### Master in Civil Engineering: track for students with BSc Civil Engineering background

#### SPECIALIZATION IN TRANSPORT ENGINEERING

**1st year** UPC  
Student must enroll 60 ECTS at Escola de Camins  
30 ECTS  
10 ECTS M2. First semester. Mandatory Courses: Computational eng, Structural Eng., Water Eng., Ground Eng., Transportation management and planning  
15-20 ECTS  
0-15 ECTS M1. Professional stage (max. 15 ECTS to enroll in UPC)

**2nd year** HEC PARIS  
Course in general Management - 60 ECTS (only displayed subjects to be recognized at UPC)  
(only displayed subjects to be recognized at UPC)  
**3rd year** HEC PARIS  
Specialization Phase. Management. 40 ECTS in courses + 20 ECTS Research paper, 60 ECTS in total (only displayed subjects enrolled at UPC)  
M Professional stage. Student must enroll (30- X) ECTS, where X is the number of credits of Professional stage done at UPC

<table>
<thead>
<tr>
<th>Site university</th>
<th>Semester</th>
<th>Course</th>
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</thead>
<tbody>
<tr>
<td>UPC Q1 (30 ECTS Mandatory courses)</td>
<td>UPC</td>
<td>Computational Engineering</td>
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<tr>
<td>UPC</td>
<td>Structural Engineering</td>
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<tr>
<td>UPC</td>
<td>Water Engineering</td>
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<tr>
<td>UPC</td>
<td>Geomechanical and Geotechnical Engineering</td>
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<tr>
<td>UPC</td>
<td>Planning and Management of Transportation</td>
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<tr>
<td>UPC Q2 (Mandatory/electives of specialization)</td>
<td>UPC</td>
<td>High-Speed Rail Line Management (ME)</td>
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<td>UPC</td>
<td>Road Network Planning and Cooperation (ME)</td>
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<tr>
<td>UPC</td>
<td>Elective 1</td>
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<tr>
<td>UPC</td>
<td>Elective 2</td>
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<tr>
<td>UPC</td>
<td>Elective 3</td>
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<tr>
<td>UPC</td>
<td>Elective 4 (optional)</td>
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<tr>
<td>UPC</td>
<td>Elective 5</td>
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<tr>
<td>HEC/UPC Q2 or Q3</td>
<td>UPC or HEC</td>
<td>Electives or Professional stage (max 15 ECTS at UPC)</td>
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<tr>
<td>HEC Q3-Q4 (stage and Mandatory/electives of specialization)</td>
<td>HEC</td>
<td>Electives or Professional stage</td>
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<tr>
<td>HEC</td>
<td>Urban Planning and Urban Service Infrastructure (ME)</td>
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<tr>
<td>HEC</td>
<td>Urban Mobility (ME)</td>
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<tr>
<td>HEC Q5-Q6 (TFM)</td>
<td>HEC</td>
<td>Master Thesis (to be defended at UPC)</td>
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</tbody>
</table>

**TOTAL**  
80  
60

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1. First year of MMM (Master in Management: 60 ECTS general courses). Only displayed subjects to be recognized at UPC.  
2. Second year of MMM (Master in Management: 40 ECTS in courses + 20 ECTS Research paper, 60 ECTS in total). Only displayed subjects enrolled at UPC.  
3. Mandatory of specialization (ME)  
The itinerary includes "other related disciplines" track as alternative to professional stage (subjects as displayed in the table).
### Master in Civil Engineering: track for students with BSc Publick Works Engineering background

**SPECIALIZATION IN TRANSPORTATION ENGINEERING**

**1st year**

- **UPC**
  - **30 ECTS**
  - Student must enroll 60 ECTS at Escola de Camins
  - Further training in science and technology
  - Application of advanced science and technology

**2nd year**

- **HEC PARIS**
  - Course in general Management - 60 ECTS (only displayed subjects to be recognized at UPC)
  - (optional gap year)

**3rd year**

- **HEC PARIS**
  - Specialization Phase. Management. 40 ECTS in courses + 20 ECTS Research paper, 60 ECTS in total (only displayed subjects enrolled at UPC)

### Site university | Semester | University where course is undertaken | Course | ECTS at host institution | ECTS at dissertation
---|---|---|---|---|---
**UPC** | Q1 (30 ECTS OBs-mandatory courses) | UPC | Mechanics of Continua | 9 | 0
| | | UPC | Numerical Modelling | 9 | 0
| | | UPC | Structural Analysis | 7.5 | 0
| | | UPC | Hydraulic Infrastructure | 4.5 | 0
| | Q2 (30 ECTS OBs-mandatory courses) | UPC | Computational Engineering | 6 | 0
| | | UPC | Structural Engineering | 6 | 0
| | | UPC | Water Engineering | 6 | 0
| | | UPC | Geomechanical and Geotechnical Engineering | 6 | 0
| | | UPC | Planning and Management of Transportation | 6 | 0
| | | | | | 60 60
| **HEC** | Q1-Q2 (Mandatory and electives of specialization) | HEC | Electives | 15 | 20
| | | HEC | Road Network Planning and Operation (ME) | 5 | 5
| | | HEC | High-Speed Rail Line Management (ME) | 5 | 5
| | | HEC | Urban Planning and Urban Service Infrastructure (ME) | 5 | 5
| | | HEC | Urban Mobility (ME) | 5 | 5
| | | | | | 20 20
| | Q3-Q6 (TFM) | HEC | Master Thesis (to be defended at UPC) | 25 | 20
| | | | | | 60 60

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1) First year of MiM (Master in Management: 60 ECTS general courses). Only displayed subjects to be recognized at UPC
2) Second year of MiM (Master in Management: 40 ECTS in courses + 20 ECTS Research paper, 60 ECTS in total). Only displayed subjects enrolled at UPC