometry; differential geometry; differential and integral calculus; differential equations and partial derivatives; numerical methods; numerical algorithms; statistics and optimization.

**Generical:**

CG3. Knowledge in basic and technological subjects that will enable them to learn new methods and theories and give them the versatility to adapt to new situations.

**Transversal:**

1. EFFECTIVE USE OF INFORMATION RESOURCES - Level 2. Designing and executing a good strategy for advanced searches using specialized information resources, once the various parts of an academic document have been identified and bibliographical references provided. Choosing suitable information based on its relevance and quality.

2. SELF-DIRECTED LEARNING - Level 2: Completing set tasks based on the guidelines set by lecturers. Devoting the time needed to complete each task, including personal contributions and expanding on the recommended information sources.

3. THIRD LANGUAGE. Learning a third language, preferably English, to a degree of oral and written fluency that fits in with the future needs of the graduates of each course.

### Learning objectives of the subject
## Study load

<table>
<thead>
<tr>
<th>Total learning time: 112h 30m</th>
<th>Hours large group: 22h 30m</th>
<th>20.00%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Hours medium group: 0h</td>
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<tr>
<td></td>
<td>Hours small group: 22h 30m</td>
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<td></td>
<td>Guided activities: 0h</td>
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<tr>
<td></td>
<td>Self study: 67h 30m</td>
<td>60.00%</td>
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</table>

## Content

### title english

**Learning time:** 82h 30m
- Theory classes: 16h 30m
- Laboratory classes: 16h 30m
- Self study: 49h 30m

**Description:**
content english

### title english

**Learning time:** 30h
- Theory classes: 6h
- Laboratory classes: 6h
- Self study: 18h

**Description:**
content english
### Planning of activities

<table>
<thead>
<tr>
<th>Name English</th>
<th>Hours</th>
<th>Theory classes</th>
<th>Self study</th>
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<tbody>
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<td></td>
<td>36h</td>
<td>18h</td>
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<td>36h 30m</td>
<td>15h</td>
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<td></td>
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<tr>
<td></td>
<td>6h</td>
<td>1h 30m</td>
<td>4h 30m</td>
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### Bibliography

**Basic:**


**Others resources:**