

**Select the research group:**

- [Energy Technology](#)
- [Mechanics of Materials](#)
- [Microsystems](#)
- [Multiphase and Reactive Flows](#)
- [Polymer Technology](#)

***Please note : class planning may have changed***

# Energy Technology

| Subject Code | Subject Name   | Class Planning                                  | Time Slot |
|--------------|--|---|-----------|
| 0EM110       | Research Methodology for the Innovation Sciences       | Semester A Kwartiel 1                           | B         |
| 0EM140       | Energy, economy and society                            | Semester A Kwartiel 2                           | B         |
| 0EM150       | Sustainability Transitions and Responsible Innovation  | Semester B Kwartiel 3                           | C         |
| 0EM200       | International Development and Sustainability           | Semester B Kwartiel 4                           | E         |
| 2IMA10       | Advanced algorithms                                    | Semester A Kwartiel 1                           | D2        |
| 2MMA20       | Partial differential equations                         | Semester B Kwartiel 3                           | D         |
| 2MMA30       | Modeling and perturbation methods                      | Semester B Kwartiel 3                           | C         |
| 2MMA40       | Evolution equations                                    | Semester B Kwartiel 4                           | E         |
| 2MMA60       | Introduction to homogenization                         | Semester A Kwartiel 1                           | C         |
| 2MMH30       | Analysis and scientific computing                      | Semester A Kwartiel 1 t/m Semester B Kwartiel 4 |           |
| 2MMN10       | Scientific computing                                   | Semester A Kwartiel 1                           | E         |
| 2MMN20       | Scientific programming                                 | Semester A Kwartiel 2                           | D         |
| 2MMN30       | Scientific computing in partial differential equations | Semester B Kwartiel 4                           | C         |
| 3MP110       | Solar Cells  | Semester B Kwartiel 3                           | D         |
| 3MT010       | Advanced fluid dynamics                                | Semester B Kwartiel 3                           | B         |
| 3MT020       | Micro- and nanofluidics                                | Semester A Kwartiel 1                           | C         |
| 3MT100       | Chaos  | Semester B Kwartiel 3                           | D         |
| 3MT110       | Geophysical fluid dynamics                             | Semester B Kwartiel 4                           | B         |
| 3MT120       | Advanced Computational Fluid and Plasma Dynamics       | Semester B Kwartiel 3                           | E         |
| 3MT130       | Transport in porous media                              | Semester B Kwartiel 4                           | E         |
| 3MT140       | Experimental methods in transport physics              | Semester A Kwartiel 2                           | E         |
| 3MT150       | Environmental Fluid Mechanics                          | Semester A Kwartiel 1                           | D         |
| 4AT020       | Future Fuels and Clean Engines                         | Semester B Kwartiel 4                           | C         |
| 4BM30        | Modelling combustion                                   | Semester A Kwartiel 2                           | D         |
| 4BM40        | Optical diagnostics for combustion and fluid flow      | Semester B Kwartiel 4                           | A         |
| 4EM20        | Energy conversion systems                              | Semester B Kwartiel 3                           | E         |
| 4EM30        | Scientific computing for mechanical engineering        | Semester B Kwartiel 3                           | B         |
| 4EM50        | Thermal energy storage                                 | Semester B Kwartiel 3                           | D         |
| 4SE000       | Sustainable energy sources                             | Semester A Kwartiel 2                           | A         |
| 6CPT10       | Advanced transport phenomena                           | Semester A Kwartiel 1                           | D         |
| 6CPT30       | Advanced chemical reactor engineering                  | Semester B Kwartiel 3                           | A         |
| 6CPT40       | Advanced separation technology                         | Semester B Kwartiel 4                           | A         |
| 6EMA01       | Micro flow chemistry and process technology            | Semester A Kwartiel 1                           | A         |
| 6EMA02       | Particle-based simulations                             | Semester A Kwartiel 1                           | B         |
| 6EMA03       | Introduction to computational fluid dynamics           | Niet ingepland                                  |           |
| 6EMA04       | Process optimization                                   | Semester B Kwartiel 3                           | B1        |
| 6EMA05       | Multiphase reactor modeling                            | Semester B Kwartiel 4                           | D         |
| 6EMA06       | Advanced process design                                | Semester B Kwartiel 4                           | B         |
| 7LL1M0       | Sports and building aerodynamics                       | Semester A Kwartiel 2                           | A         |
| 7LS6M0       | Heat, air & moisture transfer/CFD2                     | Semester B Kwartiel 4                           | E         |
| 7LS9M0       | Heat, air & moisture transfer/CFD1                     | Semester B Kwartiel 3                           | C         |
| 7LY3M0       | Building performance and energy systems simulation     | Semester A Kwartiel 1                           | C         |
| 8VM00        | Cardiovasculaire stromingsleer                         | Semester A Kwartiel 1                           | B         |
| 8VM40        | Cardiovasculaire vaste stof - vloeistof interactie     | Semester B Kwartiel 4                           | D         |

# Mechanics of Materials

| Subject Code | Subject Name   | Class Planning                                  | Time Slot |   |
|--------------|--|---|-----------|---|
| 0LM180       | Model-based Science: Principles and Practice                     | Semester A Kwartiel 1                           | C         | I |
| 2DMN00       | Design and analysis of experiments                               | Semester B Kwartiel 3                           | D         | I |
| 2MMA20       | Partial differential equations                                   | Semester B Kwartiel 3                           | D         | I |
| 2MMA50       | Advances in continuum modeling                                   | Semester B Kwartiel 3                           |           | I |
| 2MMA60       | Introduction to homogenization                                   | Semester A Kwartiel 1                           | C         | I |
| 2MMH30       | Analysis and scientific computing                                | Semester A Kwartiel 1 t/m Semester B Kwartiel 4 |           | I |
| 2MMN10       | Scientific computing   | Semester A Kwartiel 1                           | E         | I |
| 2MMN20       | Scientific programming   | Semester A Kwartiel 2                           | D         | I |
| 2MMN30       | Scientific computing in partial differential equations           | Semester B Kwartiel 4                           | C         | I |
| 3MA010       | Computational and mathematical physics                           | Semester A Kwartiel 1                           | B         | I |
| 3MF100       | Fusion on the back of an envelope                                | Semester A Kwartiel 1                           | A         | I |
| 3MF120       | Materials in fusion reactors and its plasma-wall interaction     | Semester B Kwartiel 3                           | B         | I |
| 3MN200       | Computational Materials Science                                  | Semester B Kwartiel 4                           | B         | I |
| 4BM00        | Advanced engineering mathematics                                 | Semester A Kwartiel 1                           | E         | K |
| 4BM20        | Experimentation for Mechanical Engineering                       | Semester A Kwartiel 2                           | E         | R |
| 4CM40        | Physical modelling   | Semester B Kwartiel 3                           | D         | I |
| 4CM50        | Applications of design principles                                | Semester B Kwartiel 4                           | D         | I |
| 4DM20        | Optimisation   | Semester B Kwartiel 3                           | B         | R |
| 4EM30        | Scientific computing for mechanical engineering                  | Semester B Kwartiel 3                           | B         | K |
| 4EM60        | Advanced discretization techniques                               | Semester B Kwartiel 4                           | B         | R |
| 4LM20        | Polymer processing   | Semester A Kwartiel 2                           | C         | I |
| 4LM30        | Multiscale modelling for polymer mechanics                       | Semester B Kwartiel 3                           | C         | R |
| 4LM40        | Structural integrity and reliability                             | Semester B Kwartiel 4                           | C         | K |
| 4MM00        | Composite and light-weight materials: design and analysis        | Semester A Kwartiel 1                           | A         | K |
| 4MM10        | Advanced computational continuum mechanics                       | Semester A Kwartiel 2                           | A         | K |
| 4MM20        | Computational and experimental micro-mechanics                   | Semester A Kwartiel 2                           | D         | K |
| 4MM30        | Deformation and failure of materials                             | Semester B Kwartiel 4                           | B         | K |
| 4MM40        | Mechanics of micro-electronics                                   | Semester B Kwartiel 4                           | D         | R |
| 4UM00        | Microfabrication methods   | Semester A Kwartiel 1                           | B         | I |
| 6EMA51       | Characterization of materials                                    | Semester A Kwartiel 1                           | B         | I |
| 6MSM40       | Mechanical and functional properties of materials                | Semester B Kwartiel 4                           | E         | I |
| 7KP6M0       | Energy and finite elements methods                               | Semester B Kwartiel 3                           | E         | I |
| 7KT7M0       | Finite element method, non-linear                                | Semester A Kwartiel 1                           | B         | R |
| 7LY6M0       | Materials panorama: design, functionality, environmental aspects | Semester B Kwartiel 4                           | B         | I |
| 8MM30        | Numerieke analyse van continua II                                | Semester B Kwartiel 3                           | D         | I |

**Last column:**

K = Key

R = Recommended

I = Interesting

## Microsystems

| Subject Code | Subject Name   | Class Planning        | Time Slot |
|--------------|--|-----------------------|-----------|
| 0HM110       | User Experience Design (Design track A)              | Semester A Kwartiel 1 | D         |
| 1ZM20        | Technology entrepreneurship                          | Semester A Kwartiel 2 | D         |
| 1ZM50        | Design science methodology                           | Semester B Kwartiel 3 | B         |
| 3ME120       | Physics of engineering problems                      | Semester A Kwartiel 2 | D         |
| 3MN170       | Molecular biosensing                                 | Semester A Kwartiel 2 | E         |
| 3MP110       | Solar Cells  | Semester B Kwartiel 3 | D         |
| 3MT010       | Advanced fluid dynamics                              | Semester B Kwartiel 3 | B         |
| 3MT020       | Micro- and nanofluidics                              | Semester A Kwartiel 1 | C         |
| 3MT140       | Experimental methods in transport physics            | Semester A Kwartiel 2 | E         |
| 3MT150       | Environmental Fluid Mechanics                        | Semester A Kwartiel 1 | D         |
| 4BM20        | Experimentation for Mechanical Engineering           | Semester A Kwartiel 2 | E         |
| 4BM40        | Optical diagnostics for combustion and fluid flow    | Semester B Kwartiel 4 | A         |
| 4BM60        | Interfacial transport phenomena in engineering flows | Semester A Kwartiel 1 | D         |
| 4CM10        | System theory for control                            | Semester A Kwartiel 1 | D         |
| 4CM50        | Applications of design principles                    | Semester B Kwartiel 4 | D         |
| 4DM20        | Optimisation   | Semester B Kwartiel 3 | B         |
| 4EM30        | Scientific computing for mechanical engineering      | Semester B Kwartiel 3 | B         |
| 4EM40        | Heat and flow in microsystems                        | Semester A Kwartiel 2 | C         |
| 4LM30        | Multiscale modelling for polymer mechanics           | Semester B Kwartiel 3 | C         |
| 4LM40        | Structural integrity and reliability                 | Semester B Kwartiel 4 | C         |
| 4LM50        | Rheology   | Semester B Kwartiel 4 | E         |
| 4MM20        | Computational and experimental micro-mechanics       | Semester A Kwartiel 2 | D         |
| 4MM30        | Deformation and failure of materials                 | Semester B Kwartiel 4 | B         |
| 4MM40        | Mechanics of micro-electronics                       | Semester B Kwartiel 4 | D         |
| 4UM00        | Microfabrication methods                             | Semester A Kwartiel 1 | B         |
| 4UM10        | Microfluidics put-to-work                            | Semester B Kwartiel 3 | A         |
| 5LMB0        | Model predictive control                             | Semester B Kwartiel 3 | A         |
| 5LPC0        | Electromagnetics engineering                         | Semester B Kwartiel 4 | B         |
| 5LSB0        | Monitoring of respiration and circulation            | Semester A Kwartiel 2 | B         |
| 5LSC0        | Biomedical sensing technology                        | Semester A Kwartiel 1 | A         |
| 5LWA0        | Design & application of industrial linear motors     | Semester B Kwartiel 4 | D         |
| 5LWC0        | Advanced actuator design                             | Semester B Kwartiel 4 | A         |
| 6CPT10       | Advanced transport phenomena                         | Semester A Kwartiel 1 | D         |
| 6EMA01       | Micro flow chemistry and process technology          | Semester A Kwartiel 1 | A         |
| 6EMA55       | Mechanical behavior & rheology                       | Semester B Kwartiel 3 | B         |
| 6EMA59       | Experimental Soft Matter                             | Semester B Kwartiel 3 |           |
| 6MSM30       | Polymer science                                      | Semester B Kwartiel 3 | D         |
| 6MSM40       | Mechanical and functional properties of materials    | Semester B Kwartiel 4 | E         |
| 8NM10        | Biosensors voor medische diagnostiek                 | Semester A Kwartiel 2 | E         |
| 8SM20        | Biomaterialen  | Niet ingepland        |           |
| 8TM00        | Bot cel en weefsel mechanica                         | Semester A Kwartiel 2 | A         |
| 8TM20        | Biologische mengsels                                 | Semester A Kwartiel 1 | E         |
| 8VM00        | Cardiovasculaire stromingsleer                       | Semester A Kwartiel 1 | B         |
| 8VM10        | Pathofysiologie van de circulatie                    | Semester A Kwartiel 2 | B1        |
| 8VM30        | Vaatmechanica  | Semester B Kwartiel 3 | C         |
| 8VM40        | Cardiovascular vaste stof - vloeistof interactie     | Semester B Kwartiel 4 | D         |

# Multiphase & Reactive Flows

| Subject Code | Subject Name   | Class Planning                                  | Time Slot |   |
|--------------|--|---|-----------|---|
| 0EM110       | Research Methodology for the Innovation Sciences         | Semester A Kwartiel 1                           | B         | I |
| 0EM140       | Energy, economy and society                              | Semester A Kwartiel 2                           | B         | I |
| 0EM150       | Sustainability Transitions and Responsible Innovation    | Semester B Kwartiel 3                           | C         | I |
| 0EM200       | International Development and Sustainability             | Semester B Kwartiel 4                           | E         | I |
| 0EM330       | Cars in Context: Emergence of an Automobile System in    | Semester B Kwartiel 3                           |           | I |
| 2IMA10       | Advanced algorithms                                      | Semester A Kwartiel 1                           | D2        | I |
| 2MMA20       | Partial differential equations                           | Semester B Kwartiel 3                           | D         | R |
| 2MMA30       | Modeling and perturbation methods                        | Semester B Kwartiel 3                           | C         | I |
| 2MMA40       | Evolution equations                                      | Semester B Kwartiel 4                           | E         | I |
| 2MMA50       | Advances in continuum modeling                           | Semester B Kwartiel 3                           |           | I |
| 2MMA60       | Introduction to homogenization                           | Semester A Kwartiel 1                           | C         | I |
| 2MMH30       | Analysis and scientific computing                        | Semester A Kwartiel 1 t/m Semester B Kwartiel 4 |           | I |
| 2MMN10       | Scientific computing                                     | Semester A Kwartiel 1                           | E         | R |
| 2MMN20       | Scientific programming                                   | Semester A Kwartiel 2                           | D         | I |
| 2MMN30       | Scientific computing in partial differential equations   | Semester B Kwartiel 4                           | C         | R |
| 3MP010       | Introduction to plasma physics                           | Semester A Kwartiel 1                           | E         | I |
| 3MP020       | Advanced optics  | Semester B Kwartiel 3                           | C         | R |
| 3MP110       | Solar Cells  | Semester B Kwartiel 3                           | D         | I |
| 3MP160       | Advanced Plasma Physics                                  | Niet ingepland                                  |           | I |
| 3MT010       | Advanced fluid dynamics                                  | Semester B Kwartiel 3                           | B         | K |
| 3MT020       | Micro- and nanofluidics                                  | Semester A Kwartiel 1                           | C         | I |
| 3MT100       | Chaos  | Semester B Kwartiel 3                           | D         | I |
| 3MT110       | Geophysical fluid dynamics                               | Semester B Kwartiel 4                           | B         | I |
| 3MT120       | Advanced Computational Fluid and Plasma Dynamics         | Semester B Kwartiel 3                           | E         | I |
| 3MT130       | Transport in porous media                                | Semester B Kwartiel 4                           | E         | R |
| 3MT140       | Experimental methods in transport physics                | Semester A Kwartiel 2                           | E         | I |
| 3MT150       | Environmental Fluid Mechanics                            | Semester A Kwartiel 1                           | D         | I |
| 3MT160       | Introduction to NMR/MRI for imaging and flow visualisati | Semester A Kwartiel 2                           | C         | I |
| 4AT010       | Powertrains  | Semester A Kwartiel 2                           | C         | K |
| 4AT020       | Future Fuels and Clean Engines                           | Semester B Kwartiel 4                           | C         | K |
| 4AT030       | Powertrains and drivetrains                              | Semester B Kwartiel 3                           | C         | I |
| 4AT040       | Modeling and control of diesel engines                   | Semester B Kwartiel 4                           | B         | R |
| 4AT100       | Project cars in context                                  | Semester B Kwartiel 3 t/m Semester B Kwartiel 4 | D - E     | I |
| 4BM10        | Hydraulic Turbomachines                                  | Semester B Kwartiel 3                           | A         | K |
| 4BM30        | Modelling combustion                                     | Semester A Kwartiel 2                           | D         | K |
| 4BM40        | Optical diagnostics for combustion and fluid flow        | Semester B Kwartiel 4                           | A         | K |
| 4BM50        | Introduction to petroleum production                     | Semester B Kwartiel 4                           | E         | K |
| 4DM20        | Optimisation   | Semester B Kwartiel 3                           | B         | I |
| 4EM10        | Gasdynamica  | Semester A Kwartiel 2                           | B         | I |
| 4EM20        | Energy conversion systems                                | Semester B Kwartiel 3                           | E         | I |
| 4EM30        | Scientific computing for mechanical engineering          | Semester B Kwartiel 3                           | B         | R |
| 4EM50        | Thermal energy storage                                   | Semester B Kwartiel 3                           | D         | R |
| 4RM00        | Introduction to computational fluid dynamics             | Semester B Kwartiel 3                           | B         | K |
| 4SE000       | Sustainable energy sources                               | Semester A Kwartiel 2                           | A         | I |
| 6CPT10       | Advanced transport phenomena                             | Semester A Kwartiel 1                           | D         | R |
| 6CPT20       | Catalysis science and technology                         | Semester A Kwartiel 2                           | E         | I |
| 6CPT30       | Advanced chemical reactor engineering                    | Semester B Kwartiel 3                           | A         | I |
| 6CPT40       | Advanced separation technology                           | Semester B Kwartiel 4                           | A         | I |
| 6EMA01       | Micro flow chemistry and process technology              | Semester A Kwartiel 1                           | A         | I |
| 6EMA02       | Particle-based simulations                               | Semester A Kwartiel 1                           | B         | I |
| 6EMA04       | Process optimization                                     | Semester B Kwartiel 3                           | B1        | I |
| 6EMA05       | Multiphase reactor modeling                              | Semester B Kwartiel 4                           | D         | R |
| 6EMA06       | Advanced process design                                  | Semester B Kwartiel 4                           | B         | I |
| 6EMAC2       | Modern concepts in catalysis                             | Niet ingepland                                  |           | I |
| 7LL1M0       | Sports and building aerodynamics                         | Semester A Kwartiel 2                           | A         | I |
| 7LS3M0       | Sustainable buildings/ physical aspects of building mate | Semester A Kwartiel 1                           | A         | I |
| 7LS4M0       | Computational modeling for building physics and system   | Semester A Kwartiel 1                           |           | I |
| 7LS4M0       | Computational modeling for building physics and system   | Semester B Kwartiel 4                           |           | I |
| 7LS6M0       | Heat, air & moisture transfer/CFD2                       | Semester B Kwartiel 4                           | E         | I |
| 7LS9M0       | Heat, air & moisture transfer/CFD1                       | Semester B Kwartiel 3                           | C         | I |
| 7LY3M0       | Building performance and energy systems simulation       | Semester A Kwartiel 1                           | C         | I |
| 7LY4M0       | Building services and fire safety                        | Semester B Kwartiel 4                           | B         | I |
| 8VM00        | Cardiovasculaire stromingsleer                           | Semester A Kwartiel 1                           | B         | I |
| 8VM40        | Cardiovasculaire vaste stof - vloeistof interactie       | Semester B Kwartiel 4                           | D         | I |

**Last column:**

K = Key

R = Recommended

I = Interesting

# Polymer Technology

| Subject Code | Subject Name   | Class Planning                                  | Time Slot |   |
|--------------|--|---|-----------|---|
| 0LM180       | Model-based Science: Principles and Practice                     | Semester A Kwartiel 1                           | C         | I |
| 2DMN00       | Design and analysis of experiments                               | Semester B Kwartiel 3                           | D         | I |
| 2MMA20       | Partial differential equations                                   | Semester B Kwartiel 3                           | D         | I |
| 2MMA50       | Advances in continuum modeling                                   | Semester B Kwartiel 3                           |           | I |
| 2MMA60       | Introduction to homogenization                                   | Semester A Kwartiel 1                           | C         | I |
| 2MMH30       | Analysis and scientific computing                                | Semester A Kwartiel 1 t/m Semester B Kwartiel 4 |           | I |
| 2MMN10       | Scientific computing   | Semester A Kwartiel 1                           | E         | I |
| 2MMN20       | Scientific programming   | Semester A Kwartiel 2                           | D         | I |
| 2MMN30       | Scientific computing in partial differential equations           | Semester B Kwartiel 4                           | C         | I |
| 3MT010       | Advanced fluid dynamics  | Semester B Kwartiel 3                           | B         | I |
| 3MT020       | Micro- and nanofluidics  | Semester A Kwartiel 1                           | C         | I |
| 3MT140       | Experimental methods in transport physics                        | Semester A Kwartiel 2                           | E         | I |
| 3MT150       | Environmental Fluid Mechanics                                    | Semester A Kwartiel 1                           | D         | I |
| 4BM00        | Advanced engineering mathematics                                 | Semester A Kwartiel 1                           | E         | R |
| 4BM20        | Experimentation for Mechanical Engineering                       | Semester A Kwartiel 2                           | E         | R |
| 4BM60        | Interfacial Transport in Engineering Flows                       | Semester A Kwartiel 1                           |           | R |
| 4CM40        | Physical modelling   | Semester B Kwartiel 3                           | D         | I |
| 4CM50        | Applications of design principles                                | Semester B Kwartiel 4                           | D         | I |
| 4DM20        | Optimisation   | Semester B Kwartiel 3                           | B         | I |
| 4EM30        | Scientific computing for mechanical engineering                  | Semester B Kwartiel 3                           | B         | R |
| 4EM60        | Advanced discretization techniques                               | Semester B Kwartiel 4                           | B         | I |
| 4LM10        | Polymer components in high performance applications              | Semester A Kwartiel 1                           |           | K |
| 4LM20        | Polymer processing   | Semester A Kwartiel 2                           | C         | K |
| 4LM30        | Multiscale modelling for polymer mechanics                       | Semester B Kwartiel 3                           | C         | K |
| 4LM40        | Structural integrity and reliability                             | Semester B Kwartiel 4                           | C         | K |
| 4LM50        | Rheology   | Semester B Kwartiel 4                           |           | K |
| 4MM00        | Composite and light-weight materials: design and analysis        | Semester A Kwartiel 1                           | A         | R |
| 4MM10        | Advanced computational continuum mechanics                       | Semester A Kwartiel 2                           | A         | R |
| 4MM20        | Computational and experimental micro-mechanics                   | Semester A Kwartiel 2                           | D         | I |
| 4MM30        | Deformation and failure of materials                             | Semester B Kwartiel 4                           | B         | I |
| 4MM40        | Mechanics of micro-electronics                                   | Semester B Kwartiel 4                           | D         | I |
| 4UM00        | Microfabrication methods   | Semester A Kwartiel 1                           | B         | I |
| 6EMA51       | Characterization of materials                                    | Semester A Kwartiel 1                           | B         | I |
| 6MSM40       | Mechanical and functional properties of materials                | Semester B Kwartiel 4                           | E         | I |
| 6MSM30       | Polymer science  | Semester B Kwartiel 3                           | D         | I |
| 7KP6M0       | Energy and finite elements methods                               | Semester B Kwartiel 3                           | E         | I |
| 7KT7M0       | Finite element method, non-linear                                | Semester A Kwartiel 1                           | B         | I |
| 7LY6M0       | Materials panorama: design, functionality, environmental aspects | Semester B Kwartiel 4                           | B         | I |
| 8MM30        | Numerieke analyse van continua II                                | Semester B Kwartiel 3                           | D         | I |
| 8VM40        | Cardiovasculaire vaste stof - vloeistof interactie               | Semester B Kwartiel 4                           | D         | I |
| 8VM00        | Cardiovasculaire stromingsleer                                   | Semester A Kwartiel 1                           | B         | I |

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