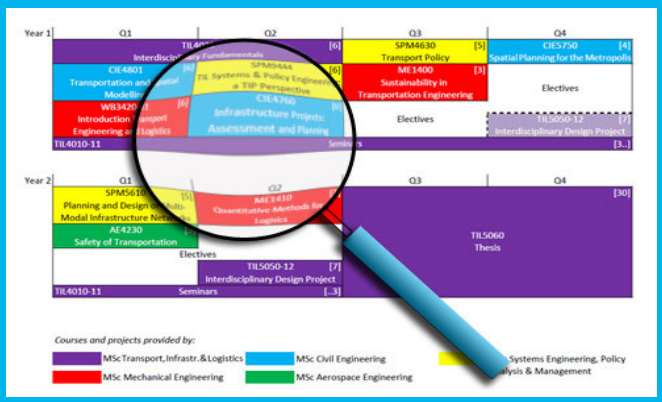
MSc Transport, Infrastructure and Logistics

Programme Navigator 2020



TU Delft Delft University of Technology

Challenge the future

Content

Student information

Programme til.tudelft.nl	*Student Portal* student.tudelft.nl	*Lecturers* phonebook.tudelft.nl
Courses studyguide.tudelft.nl	*Digital Learning Environment* brightspace.tudelft.nl	*Schedules* mytimetable.tudelft.nl
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Location information

Technische Universiteit Delft

Delft University of Technology

MSc Programme
Transport, Infrastructure and Logistics

is an interfaculty programme of:

Faculty of Civil Engineering and Geosciences	Faculty of Technology, Policy and Management	Faculty of Mechanical, Maritime and Materials Engineering
Building 23 Stevinweg 1 2628 CN Delft	Building 31 Jaffalaan 5 2628 BX Delft	Building 34 Mekelweg 2 2628 CD Delft
Department Transport and Planning	Department Engineering Systems and Services Section Transport and Logistics	Department Maritime and Transport Technology Section Transport Engineering and Logistics
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Overview

MSc Transport, Infrastructure and Logistics 2020 *(120 EC)*

Courses *(75 EC)*

1 Fundamentals *(23 EC)*

TIL4030-20	TIL Research and Design Methods
CIE4801-18	Transport Modelling
SEN1221	Statistical Analysis of Choice Behaviour
ME44206	Quantitative Methods for Logistics

2 Specialisations *(27 EC) (1 specialisation)*

2.1 Specialisation P - Policy: Infrastructure, Planning and Environment *(27 EC)*

CIE5816	Urban Regions, Transport and Economics
CIE5817	Assessment of Transport Infrastructure and Systems
SEN171a	Advanced Evaluation Methods for Transport Policy Decision-making
SEN1741	Innovations in Transport and Logistics
AR0093	Infrastructure and Environment Method Module
AR0191	Urban Sustainability
AR0551	People, Movement and Public Space

2.2 Specialisation D - Design: Transport Systems and Networks *(27 EC)*

CIE5802-18	Advanced Transportation Modelling
CIE5826	Railway Operations and Control
CIE4811-18	Planning and Operations of Public Transport Systems
SEN1721	Travel Behaviour Research
AE4423-20	Airline Planning and Optimization
AE4426	Airport Operations

2.3 Specialisation O - Operations: Traffic, Technology and Control *(27 EC)*

CIE4825	Traffic Flow Modelling and Control Part 1
CIE5821	Traffic Flow Modelling and Control Part 2
CIE5805-18	Intelligent Vehicles for Safe and Efficient Traffic: Design and Assessment
SEN9110	Simulation Master Class
ME44200	Operations and Maintenance
ME44305	System Analysis and Simulation

2.4 Specialisation E - Engineering: Transport, Logistics and Supply Chains *(27 EC)*

CIE5830	Freight Transport Systems: Analysis and Modelling
SEN9710	Decision Making in Multimodal Transport Systems
SEN9720	Logistics and Supply Chain Innovations
ME44101	Dynamics and Interaction of Material and Equipment
ME44300	Multi-Machine Coordination for Logistics
ME44311	Advanced Operations Management

3 Electives *(25 EC)*

3.1 Electives T&P - Transport and Planning *(at least 1 course)*

CIE4811-18	Planning and Operations of Public Transport Systems
CIE4825	Traffic Flow Modelling and Control Part 1
CIE4831-18	Empirical Analysis for Transport and Planning
CIE4845	Emerging Topics for Transport & Planning
CIE5802-18	Advanced Transportation Modelling
CIE5803-18	Railway Traffic Management
CIE5805-18	Intelligent Vehicles for Safe and Efficient Traffic: Design and Assessment
CIE5810-19	Traffic Safety
CIE5815	Resilient Transport Systems: Analysis and Interventions
CIE5816	Urban Regions, Transport and Economics
CIE5817	Assessment of Transport Infrastructure and Systems
CIE5821	Traffic Flow Modelling and Control Part 2
CIE5822	Active modes: Traffic and Transport
CIE5825	Advanced Public Transport Modelling and Operations
CIE5826	Railway Operations and Control
CIE5830	Freight Transportation Systems: Analysis and Modelling

3.2 Electives T&L - Transport and Logistics *(at least 1 course)*

SEN1131	Institutional Economics for Design in Socio-technical Systems
SEN1151	Law and Institutions
SEN171a	Advanced Evaluation Methods for Transport Policy Decision-making
SEN1721	Travel Behaviour Research
SEN1741	Innovations in Transport and Logistics
SEN9110	Simulation Master Class
SEN9710	Decision Making in Multimodal Transport Systems
SEN9720	Logistics and Supply Chain Innovations
SEN9725	Supply Chain Gaming
TPM004a	Transport Safety

3.3 Electives MME - Multi-Machine Engineering *(at least 1 course)*

ME44101	Dynamics and Interaction of Material and Equipment
ME44105	Structural Design with FEM
ME44110	Integration Project Multi-Machine Systems
ME44115	Discrete Element Method (DEM) Simulation
ME44125	Reliability and Maintenance of Transport Equipment
ME44200	Operations and Maintenance
ME44300	Multi-Machine Coordination for Logistics
ME44305	System Analysis and Simulation
ME44311	Advanced Operations and Production Management
ME44312	Machine Learning for Transport and Multi-Machine Systems

3.4 External electives *(at least 1 course)*

3.4.1 Electives C&O - Control and Operations

AE4321-15	Air Traffic Management
AE4423-20	Airline Planning and Optimization
AE4446	Airport Operations

3.4.2 Electives U - Urbanism

AR0093	Infrastructure and Environment Method Module
AR0191	Urban Sustainability
AR0551	People, Movement and Public Space
AR3CS010	Workshop Cross Domain City of the Future
AR3CS020	Seminar Cross Domain City of the Future
AR8003TU	Legal and Governance

3.4.3 Electives TIL - Other TIL fields

CIE4330	Ports and Waterways 1
CIE4874	Elements of Railway Engineering
CIE5306	Ports and Waterways 2
CME2300	Financial Engineering
ME41105	Intelligent Vehicles
MT44070	Shipping Management
RO47016	Automotive Human Factors
WI4062TU	Transport, Routing and Scheduling
WM1301TU	Ethics of Transportation

3.5 Free electives *(optional)*

TIL6010	TIL Programming / Matlab
TIL6020	TIL Scientific Assignment
	Free electives

Projects and Thesis *(45 EC)*

4 Projects *(15 EC)*

TIL4020-20	TIL Research Project
TIL5050-20	TIL Design Project

5 Thesis *(30 EC)*

TIL5060	TIL Thesis

0 Programme

Category	*EC*
Courses	*75*
Fundamentals	23
Specialisations	27
Electives	25
Projects and Thesis	*45*
Projects	15
Thesis	30
Total	*120*

0 Programme

Courses **75**

Fundamentals **23**

TIL Research and Design Methods	7
Transport Modelling	6
Statistical Analysis of Choice Behaviour	5
Quantitative Methods for Logistics	5

Specialisations **27**

Policy		*Design*		*Operations*		*Engineering*	
Urban Regions, Transport and Economics	4	Advanced Transportation Modelling	4	Traffic Flow Modelling and Control Part 1	6	Freight Transport Systems: Analysis and Modelling	5
Assessment of Transport Infrastructure and Systems	4	Railway Operations and Control	6	Traffic Flow Modelling and Control Part 2	4	Logistics and Supply Chain Innovations	5
Adv. Evaluation Methods for Transp.Policy Decisionmaking	5	Planning and Operations of Public Transport Systems	4	Intelligent Vehicles for Safe and Efficient Traffic: Design and Assessment	4	Decision Making in Multi-modal Transport Systems	5
Innovations in Transport and Logistics	5	Travel Behaviour Research	5	Simulation Master Class	5	Dynamics and Interaction of Material and Equipment	4
Infrastructure and Environment Method Module	3	Airline Planning and Optimization	4	Operations and Maintenance	3	Multi-Machine Coordination for Logistics	3
People, Movement and Public Space	3	Airport Operations	4	System Analysis and Simulation	5	Advanced Operations and Production Management	5
Urban Sustainability	3						

Electives **25**

Transport & Planning	*Transport & Logistics*
Multi-Machine Engineering	*Control & Operations*
Urbanism	*Other TIL fields*
Free	

Projects and Thesis **45**

Projects **15**

TIL Research Project	5
TIL Design Project	10

Thesis **30**

TIL Thesis	30

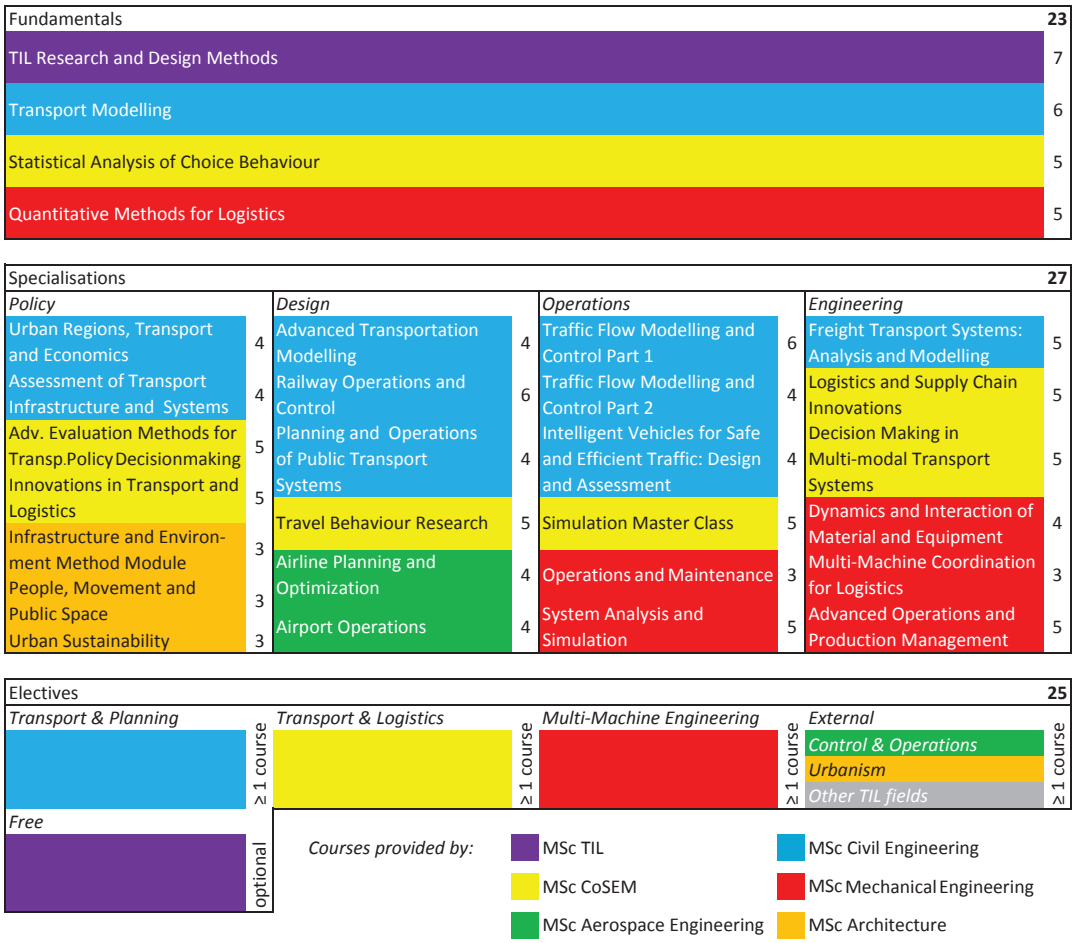
Courses and projects provided by:

- MSc Civil Engineering
- MSc CoSEM
- MSc Mechanical Engineering
- MScTIL
- MSc Aerospace Engineering
- MSc Architecture

1 2 3 Courses

Course type	*EC*
Fundamentals	23
Specialisations	27
Electives	25
Total	*75*

1 2 3 Courses

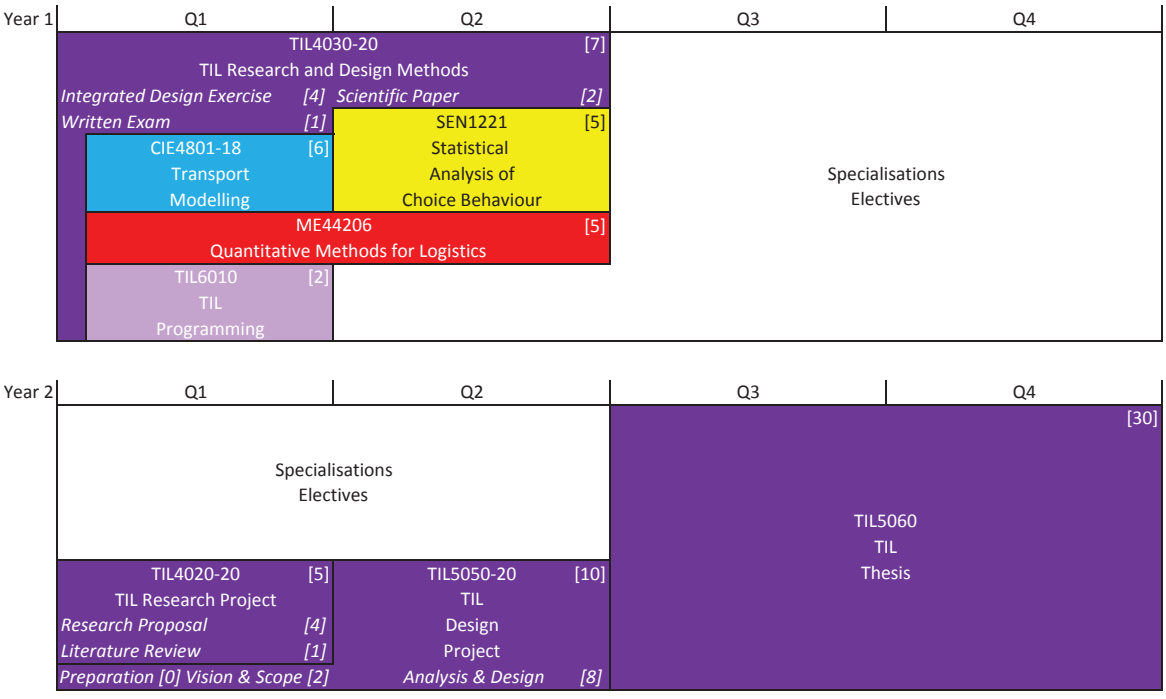


1 Fundamentals

	Course	*EC*
TIL4030-20	TIL Research and Design Methods	7
TIL4030-20 P1	*Integrated Design Exercise*	*4*
TIL4030-20 P2	*Written Exam*	*1*
TIL4030-20 P3	*Scientific Paper*	*2*
CIE4801-18	Transport Modelling	6
SEN1221	Statistical Analysis of Choice Behaviour	5
ME44206	Quantitative Methods for Logistics	5
	Total	*23*

Compulsory

1 Fundamentals



Courses and projects provided by:

TIL	MSc Transport, Infrastructure & Logistics
CIE	MSc Civil Engineering
SEN	MSc Complex Systems Engineering & Management
ME	MSc Mechanical Engineering
AE	MSc Aerospace Engineering
AR	MSc Architecture, Urbanism & Building Sciences

2 Specialisations

Specialisation P - Policy: Infrastructure, Planning and Environment *(27 EC)*
Specialisation D - Design: Transport Systems and Networks *(27 EC)*
Specialisation O - Operations: Traffic, Technology and Control *(27 EC)*
Specialisation E - Engineering: Transport, Logistics and Supply Chains *(27 EC)*

Choose 1 specialisation

2 Specialisations

Policy		*Design*		*Operations*		*Engineering*	
Urban Regions, Transport and Economics	4	Advanced Transportation Modelling	4	Traffic Flow Modelling and Control Part 1	6	Freight Transport Systems: Analysis and Modelling	5
Assessment of Transport Infrastructure and Systems	4	Railway Operations and Control	6	Traffic Flow Modelling and Control Part 2	4	Logistics and Supply Chain Innovations	5
Adv. Evaluation Methods for Transp.Policy Decisionmaking	5	Planing and Operations of Public Transport Systems	4	Intelligent Vehicles for Safe and Efficient Traffic: Design and Assessment	4	Decision Making in Multi-modal Transport Systems	5
Innovations in Transport and Logistics	5	Travel Behaviour Research	5	Simulation Master Class	5	Dynamics and Interaction of Material and Equipment	4
Infrastructure and Environ-ment Method Module	3	Airline Planning and Optimization	4	Operations and Maintenance	3	Multi-Machine Coordination for Logistics	3
People, Movement and Public Space	3	Airport Operations	4	System Analysis and Simulation	5	Advanced Operations and Production Management	5
Urban Sustainability	3						

Courses provided by:

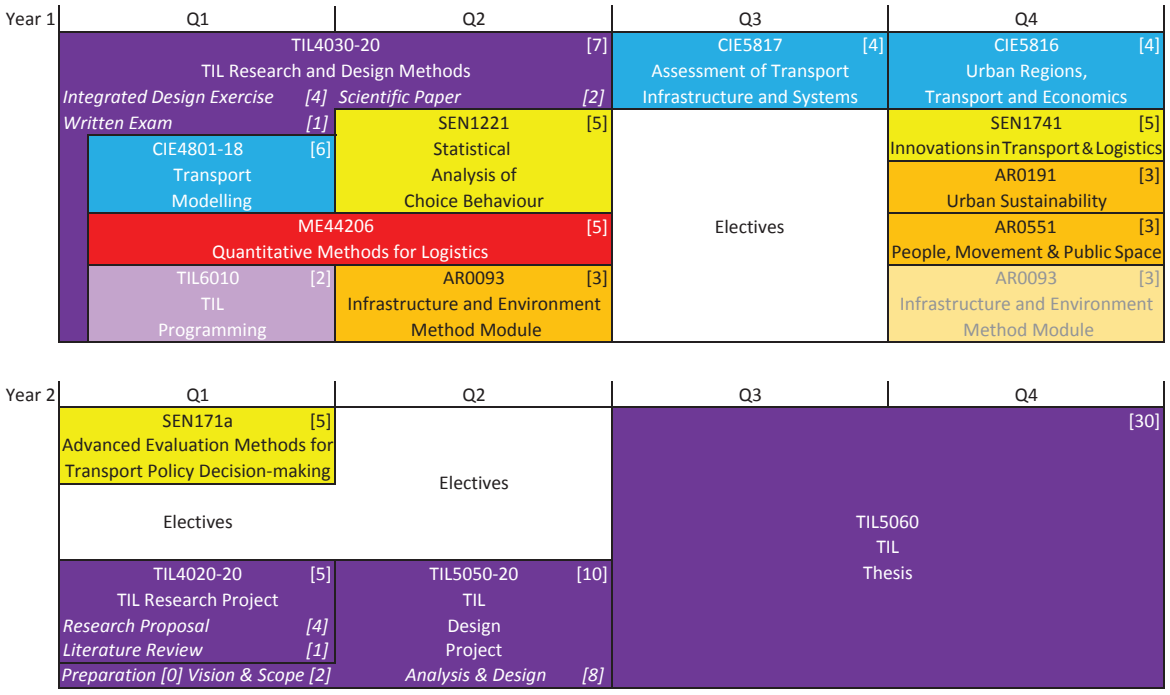
- MSc Civil Engineering
- MSc Complex Systems Engineering & Management
- MSc Mechanical Engineering
- MSc Aerospace Engineering
- MSc Architecture, Urbanism & Building Sciences

2.1 Specialisation P - Policy: Infrastructure, Planning & Environment

	Course	*EC*
CIE5816	Urban Regions, Transport and Economics	4
CIE5817	Assessment of Transport Infrastructure and Systems	4
SEN171a	Advanced Evaluation Methods for Transport Policy Decision-making	5
SEN1741	Innovations in Transport and Logistics	5
AR0093	Infrastructure and Environment Method Module	3
AR0191	Urban Sustainability	3
AR0551	People, Movement and Public Space	3
	Total	*27*

In a chosen specialisation all courses are compulsory

2.1 Specialisation P - Policy: Infrastructure, Planning & Environment



Courses and projects provided by:

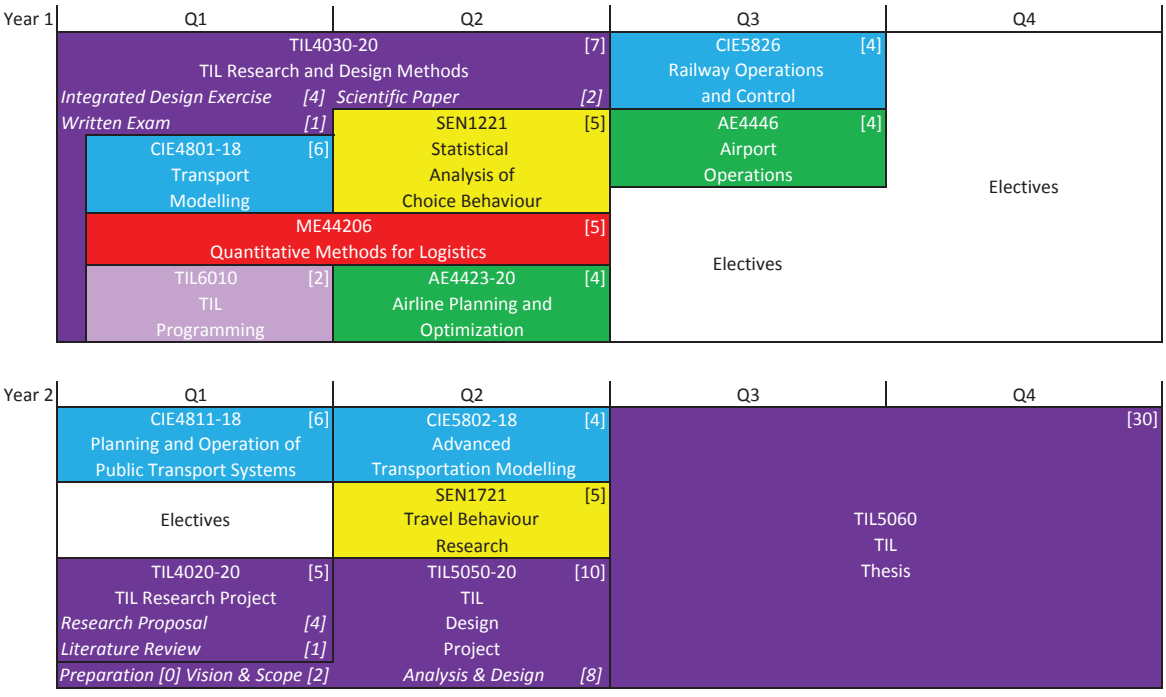
TIL	MSc Transport, Infrastructure & Logistics
CIE	MSc Civil Engineering
SEN	MSc Complex Systems Engineering & Management
ME	MSc Mechanical Engineering
AE	MSc Aerospace Engineering
AR	MSc Architecture, Urbanism & Building Sciences

2.2 Specialisation D - Design: Transport Systems & Networks

	Course	*EC*
CIE5802-18	Advanced Transportation Modelling	4
CIE5826	Railway Operations and Control	4
CIE4811-18	Planning and Operations of Public Transport Systems	6
SEN1721	Travel Behaviour Research	5
AE4423-20	Airline Planning and Optimization	4
AE4426	Airport Operations	4
	Total	*27*

In a chosen specialisation all courses are compulsory

2.2 Specialisation D - Design: Transport Systems & Networks



Courses and projects provided by:

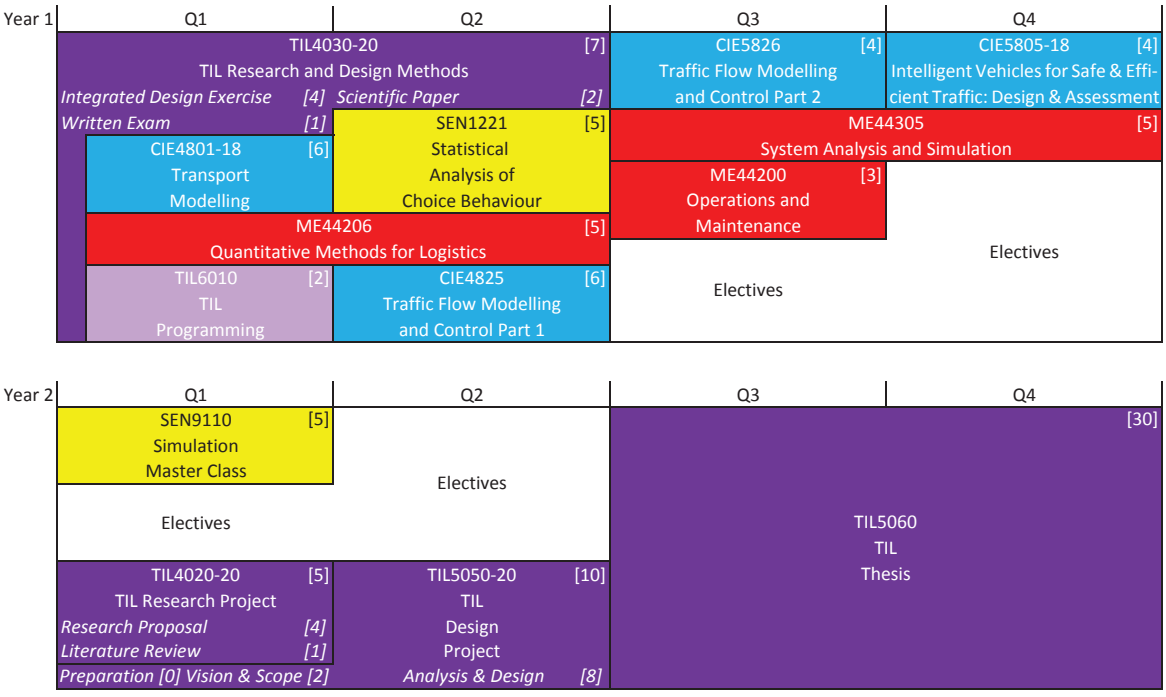
TIL	MSc Transport, Infrastructure & Logistics
CIE	MSc Civil Engineering
SEN	MSc Complex Systems Engineering & Management
ME	MSc Mechanical Engineering
AE	MSc Aerospace Engineering
AR	MSc Architecture, Urbanism & Building Sciences

2.3 Specialisation O - Operations: Traffic, Technology & Control

	Course	*EC*
CIE4825	Traffic Flow Modelling and Control Part 1	6
CIE5821	Traffic Flow Modelling and Control Part 2	4
CIE5805-18	Intelligent Vehicles for Safe and Efficient Traffic: Design and Assessment	4
SEN9110	Simulation Master Class	5
ME44200	Operations and Maintenance	3
ME44305	System Analysis and Simulation	5
	Total	*27*

In a chosen specialisation all courses are compulsory

2.3 Specialisation O - Operations: Traffic, Technology & Control



Courses and projects provided by:

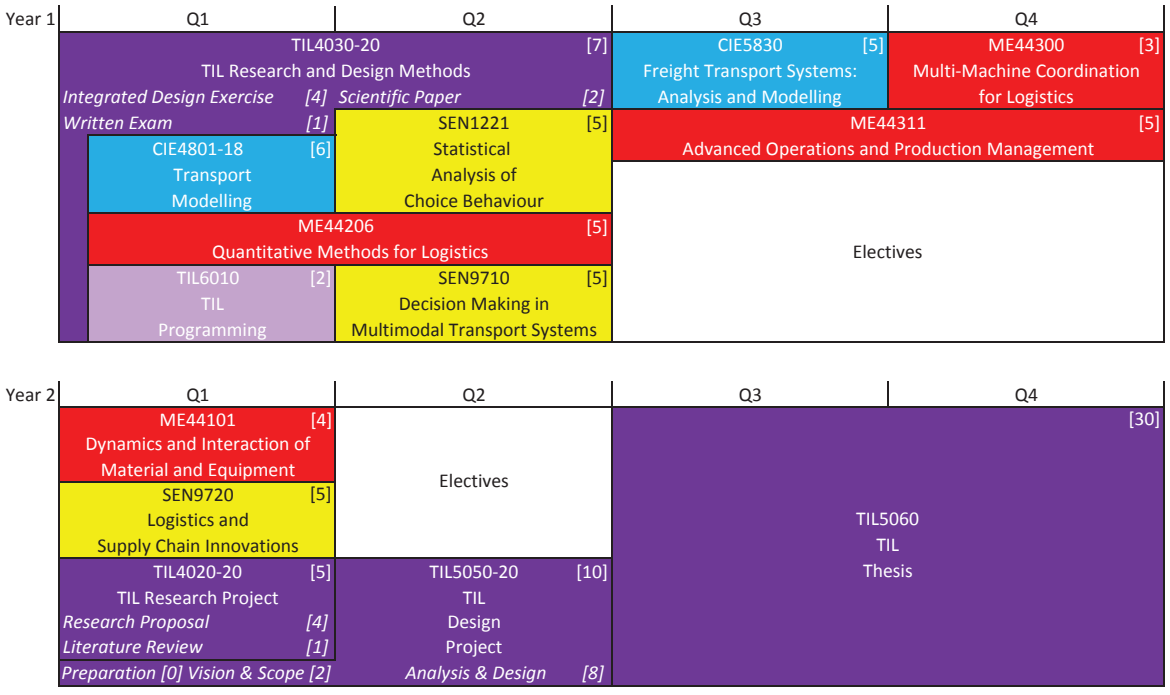
TIL	MSc Transport, Infrastructure & Logistics
CIE	MSc Civil Engineering
SEN	MSc Complex Systems Engineering & Management
ME	MSc Mechanical Engineering
AE	MSc Aerospace Engineering
AR	MSc Architecture, Urbanism & Building Sciences

2.4 Specialisation E - Engineering: Transport, Logistics & Supply Chains

	Course	*EC*
CIE5830	Freight Transport Systems: Analysis and Modelling	5
SEN9710	Decision Making in Multimodal Transport Systems	5
SEN9720	Logistics and Supply Chain Innovations	5
ME44101	Dynamics and Interaction of Material and Equipment	4
ME44300	Multi-Machine Coordination for Logistics	3
ME44311	Advanced Operations Management	5
	Total	*27*

In a chosen specialisation all courses are compulsory

2.4 Specialisation E - Engineering: Transport, Logistics & Supply Chains



Courses and projects provided by:

TIL	MSc Transport, Infrastructure & Logistics
CIE	MSc Civil Engineering
SEN	MSc Complex Systems Engineering & Management
ME	MSc Mechanical Engineering
AE	MSc Aerospace Engineering
AR	MSc Architecture, Urbanism & Building Sciences

3 Electives

Electives T&P - Transport and Planning *(at least 1 course)*
Electives T&L - Transport and Logistics *(at least 1 course)*
Electives MME - Multi-Machine Engineering *(at least 1 course)*
External electives *(at least 1 course)*
- Electives C&O - Control and Operations
- Electives U - Urbanism
- Electives TIL - Other TIL fields

Free electives *(optional)*

3 Electives

Transport & Planning		*Transport & Logistics*		*Multi-Machine Engineering*			*External*		*Free*	
Planning and Operations of Public Transport Systems	6	Institutional Economics Design Socio-technical Systems	3	Dynamics and Interaction of Material and Equipment	4	*Control & Operations*	Airline Planning and Optimization	4	TIL Programming / Matlab	2
Traffic Flow Modelling and Control Part 1	6	Law and Institutions	5	Structural Design with FEM	4		Airport Operations	4	TIL Scientific Assignment	7
Empirical Analysis for Transport and Planning	6	Advanced Evaluation Methods for Transport	5	Integration Project Multi-Machine Systems	5		Air Traffic Management	4	Free electives	
Emerging Topics for Transport and Planning	4	Travel Behaviour Research	5	Discrete Element Method (DEM) Simulation	4	*Urbanism*	Infrastructure & Environment Method Module	3		
Advanced Transport Modelling	4	Innovations in Transport and Logistics	5	Reliability and Maintenance of Transport Equipment	3		Urban Sustainability	3		
Railway Traffic Management	4	Simulation Master Class	5	Operations and Maintenance	3		People, Movement and Public Space	3		
Intelligent Vehicles for Safe & Efficient Traffic	4	Decision Making in Multi-modal Transport Systems	5	Multi-Machine Coordination for Logistics	3		Workshop Cross Domain City of the Future	3		
Traffic Safety	4	Logistics and Supply Chain Innovations	5	System Analysis and Simulation	5		Seminar Cross Domain City of the Future	6		
Resilient Transport Systems	4	Supply Chain Gaming	5	Advanced Operations and Production Management	5		Legal and Governance	5		
Urban Regions, Transport and Economics	4	Transport Safety	4	Machine Learning for Transp. and Multi-Machine Systems	3	*Other TIL fields*	Ports and Waterways 1	4		
Assessment of Transport Infrastructure and Systems	4						Ports and Waterways 2	4		
Traffic Flow Modelling and Control Part 2	4						Elements of Railway Engineering	4		
Active modes: Traffic and Transport	4						Financial Engineering	4		
Advanced Public Transport Modelling and Operations	4						Intelligent Vehicles	4		
Railway Operations and Control	4						Automotive Human Factors	5		
Freight Transport Systems: Analysis and Modelling	5						Shipping Management	5		
							Transport, Routing and Scheduling	3		
							Ethics of Transportation	3		

Courses provided by:

- MSc Civil Engineering
- MSc Aerospace Engineering
- MSc CoSEM
- MSc Architecture
- MSc TIL
- MSc Mechanical Engineering
- Service Education

3.1 Electives T&P - Transport and Planning

	Course	*EC*
CIE4811-18	Planning and Operations of Public Transport Systems	6
CIE4825	Traffic Flow Modelling and Control Part 1	6
CIE4831-18	Empirical Analysis for Transport and Planning	6
CIE4845	Emerging Topics for Transport & Planning	4
CIE5802-18	Advanced Transportation Modelling	4
CIE5803-18	Railway Traffic Management	4
CIE5805-18	Intelligent Vehicles for Safe and Efficient Traffic: Design and Assessment	4
CIE5810-19	Traffic Safety	4
CIE5815	Resilient Transport Systems: Analysis and Interventions	4
CIE5816	Urban Regions, Transport and Economics	4
CIE5817	Assessment of Transport Infrastructure and Systems	4
CIE5821	Traffic Flow Modelling and Control Part 2	4
CIE5822	Active modes: Traffic and Transport	4
CIE5825	Advanced Public Transport Modelling and Operations	4
CIE5826	Railway Operations and Control	4
CIE5830	Freight Transportation Systems: Analysis and Modelling	5

Choose at least 1 course, not already chosen as part of specialisation

3.1 Electives T&P - Transport and Planning

Q1	Q2	Q3	Q4
(D) CIE4811-18 [6] Design and Control of Public Transport Systems	(O) CIE4825 [6] Traffic Flow Modelling and Control Part 1	CIE5815 [4] Resilient Transport Systems: Analysis and Interventions	CIE4845 [4] Emerging Topics for Transport and Planning
	CIE4831-18 [6] Empirical Analysis for Transport and Planning	(P) CIE5817 [4] Assessment of Transport Infrastructure and Systems	CIE5803-18 [4] Railway Traffic Management
	(D) CIE5802-18 [4] Advanced Transport Modelling	(O) CIE5821 [4] Traffic Flow Modelling and Control Part 2	(O) CIE5805-18 [4] Intelligent Vehicles for Safe & Efficient Traffic: Design & Assessment
	CIE5810-19 [4] Traffic Safety	CIE5822 [4] Active Modes: Traffic and Transport	(P) CIE5816 [4] Urban Regions, Transport and Economics
		CIE5825 [4] Advanced Public Transport Operations and Modelling	
		(D) CIE5826 [4] Railway Operations and Control	
		(E) CIE5830 [5] Freight Transport Systems: Analysis and Modelling	

Courses provided by:

CIE MSc Civil Engineering
Track Transport & Planning

(P) Course is part of Specialisation P - Policy: Infrastructure, Planning and Environment
(D) Course is part of Specialisation D - Design: Transport Systems and Networks
(O) Course is part of Specialisation O - Operations: Traffic, Technology and Control
(E) Course is part of Specialisation E - Engineering: Transport, Logistics and Supply Chains

3.2 Electives T&L - Transport and Logistics

	Course	*EC*
SEN1131	Institutional Economics for Design in Socio-technical Systems	3
SEN1151	Law and Institutions	5
SEN171a	Advanced Evaluation Methods for Transport Policy Decision-making	5
SEN1721	Travel Behaviour Research	5
SEN1741	Innovations in Transport and Logistics	5
SEN9110	Simulation Master Class	5
SEN9710	Decision Making in Multimodal Transport Systems	5
SEN9720	Logistics and Supply Chain Innovations	5
SEN9725	Supply Chain Gaming	5
TPM004a	Transport Safety	4

Choose at least 1 course, not already chosen as part of specialisation

3.2 Electives T&L - Transport and Logistics

Q1	Q2	Q3	Q4
SEN1131 [3] Institutional Economics for Design in Socio-technical Systems	(D) SEN1721 [5] Travel Behaviour Research	SEN1151 [5] Law and Institutions	(P) SEN1741 [5] Innovations in Transport and Logistics
(P) SEN171a [5] Advanced Evaluation Methods for Transport Decision-making	(E) SEN9710 [5] Decision Making in Multimodal Transport Systems		
(O) SEN9110 [5] Simulation Master Class	SEN9725 [5] Supply Chain Gaming		
(E) SEN9720 [5] Logistics and Supply Chain Innovations			
TPM004a [4] Transport Safety			

Courses provided by:

SEN MSc Systems Engineering, Policy Analysis and Management
Track Transport & Logistics

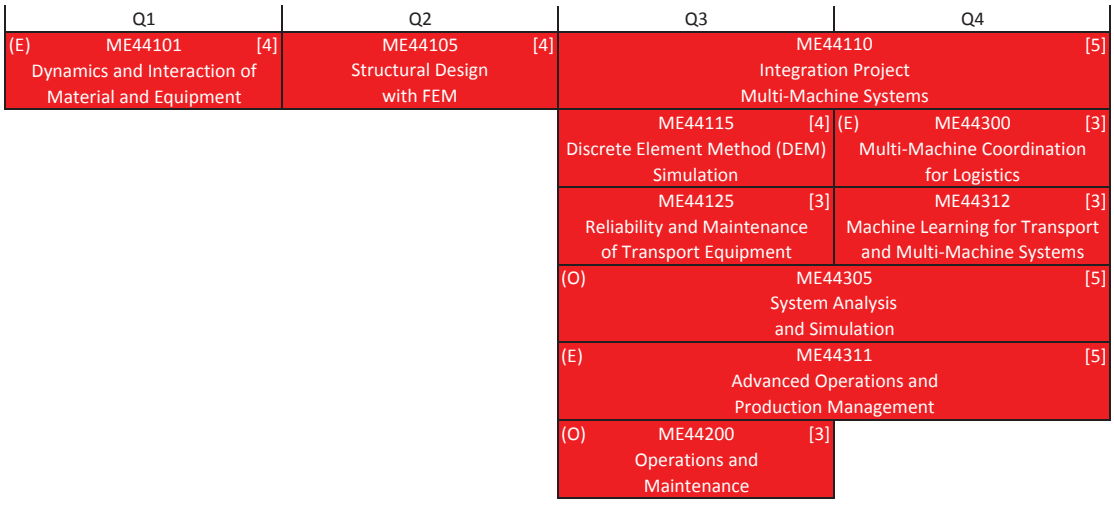
(P) Course is part of Specialisation P - Policy: Infrastructure, Planning and Environment
(D) Course is part of Specialisation D - Design: Transport Systems and Networks
(O) Course is part of Specialisation O - Operations: Traffic, Technology and Control
(E) Course is part of Specialisation E - Engineering: Transport, Logistics and Supply Chains

3.3 Electives MME - Multi-Machine Engineering

	Course	*EC*
ME44101	Dynamics and Interaction of Material and Equipment	4
ME44105	Structural Design with FEM	4
ME44110	Integration Project Multi-Machine Systems	5
ME44115	Discrete Element Method (DEM) Simulation	4
ME44125	Reliability and Maintenance of Transport Equipment	3
ME44200	Operations and Maintenance	3
ME44300	Multi-Machine Coordination for Logistics	3
ME44305	System Analysis and Simulation	5
ME44311	Advanced Operations and Production Management	5
ME44312	Machine Learning for Transport and Multi-Machine Systems	3

Choose at least 1 course, not already chosen as part of specialisation

3.3 Electives MME - Multi-Machine Engineering



Courses provided by:

ME MSc Mechanical Engineering
Track Multi-Machine Engineering

(P) Course is part of Specialisation P - Policy: Infrastructure, Planning and Environment
(D) Course is part of Specialisation D - Design: Transport Systems and Networks
(O) Course is part of Specialisation O - Operations: Traffic, Technology and Control
(E) Course is part of Specialisation E - Engineering: Transport, Logistics and Supply Chains

3.4 External electives

Electives C&O - Control and Operations
Electives U - Urbanism
Electives TIL - Other TIL fields

Choose at least 1 course, not already chosen as part of specialisation

3.4 External Electives

Q1	Q2	Q3	Q4
AR3CS010 [3] Workshop Cross Domain City of the Future		WI4062TU [3] Transport, Routing and Scheduling	(P) AR0191 [3] Urban Sustainability
AR3CS020 [6] Seminar Cross Domain City of the Future		WM1301TU [3] Ethics of Transportation	(P) AR0551 [3] People, Movement and Public Space
AR8003TU [5] Legal and Governance	(P) AR0093 [3] Infrastructure and Environment Method Module	MT44070 [5] Shipping Management	(P) AR0093 [3] Infrastructure and Environment Method Module
CME2300 [4] Financial Engineering	(D) AE4423-20 [4] Airline Planning and Optimization	(D) AE4446 [4] Airport Operations	RO47016 [5] Automotive Human Factors
CIE4330 [4] Ports and Waterways 1	AE4321-15 [4] Air Traffic Management		CIE5306 [4] Ports and Waterways 2
	CIE4874 [4] Elements of Railway Engineering		
	ME41105 [4] Intelligent Vehicles		

Courses provided by:

- MSc Aerospace Engineering, Track Control & Operations
- AR Electives
- CEG Electives
- 3mE Electives
- Service Education EWI / Interfaculty Education TPM

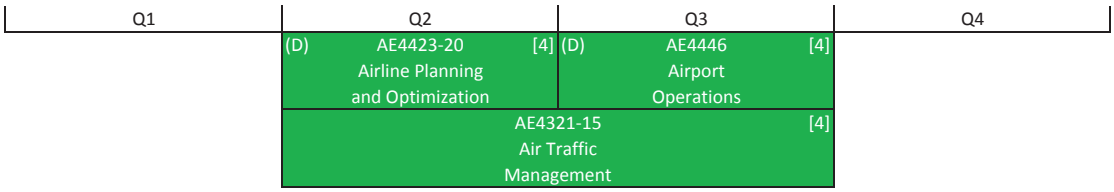
(P) Course is part of Specialisation P - Policy: Infrastructure, Planning and Environment
(D) Course is part of Specialisation D - Design: Transport Systems and Networks
(O) Course is part of Specialisation O - Operations: Traffic, Technology and Control
(E) Course is part of Specialisation E - Engineering: Transport, Logistics and Supply Chains

3.4.1 Electives C&O - Control and Operations

	Course	*EC*
AE4321-15	Air Traffic Management	4
AE4423-20	Airline Planning and Optimization	4
AE4446	Airport Operations	4

Choose at least 1 course, not already chosen as part of specialisation
Optional if at least 1 course of Electives U or TIL has been chosen

3.4.1 Electives C&O - Control and Operations



Courses provided by:

AE MSc Aerospace Engineering
Track Control & Operations

(P) Course is part of Specialisation P - Policy: Infrastructure, Planning and Environment
(D) Course is part of Specialisation D - Design: Transport Systems and Networks
(O) Course is part of Specialisation O - Operations: Traffic, Technology and Control
(E) Course is part of Specialisation E - Engineering: Transport, Logistics and Supply Chains

3.4.2 Electives U - Urbanism

	Course	*EC*
AR0093	Infrastructure and Environment Method Module	3
AR0191	Urban Sustainability	3
AR0551	People, Movement and Public Space	3
AR3CS010	Workshop Cross Domain City of the Future	3
AR3CS020	Seminar Cross Domain City of the Future	6
AR8003TU	Legal and Governance	5

Choose at least 1 course, not already chosen as part of specialisation
Optional if at least 1 course of Electives C&O or TIL has been chosen

3.4.2 Electives U - Urbanism

Q1	Q2	Q3	Q4
AR3CS010 [3] Workshop Cross Domain City of the Future			(P) AR0191 [3] Urban Sustainability
AR3CS020 [6] Seminar Cross Domain City of the Future			(P) AR0551 [3] People, Movement and Public Space
AR8003TU [5] Legal and Governance	(P) AR0093 [3] Infrastructure and Environment Method Module		(P) AR0093 [3] Infrastructure and Environment Method Module

Courses provided by:

AR MSc Architecture, Urbanism & Building Sciences
AR Electives

(P) Course is part of Specialisation P - Policy: Infrastructure, Planning and Environment
(D) Course is part of Specialisation D - Design: Transport Systems and Networks
(O) Course is part of Specialisation O - Operations: Traffic, Technology and Control
(E) Course is part of Specialisation E - Engineering: Transport, Logistics and Supply Chains

3.4.3 Electives TIL - Other TIL fields

	Course	*EC*
CIE4330	Ports and Waterways 1	4
CIE4874	Elements of Railway Engineering	4
CIE5306	Ports and Waterways 2	4
CME2300	Financial Engineering	4
ME41105	Intelligent Vehicles	4
MT44070	Shipping Management	5
RO47016	Automotive Human Factors	5
WI4062TU	Transport, Routing and Scheduling	3
WM1301TU	Ethics of Transportation	3

Choose at least 1 course, not already chosen as part of specialisation
Optional if at least 1 course of Electives C&O or U has been chosen

3.4.3 Electives TIL - Other TIL fields

Q1	Q2	Q3	Q4
CME2300 [4] Financial Engineering	ME41105 [4] Intelligent Vehicles	MT44070 [5] Shipping Management	RO47016 [5] Automotive Human Factors
CIE4330 [4] Ports and Waterways 1	CIE4874 [4] Elements of Railway Engineering	WI4062TU [3] Transport, Routing and Scheduling	CIE5306 [4] Ports and Waterways 2
		WM1301TU [3] Ethics of Transportation	

Courses provided by:

CEG Electives | 3mE Electives | Service Education EWI / Interfaculty Education TPM

(P) Course is part of Specialisation P - Policy: Infrastructure, Planning and Environment
(D) Course is part of Specialisation D - Design: Transport Systems and Networks
(O) Course is part of Specialisation O - Operations: Traffic, Technology and Control
(E) Course is part of Specialisation E - Engineering: Transport, Logistics and Supply Chains

3.5 Free electives

	Course	*EC*
TIL6010	TIL Programming / Matlab	2
TIL6020	TIL Scientific Assignment	7
	Free electives	

Optional

TU Delft
Technische Universiteit … Delft

3.5 Free electives

Q1	Q2	Q3	Q4
Free elective	Free elective	Free elective	Free elective
TIL6020 [7] TIL Scientific Assignment	TIL6020 [7] TIL Scientific Assignment	TIL6020 [7] TIL Scientific Assignment	TIL6020 [7] TIL Scientific Assignment
TIL6010 [2] TIL Programming / Matlab			

Courses provided by:

MSc Transport, Infrastructure and Logistics

Universiteit Leiden
Universiteit Leiden Leiden

Erasmus Universiteit … Rotterdam

Technische Universiteit … Eindhoven

Universiteit Twente Enschede

Wageningen University … Wageningen

Tilburg University Tilburg

Universiteit van Amster… Amsterdam

Vrije Universiteit … Amsterdam

Universiteit Utrecht Utrecht

Rijksuniver… Groningen Groningen

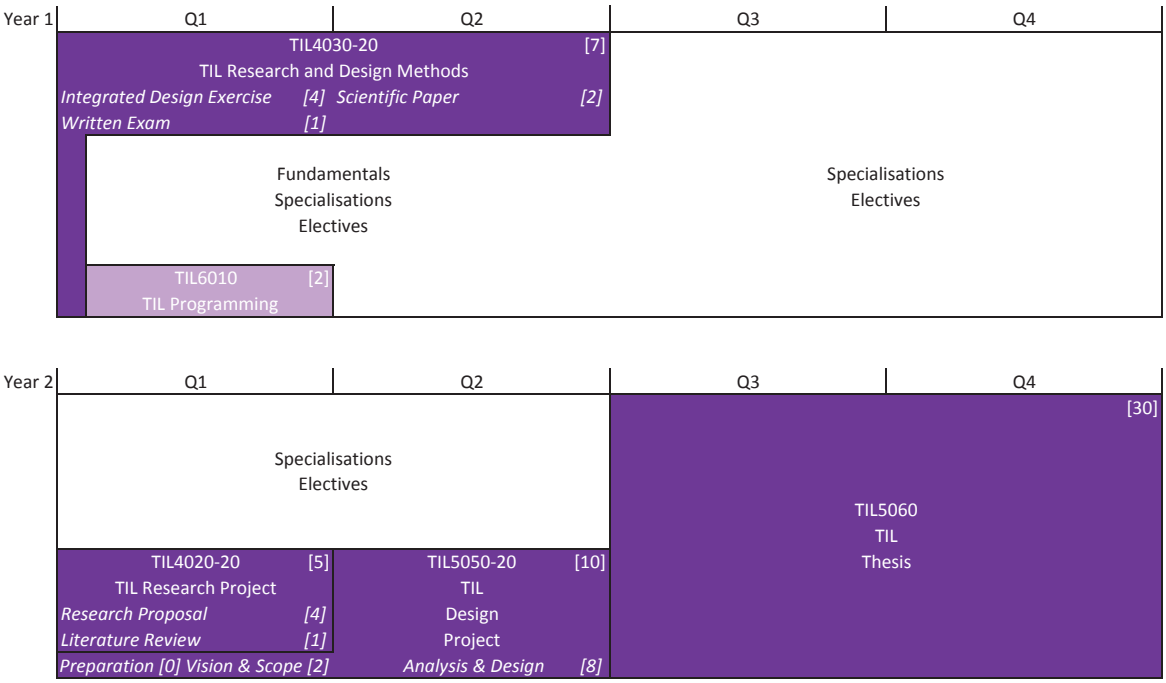
Radboud Universiteit Nijmegen

Maastricht University Maastricht

4 5 Projects and thesis

Project type	*EC*
Projects	15
Thesis	30
Total	*45*

4 5 Projects and Thesis



Courses and projects provided by:

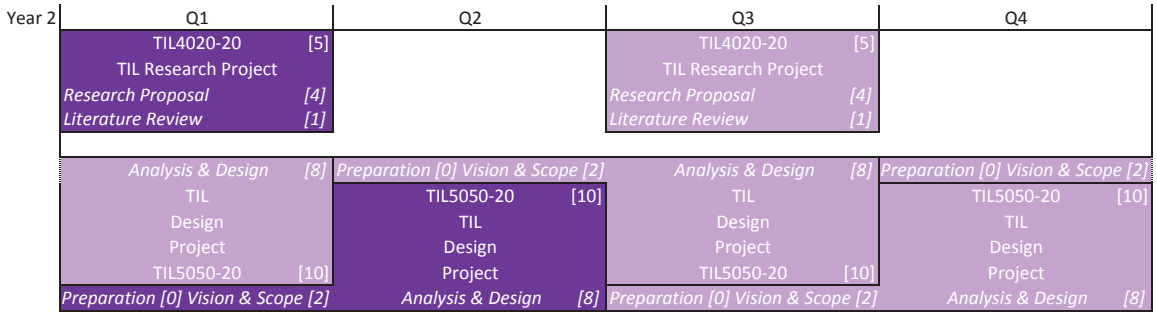
MSc Transport, Infrastructure and Logistics

4 Projects

	Project	*EC*
TIL4020-20	TIL Research Project	5
TIL4020-20 P1	*Research Proposal*	*4*
TIL4020-20 P2	*Literature Review*	*1*
TIL5050-20	TIL Design Project	10
TIL5050-20 P0	*Preparation*	*0*
TIL5050-20 P1	*Vision & Scope*	*2*
TIL5050-20 P2	*Analysis & Design*	*8*
	Total	*15*

Compulsory

4 Projects



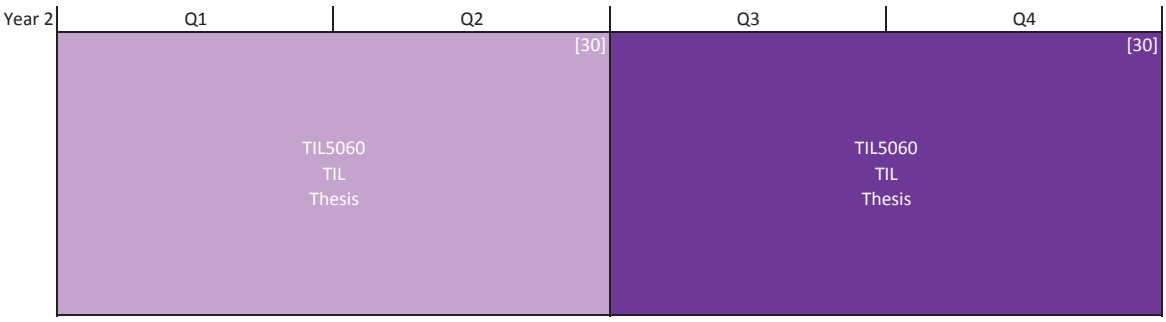
Projects provided by:

MSc Transport, Infrastructure and Logistics

5 Thesis

	Project	*EC*
TIL5060	TIL Thesis	30
	Compulsory	

5 Thesis



Projects provided by:

MSc Transport, Infrastructure and Logistics

Extras

A Honours Programme Master

	Course or project	*EC*
UD2010	Critical Reflection on Technology	5
TIL6020	TIL Scientific Assignment	7
	Thematically consistent set of Electives	8
	Total	*20*

Optional
20 EC on top of MSc programme

A Honours Programme Master

Q1	Q2	Q3	Q4
Electives	Electives	Electives	Electives
TIL6020 [7] TIL Scientific Assignment	TIL6020 [7] TIL Scientific Assignment	TIL6020 [7] TIL Scientific Assignment	TIL6020 [7] TIL Scientific Assignment
	UD2010 [5] Critical Reflection on Technology		UD2010 [5] Critical Reflection on Technology

Courses provided by:

Interfaculty Education TPM

MSc Transport, Infrastructure and Logistics

B Schakelprogramma HBO

	Vak	*EC*
WI1708TH1	Analyse 1	3
WI1708TH2	Analyse 2	3
WI1708TH3	Analyse 3	3
WI1807TH1	Lineaire Algebra 1	3
WI1807TH2	Lineaire Algebra 2	3
WI1909TH	Differentiaalvergelijkingen	3
WI2031TH	Kansrekening en Statistiek voor HBO-instromers	3
TB111b	Probleemanalyse	5
CTB1420-17	Transport & Planning	5
	Totaal	*31*

Verplicht of te ronden vóór aanvang MSc-opleiding

B Schakelprogramma HBO

Schakeljaar	Q1	Q2	Q3	Q4
	WI1708TH1 [3] Analyse 1	WI1708TH2 [3] Analyse 2	WI1708TH3 [3] Analyse 3	WI2031TH [3] Kansrekening en Statistiek voor HBO-instromers
	WI1807TH1 [3] Lineaire Algebra 1	WI1807TH2 [3] Lineaire Algebra 2		CTB1420-17 [5] Transport & Planning
	TB111b [5] Probleem-analyse	WI1909TH [3] Differentiaal-vergelijkingen		

Vak afkomstig uit:

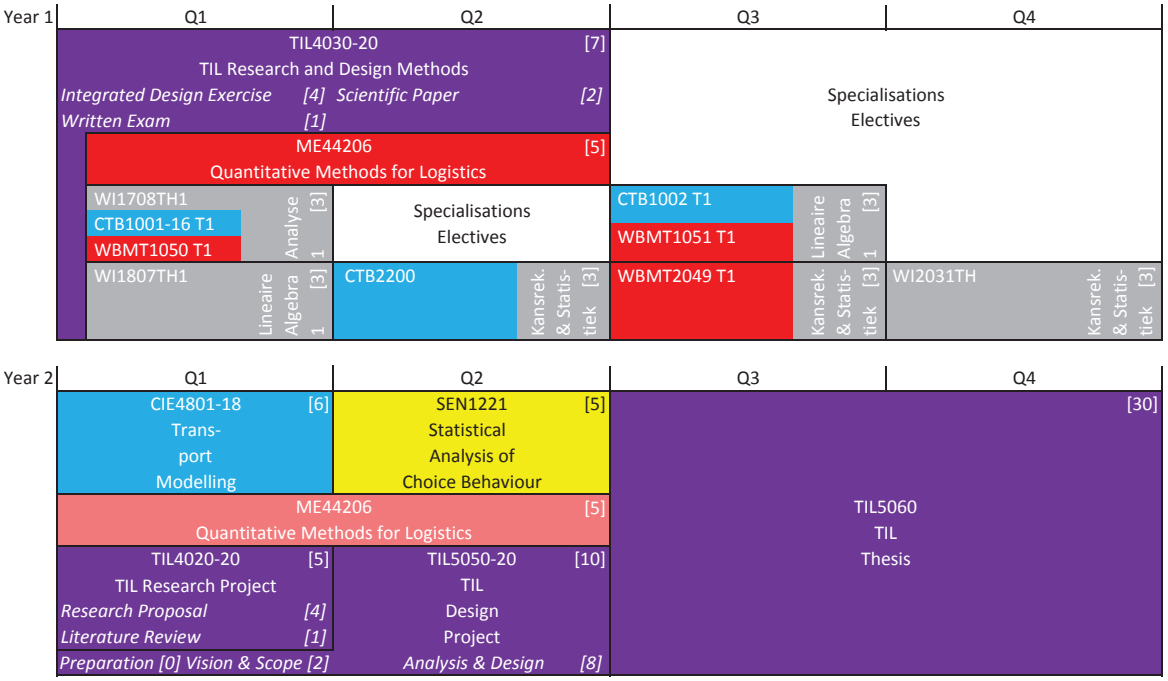
TH	Serviceonderwijs EWI
CTB	BSc Civiele Techniek
TB	BSc Technische Bestuurskunde

C Convergentieprogramma WO

	Vak	*Onderdeel*	*EC*
	Analyse		*(kies 1 vak)*
WI1708TH1	Analyse 1		3
CTB1001-16 Toets 1	Analyse	Analyse deeltentamen 1	3
WBMT1050 Toets 1	Wiskunde 1	Analyse 1 - deeltentamen	3
	ingangseis voor CIE4801-18 Transport Modelling		
	Lineaire Algebra		*(kies 1 vak)*
WI1807TH1	Lineaire Algebra 1		3
CTB1002 Toets 1	Lineaire Algebra	Toets 1	3
WBMT1051 Toets 1	Wiskunde 2	Lineaire Algebra 1 - deeltentamen	3
	ingangseis voor CIE4801-18 Transport Modelling		
	Kansrekening en Statistiek		*(kies 1 vak)*
WI2031TH	Kansrekening en Statistiek voor HBO-instromers		3
CTB2200	Kansrekening en Statistiek		3
WBMT2049 T1	Wiskunde 4	Kansrekening en Statistiek - deeltentamen	3
	ingangseis voor SEN1221 Statistical Analysis of Choice Behaviour		

Uit elke categorie 1 vak op te nemen als Free Elective in MSc-opleiding

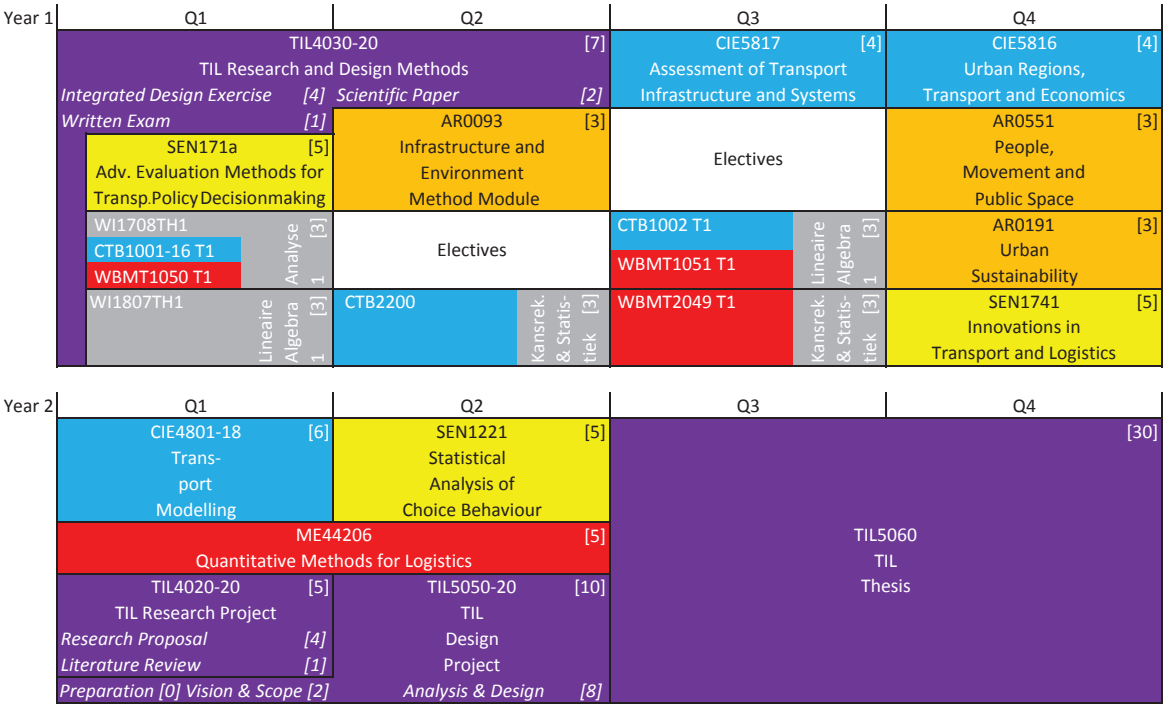
C Convergence Programme: Fundamentals



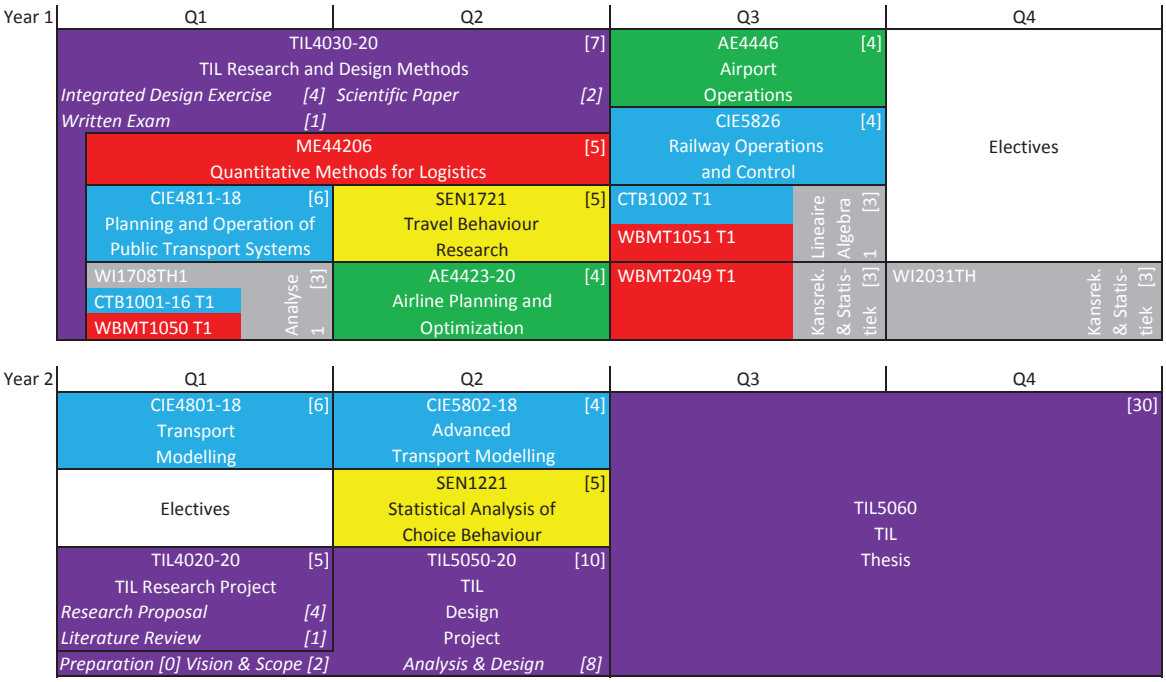
Courses and projects provided by:

TIL	MSc Transport, Infrastructure & Logistics
CIE	MSc Civil Engineering
SEN	MSc Complex Systems Engineering & Management
ME	MSc Mechanical Engineering
AE	MSc Aerospace Engineering
AR	MSc Architecture, Urbanism & Building Sciences
	Mathematics options for Convergence Programme

C.1 Convergence Programme: Specialisation P - Policy



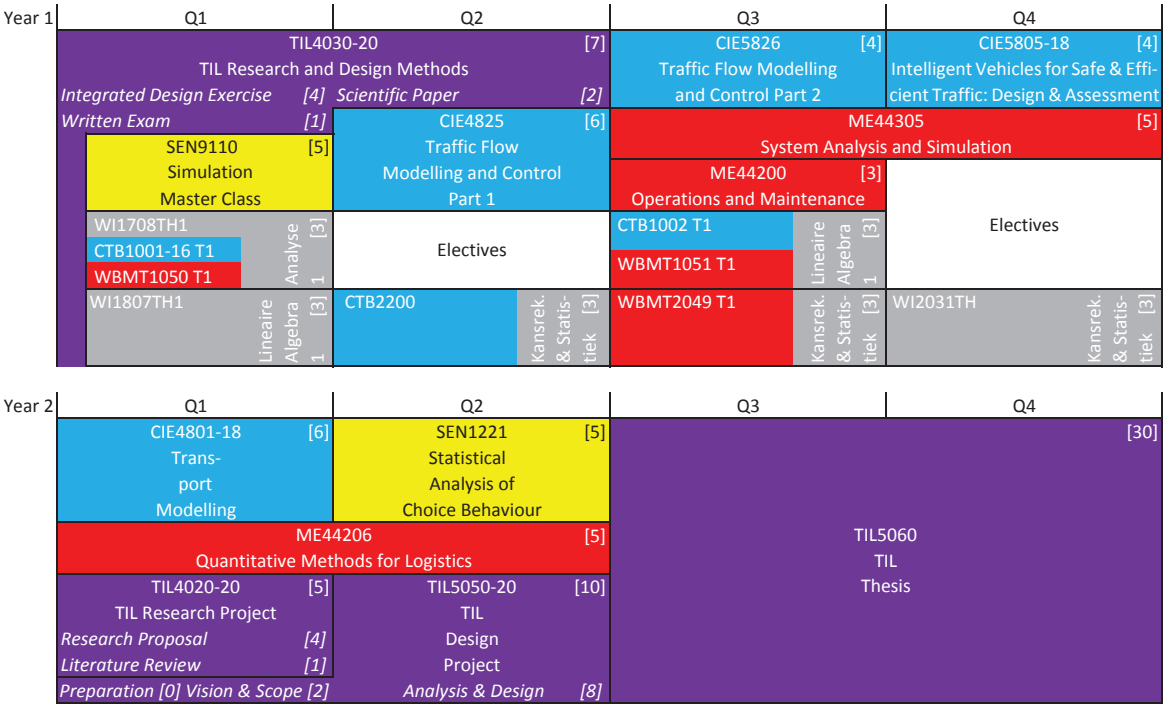
C.2 Convergence Programme: Specialisation D - Design



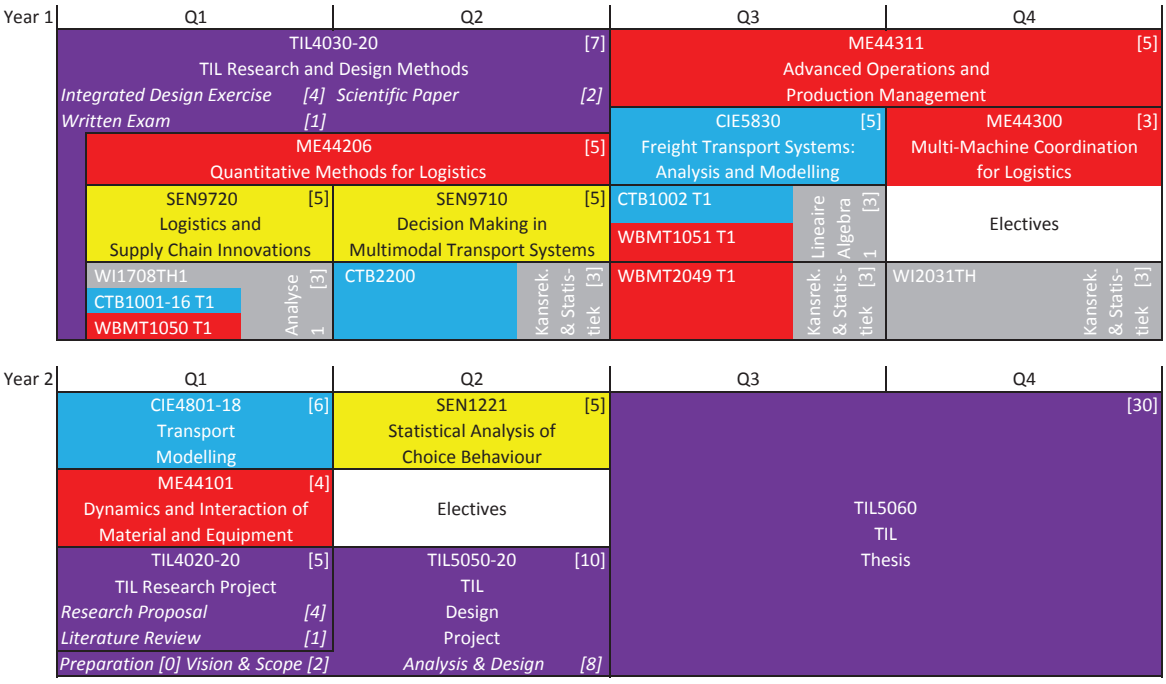
Courses and projects provided by:

TIL	MSc Transport, Infrastructure & Logistics
CIE	MSc Civil Engineering
SEN	MSc Complex Systems Engineering & Management
ME	MSc Mechanical Engineering
AE	MSc Aerospace Engineering
AR	MSc Architecture, Urbanism & Building Sciences
	Mathematics options for Convergence Programme

C.3 Convergence Programme: Specialisation O - Operations



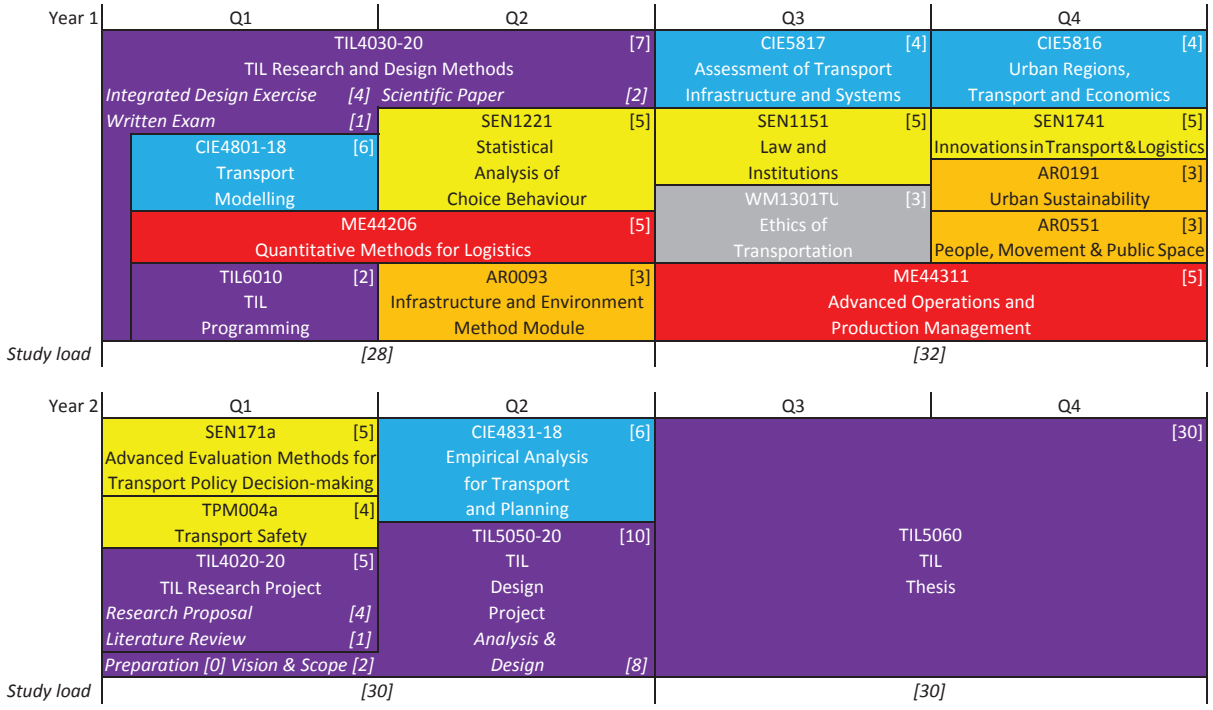
C.4 Convergence Programme: Specialisation E - Engineering



Courses and projects provided by:

TIL	MSc Transport, Infrastructure & Logistics
CIE	MSc Civil Engineering
SEN	MSc Complex Systems Engineering & Management
ME	MSc Mechanical Engineering
AE	MSc Aerospace Engineering
AR	MSc Architecture, Urbanism & Building Sciences
	Mathematics options for Convergence Programme

D.1 Example Electives in Specialisation P - Policy



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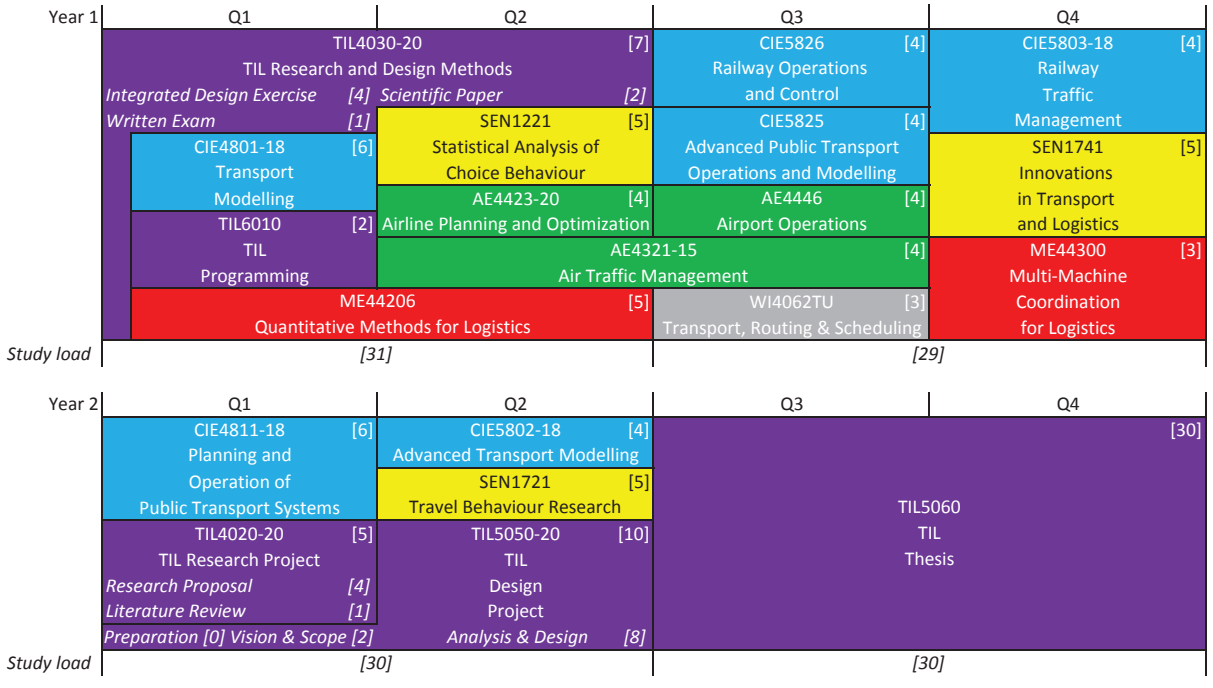
D.2 Example Electives in Specialisation D - Design



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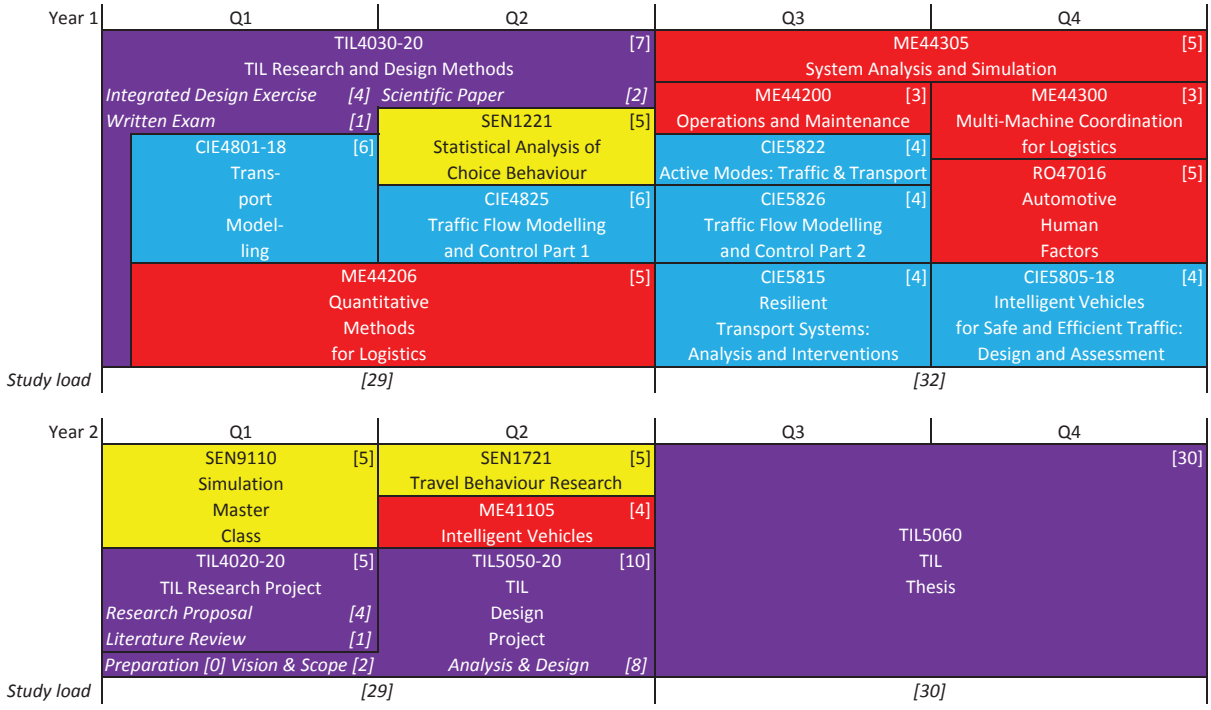
Courses and projects provided by:

TIL	MSc Transport, Infrastructure & Logistics
CIE	MSc Civil Engineering
SEN	MSc Complex Systems Engineering & Management
ME	MSc Mechanical Engineering
AE	MSc Aerospace Engineering
AR	MSc Architecture, Urbanism & Building Sciences
TU	Service Education EWI / Interfaculty Education TPM

D.3 Example Electives in Specialisation O - Operations



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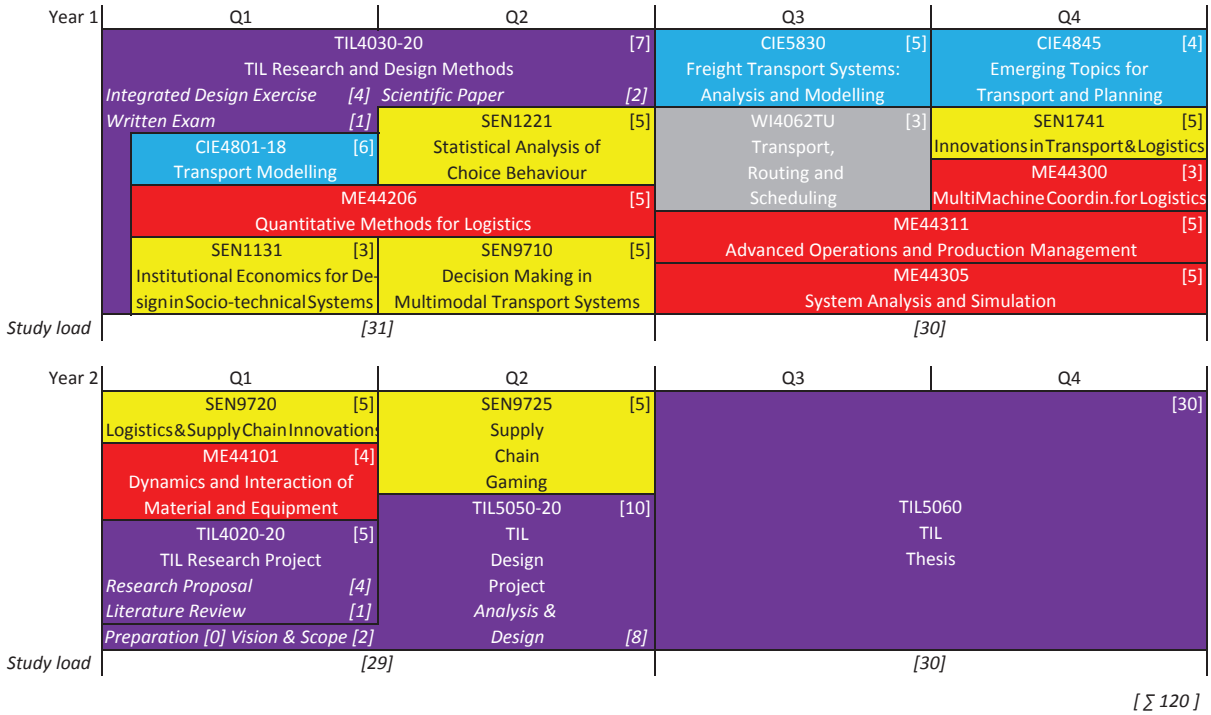
D.4 Example Electives in Specialisation E - Engineering



[∑ 120]

Courses and projects provided by:

TIL	MSc Transport, Infrastructure & Logistics
CIE	MSc Civil Engineering
SEN	MSc Complex Systems Engineering & Management
ME	MSc Mechanical Engineering
AE	MSc Aerospace Engineering
AR	MSc Architecture, Urbanism & Building Sciences
TU	Service Education EWI / Interfaculty Education TPM

John Baggen, Jaap Vleugel & Dingena Schott