Master’s program in Chemical Engineering - Academic Year 2018-2019

The Master's program in Chemical Engineering offers two specializations/tracks:
- Chemical and Process Technology (CPT), and
- Molecular Systems and Materials Chemistry (MSMC)

The main structure of the Master's program (120 EC in total) is identical for both specializations:

- Core Program (specialization specific) 20 EC
- Specialization Elective Program 20 EC
- Free Elective Program 15 EC
- Internship 20 EC
- Graduation Project 45 EC

In the table on the next page you will find the courses offered within the specialization Chemical and Process Technology and Molecular Systems and Materials Chemistry. All courses have a study load of 5 credits (EC) based on the European Credit Transfer System except for the International Research/Design Work Placement (6EMAC4) which has a study load of 15 EC. Elective course Capita Selecta (6EMAC3) can be planned in any quartile, in consultation with the supervisor and after approval of the board of examiners.

The courses are all planned according to the timeslot model as shown underneath:
<table>
<thead>
<tr>
<th>Track CPT</th>
<th>Track MSMC</th>
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</thead>
<tbody>
<tr>
<td>Chemical and Process Technology</td>
<td>Molecular Systems and Materials Chemistry</td>
</tr>
<tr>
<td>6CPT10 - 6CPT40 belong to core program CPT track</td>
<td>6MSM10 - 6MSM40 belong to core program MSMC track</td>
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### Q1
- **6CPT10** Advanced Transport Phenomena (D)
- 6EAMA01 Micro Flow Chemistry and Process Technology (A)
- 6EAMA02 Particle-based Simulations (B)
- **6MM10** Physical Organic Chemistry (C)
- 6EAMA51 Characterization of Materials (B)
- 6EAMA53 Molecular Photo physics (E)
- **6EMAC7** ICMS Industrial Challenge (no timeslot, Q1 up to and including Q2)

### Q2
- **6CPT20** Catalysis, Science and Technology (E)
- **6MSM20** Inorganic Chemistry and Materials (D)
- 6EAMA08 Multiphase Computational Fluid Dynamics (D)
- **6MSM31** Polymer and Colloid Science (C)
- 6EAMA1 Essentials of Polymer Reaction Engineering (A)
- 6EAMA5 Polymer Membranes for Sustainable Process Applications (B)

### Q3
- **6CPT30** Advanced Chemical Reaction Engineering (A)
- **6CPT40** Advanced Separation Technology (E)
- 6EAMA07 Phase Transition in Process Equipment (B)
- **6EAMA55** Mechanical Behavior and Rheology (D)
- **6EAMA61** Advances in Molecular Chemistry (E)
- 6EAMA59 Experimental Soft Matter (A)
- **6EMAC2** Modern Concepts in Catalysis (C)
- **6EMAC6** Electrochemical Engineering (D)

### Q4
- 6EAMA05 Multiphase Reactor Modelling (D)
- **6EAMA60** Natural vs Synthetic Materials 2.0 (B)
- 6EAMA06 Advanced Process Design (B)
- **6EAMA52** Coatings Science and Technology (A)

Course descriptions and information about the study schedule can be found in OSIRIS Catalog: [https://osiris.tue.nl/osiris_student_tueprd/OnderwijsCatalogus.do?taal=en](https://osiris.tue.nl/osiris_student_tueprd/OnderwijsCatalogus.do?taal=en)