

## Curriculum Chemical & Process Engineering 2022-2023

|        |                    |                       |                   |                   |
|--------|--------------------|-----------------------|-------------------|-------------------|
| Legend | Compulsory courses | Electives CSE CPE     | Electives CSE MME | Electives non CSE |
|        | Deficiency courses | Electives CSE General |                   |                   |

| Year 1       |  |  |  |  |
|--------------|--|--|--|--|
|              | Quarter 1A   | Quarter 1B   | Quarter 2A   | Quarter 2B   |
| Core Modules | <b>Advanced Chemical Reaction Engineering</b><br>(5 EC; Brilman/Kersten) |  | <b>Process Plant Design incl. Thermodynamics and Flowsheeting</b><br>(15 EC; van der Ham/van den Berg) |  |
|              | <b>Advanced Catalysis</b><br>(5 EC; Lefferts/Mul)                        | <b>Advanced Molecular Separations</b><br>(5 EC; de Vos/Schuur) |  |  |
|              |  |  |  | <b>Process Dynamics &amp; Control</b><br>(2.5 EC; Zondervan) |

| Year 2       |   |            |  |            |
|--------------|---|------------|--|------------|
|              | Quarter 1A  | Quarter 1B | Quarter 2A                             | Quarter 2B |
| Core modules | <b>Internship &amp; Job Orientation Project</b><br>(20 EC; Folkers) |            | <b>Final Master Project</b><br>(40 EC) |            |

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| Electives scheduled | <b>Multi-component Mass Transport</b><br>(5 EC; Benes)  |  | <b>Labcourse SPT</b> (2.5 EC; Kersten)            |  |
|                     | <b>Transport Phenomena</b><br>(5 EC; Mahmoudi)          | <b>Cost Management &amp; Engineering</b><br>(5 EC; Joosten)              | <b>Process Equipment Design</b><br>(5 EC; Bramer) | <b>Numerical Methods for Engineers</b><br>(5 EC; Lammertink)             |
|                     | <b>Advanced Colloids and Interfaces</b><br>(5 EC; Wood) | <b>Electrochemistry: fundamentals and techniques</b><br>(5 EC; Altomare) | <b>Turbulent Combustion</b><br>(5 EC; Kok)        | <b>Multi-phase Flow</b><br>(5 EC; Luding)                                |
|                     |   |  |   | <b>Electrocatalysis: Materials and Spectroscopy</b><br>(5 EC; Katsoukis) |

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| 2.5 EC Topics | <b>Innovating Reactor Systems</b><br>(Fernandez) | <b>Ion Transport in Fluids</b> (Wood e.a.)                           | <b>Chem. Process Analysis</b><br>(Gardeniers)          | <b>Process Optimazation</b><br>(Zondervan)             |
|               |  | <b>Design and simulation of chemical batch processes</b><br>(Franke) | <b>Electrochemical Engineering</b><br>(Banerjee)       | <b>Membrane Processes</b><br>(Lammertink/de Vos/Benes) |
|               |  |  | <b>Scaling up in Chemical Engineering</b><br>(Brilman) | <b>Membrane Materials</b><br>(Lammertink/de Vos/Benes) |

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| Electives n.s. | <b>Capita Selecta Research Group</b> (5 EC)            |  |  |  |
|                | <b>Contract Research</b> (5 EC)                        |  |  |  |
|                | <b>Sustainable Chemicals</b> (2,5 EC; Ruiz Ramiro)     |  |  |  |
|                | <b>Sustainable Fuels</b> (2,5 EC; Ruiz Ramiro)         |  |  |  |
|                | <b>Theory of Phase Equilibria</b> (5 EC; van der Hoef) |  |  |  |

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|------------|---|--|
| Deficiency | <b>Workshop Aca. Skills</b><br>(0,5 EC)       |  |
|            | <b>Matlab for pre-masters ET</b><br>(2 EC)    |  |
|            | <b>Chemical Reaction Engineering</b> (3,5 EC) |  |
|            | <b>Math for Engineers</b><br>(0 EC, optional) |  |