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| Student name |  | e-mail |  |
| Student number |  |  |  |

**OBLIGATORY COURSES**

|  |  |  |
| --- | --- | --- |
| Course code | Course name | EC |
| RO47001 | Dynamics & Control (Q1) | 5 |
| RO47002 | Machine Learning for Robotics (Q1) | 5 |
| RO47003 | Robot Software Practicals (Q1) | 5 |
| RO47004 | Machine Perception (Q2) | 5 |
| RO47005 | Planning & Decision Making (Q2) | 5 |
| RO47006 | Human Robot Interaction (Q2) | 5 |
| RO47007 | Multidisciplinary Project (Q4) | 5 |
| RO47009 | Robot & Society (Q3) | 4 |
| RO47010 | Student Portfolio | 1 |
|  | **Total** | **40** |

**RECOMMENDED ELECTIVE COURSES** **ON ROBOTICS** Choose at least 5 EC

|  |  |  |
| --- | --- | --- |
| Course code | Course name | EC |
| CS4240 | Deep Learning (Q3) | 5 |
| RO47013 | Control in Human-Robot Interaction (Q3) | 5 |
| RO47014 | Knowledge Representation & Symbolic Reasoning (Q3) | 5 |
| RO47015 | Applied Experimental Methods (Q4) | 5 |
| RO47016 | Automotive Human Factors (Q4) | 5 |
| RO47017 | Vehicle Dynamics & Control (Q4) | 5 |
| RO47018 | Security and Privacy in Control (Q4) | 3 |
|  | **Total** |  |

**RECOMMENDED ELECTIVE COURSES ON TRANSFERABLE SKILLS** Choose between 3 and 6 EC  
*It is permitted to select courses outside this list. Please look in the TU Delft study guide for MSc courses on logistics, cultural differences, regulations, production processes, sustainability, design, economy/business, (project) management, consultancy, or organisations. Courses about language, presentation skills, writing skills, or research skills are not permitted. BSc courses and Minor courses are not permitted either. Please check the eligibility criteria and enrolment opportunities yourself. Beware, for Industrial Design (ID) courses, you will have to apply early at the faculty. Also, some faculties require registration to the courses.*

|  |  |  |
| --- | --- | --- |
| Course code | Course name | EC |
| AE4321-15 | Air Traffic Management (Q2–Q3) | 4 |
| CIE4811-18 | Planning and Operations of Public Transport Systems (Q1) | 6 |
| CIE5805-18 | Intelligent Vehicles for Safe and Efficient Traffic: Design and Assessment (Q4) | 4 |
| EPA1223 | Macro-Economics for Policy Analyses (Q4) | 5 |
| EPA1434 | Intercultural Relations and Project Management (Q2) | 5 |
| ET4247 | HighTech Start Ups (Q2) | 5 |
| ID4180 | Managing Product Innovation (Q1) | 3 |
| ID4185 | Strategic & Sustainable Design (Q4) | 3 |
| ID5311-19 | Design Innovation 4.0 in Supply Networks (Q1–Q2) | 6 |
| MT44070 | Shipping Management (Q3) | 5 |
| SEN9115 | Participatory Systems (Q2) | 5 |
| SPM9730 | Sustainable Innovation and Transitions (Q1) | 3 |
| TPM024A | Methods for Risk Analysis and Management (Q4) | 5 |
| TPM027A | Cyber Risk Management (Q1) | 5 |
| TPM416A | Turning Technology into Business (Q2) | 6 |
| TPM420A | Ready to Startup (Q1–Q2 & Q3–Q4) | 6 |
| WI4425 | Financial Markets Theory (Q3–Q4) | 6 |
| WM0329TU | Ethics and Engineering (Q1, Q3) | 6 |
| WM0376TU | Ethics of Technological Risks (Q3) | 5 |
| WM0637SET | Economic Policy for Sustainable Energy (Q3) | 4 |
| WM0801TU | Introduction to Safety Science (Q2) | 3 |
| WM1302TU | Ethics of Transportation (Q3) | 5 |
|  |  |  |
|  | **Total** |  |

**15 EC OF THE 2nd YEAR**

|  |  |  |
| --- | --- | --- |
| Code | Course name | EC |
| TU4040 | Joint Interdisciplinary Project | 15 |
| RO57015 | RO Internship / Research Assignment | 15 |
| \* | Elective Courses (15 EC) | 15 |
|  | **Total** | **15** |

*\*Tick this box if you used 15 or more EC in electives as a replacement for the Joint Interdisciplinary Project or Internship / Research Assignment.*

**GENERAL ELECTIVE COURSES**

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| Course code | Course name | EC |
| AE4301 | Automatic Flight Control System Design (Q1) | 3 |
| AE4316 | Aerospace Human-Machine Systems (Q2) | 4 |
| AE4317 | Autonomous Flight of Micro Air Vehicles (Q3) | 4 |
| BM41040 | Neuromechanics and Motor Control (Q3–Q4) | 5 |
| CIE4825 | Traffic Flow Modelling and Control Part 1 (Q2) | 6 |
| CIE5805-18 | Intelligent Vehicles for Safe and Efficient Traffic: Design and Assessment (Q4) | 4 |
| CS4205 | Evolutionary Algorithms (Q4) | 5 |
| CS4235 | Socio-Cognitive Engineering (Q3) | 5 |
| CS4245 | Seminar Computer Vision by Deep Learning (Q4) | 5 |
| CS4295 | Release Engineering for Machine Learning Applications (Q4) | 5 |
| ET4117 | Electrical Machines and Drives (Q2) | 4 |
| ET4169 | Radar I: From Basic Principles to Applications (Q3) | 5 |
| ET4257 | Sensors and Actuators (Q2) | 4 |
| IN4010-12 | Artificial Intelligence Techniques (Q1–Q2) | 6 |
| IN4343 | Real-time Systems (Q3) | 5 |
| ME41005 | Musculoskeletal Modelling and Simulation (Q4) | 3 |
| ME41055 | Multibody Dynamics B (Q3–Q4) | 4 |
| ME41065 | System Identification and Parameter Estimation (Q1–Q2) | 7 |
| ME41085 | Biomechatronics (Q3-Q4) | 4 |
| ME41095 | Bio Inspired Design (Q1–Q2) | 4 |
| ME41125 | Introduction to Engineering Research (Q4) | 3 |
| ME44206 | Quantitative Methods for Logistics (Q1–Q2) | 5 |
| ME44312 | Machine Learning for Transport and Multi-Machine Systems (Q4) | 3 |
| ME46041 | Experimental Dynamics (Q3-Q4) | 4 |
| ME46055 | Engineering Dynamics (Q1) | 4 |
| ME46060 | Engineering Optimization: Concepts and Applications (Q4) | 3 |
| SC42045 | Control Systems Lab (Q3) | 4 |
| SC42050 | Intelligent Control Systems (Q3) | 4 |
| SC42075 | Modelling and Control of Hybrid Systems (Q4) | 3 |
| SC42100 | Networked and Distributed Control Systems (Q4) | 3 |
| SC42110 | Dynamic Programming and Stochastic Control (Q4) | 5 |
| SC42125 | Model Predictive Control (Q3) | 4 |
| WI4062TU | Transport, Routing and Scheduling Problems (Q3) | 3 |
| WI4156(TU) | Game Theory (Q1–Q2) | 6 |
| WI4525TU | Monte Carlo simulation and Stochastic Processes (Q1–Q2) | 5 |
| WI4771TU | Object Oriented Scientific Programming C++ (Q2) | 3 |
|  | **Total** |  |

**FREE ELECTIVE COURSES**

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| Course code | Course name | EC |
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|  | **Total** |  |

For the **FREE ELECTIVE COURSES**, please briefly explain your choice

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| --- | --- |
| Course code | Motivation |
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**RO GRADUATION PROJECT**

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| Code | Course name | EC |
| RO57010-20 | RO Literature Research | 10 |
| RO57035 | RO MSc Thesis | 35 |
|  | **Total** | **45** |

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| --- | --- |
| **Total of study program** |  |

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| --- | --- | --- |
| Signature Track Coordinator  Date: | Signature Student  Date: | On behalf of the Examination Board  Date: |