

Competence coverage matrix

Academic year 2021-2022

Legend:
T=teaching methods
E=evaluation methods

Competences in one/more scientific discipline(s)

Have a clear understanding of the basic sciences and basic engineering sciences, and have the ability to apply them in a creative and purposeful way in the chosen specific engineering discipline.

Employ the basic sciences and techniques in a creative and purposeful way.

Understand the basic principles of the behaviour of materials, the design of building structures, the construction of the building envelope and the application of technical installations in buildings.

Understand the basic principles of architectural and urban design with regard to spatial analysis, architectural typology, programme definition, figuration and design methodology.

Understand the methodology of the science of architecture, the history of architecture and urbanism, based on a framework of important cases and literature.

Understand the social relevance and impact of architecture, urban development and construction.

Scientific competences

Research and critically process technical and scientific information in a purposeful way.

Employ standard models, methods and techniques in assignments.

Formulate scientific questions and problems in a systematic and structured way and critically evaluate solutions and answers.

Propose solutions for simple constructional problems based on scientific methods and insights acquired during the studies.

Organise simple design processes, apply the acquired knowledge to the design process and explain and justify the decisions made in the design process.

Intellectual competences

Think in a conceptual, analytical, system-oriented, problem-solving, and design-oriented way at different levels of abstraction.

Accept the complexity and uncertainty of architectural and urban design and make solid and qualitative design decisions given the contradictory nature of specifications and boundary conditions.

Competences in cooperation and communication

Master scientific and discipline-specific terminology.

Carry out concrete assignments systematically and in consultation.

Work as part of a team.

Report on research work and design proposals orally, graphically and in writing.

Societal competences

Pay attention to social aspects of own design proposals.

Be aware of the life cycle and environmental impact of the built environment.

Be aware of aspects of safety and accessibility of the built environment.

		General Courses																																				
		E000112	E050012	E080410	E080710	E042012	E080813	E020710	E000611	E042800	E050410	E066160	E000124	E080111	E080650	E082710	E084110	E081211	E080210	E050310	E003220	E027610	E075611	E020610	E084550	E080911	E052720	E081311	E051222	E084560	E082600	E080881	E044020	E075071	E081112	E082014		
		Calculus	Introduction to Structural Design	Design Theory 1	Perception and Presentation Media 1	Introduction to Strength of Materials	Digital Design 2	Physics 2	Mathematical Analysis	Structural Load-Bearing Systems in Architectural Design	Construction of Buildings	Materials Science	Geometry	Architectural Theory 1	Design Theory 2	History of Architecture 2	History of Urban Planning	Architectural Design 2	Architectural Theory 2	Building Physics	Statistics and Data Handling	Constructional Aspects of the Building Envelope	Art and Architecture	Physics 1	Introduction to Urban Analysis and Design	Perception and Presentation Media 2	Concrete Technology	Architectural Design 3	Residential Comfort Systems	Methods of Urban Analysis and Design	History of Architecture 1	Digital Design 1	Statics of Structures	Introduction to Philosophy and the History of Ideas	Architectural Design 1	Actual Aspects of Architecture 1		
Competences in one/more scientific discipline(s)	Have a clear understanding of the basic sciences and basic engineering sciences, and have the ability to apply them in a creative and purposeful way in the chosen specific engineering discipline.	T 15 E 12	T			T		T	T			T	T	T						T	T	T		T										T	T			
	Employ the basic sciences and techniques in a creative and purposeful way.										T								T		T																T	
Scientific competences	Research and critically process technical and scientific information in a purposeful way.	T 6 E 3												T								T																
	Employ standard models, methods and techniques in assignments.	T 18 E 16	T	T	T	T		T	T		T		T		T						T	T	T				T		T	T	T			T				
Intellectual competences	Think in a conceptual, analytical, system-oriented, problem-solving, and design-oriented way at different levels of abstraction.	T 26 E 25	T	T		T	T	T	T	T	T	T	T	T	T	T	T	T	T			T	T			T	T		T	T	T	T	T	T		T	T	
	Accept the complexity and uncertainty of architectural and urban design and make solid and qualitative design decisions given the contradictory nature of specifications and boundary conditions.	T 7 E 7			T																					T	T		T	T								T
Competences in cooperation and communication	Master scientific and discipline-specific terminology.	T 23 E 18	T	T		T			T	T	T	T	T	T	T	T	T	T	T			T				T	T	T		T	T	T	T	T	T			
	Carry out concrete assignments systematically and in consultation.	T 16 E 12	T	T	T		T				T		T												T	T		T	T	T	T	T	T	T				T
Societal competences	Work as part of a team.	T 14 E 4		T	T	T								T								T						T	T	T	T	T	T					
	Report on research work and design proposals orally, graphically and in writing.	T 16 E 15		T	T	T					T			T		T	T	T	T			T	T			T	T		T	T	T	T	T					T
Societal competences	Pay attention to social aspects of own design proposals.	T 7 E 4												T													T											T
	Be aware of the life cycle and environmental impact of the built environment.	T 8 E 6									T	T															T	T	T									
Societal competences	Be aware of aspects of safety and accessibility of the built environment.	T 3 E 1										T																T										
			W 6 E 6	W 8 E 4	W 11 E 5	W 5 E 3	W 3 E 3	W 5 E 5	W 4 E 4	W 8 E 8	W 7 E 7	W 6 E 6	W 9 E 5	W 6 E 6	W 8 E 8	W 4 E 4	W 12 E 8	W 4 E 4	W 3 E 2	W 7 E 7	W 12 E 8	W 4 E 4	W 8 E 8	W 16 E 5	W 3 E 3	W 13 E 10	W 12 E 8	W 13 E 13	W 7 E 4	W 3 E 3	W 4 E 4	W 3 E 3	W 8 E 6	W 1 E 1				

Course	Teaching methods	Evaluation methods	Course learning outcome
<i>Noot: leer- en evaluatievormen voorafgegaan door ** werden niet teruggevonden in de studiefiche</i>			
E000112 Calculus	lecture seminar	written examination with open questions skills test open book examination	Being able to compute with vectors. Being able to formulate in a structure and precise way. Being able to reason in a logical and correct way at the appropriate level of abstraction. Being able to perform computations by hand or with the computer package Maple efficiently and quickly. Knowing the basic methods for the mathematical analysis of functions and being able to apply the corresponding techniques.
E042012 Introduction to Strength of Materials	demonstration seminar: coached exercises lecture	written examination	To know the important concepts related to strength of materials. Be aware of analogies between different laws. Reduce / simplify problems to enable to solve them with known methods. Systematically analyse a problem by separation into partial problems. Shear and moment diagrams can be drawn for elements subjected to bending. Optimal dimensioning of elements under a load combination can be performed. The effect of temperature can be evaluated for elements with restricted expansion or multi-material cross sections. Stresses and strains can be calculated for simple construction elements under direct tension or compression, multi-axial tension or compression, simple bending, biaxial bending, combined bending and tension/compression, buckling, torsion. To be able to deduce the relation between load, shear force and moment. To understand the importance of equilibrium for calculation of elements under load.
E020710 Physics 2	demonstration seminar: coached exercises lecture	written examination with open questions	To gain a good understanding of fundamental principles and concepts in thermodynamics and transport phenomena. Be able to model physics-related problems and develop problem solving skills.
E000611 Mathematical Analysis	lecture seminar: coached exercises lecture: plenary exercises	written examination open book examination	To calculate line and surface integrals using integral theorems. To solve standard types of ordinary and partial differential equations. To build and study mathematical models for problems in basic science. To implement the instructed mathematical techniques on a computer (with Maple). To calculate line and surface integrals directly. To gain insight in solution strategies for ordinary and partial differential equations.
E066160 Materials Science	lecture	written examination	1 INSIGHT: Insight into the relation between composition and structure of a material on the one hand and the properties of materials on the other. Insight into the limitations originating from the production process used to produce the structure or structural parts from a certain material. 2 SKILLS: Have the capacity to select a material or material class on the base of primary and secondary requirements posed to the material. Assess the problems that might arise if certain materials or production processes are used. 3 ATTITUDES: the materials selection process is based on much more than solely the mechanical properties of the material, also the production process of the structure or structural part should be considered.
E000124 Geometry	lecture seminar	written examination with open questions skills test open book examination	Being able to handle vectorial representations of 3D structures. Being able to formulate in a structured and precise way. Being able to reason in a logical and correct way at the appropriate level of abstraction. Being able to efficiently and precisely perform algebraic computations by hand or with the computer package Maple. Being able to use algebraic concepts and methods, both in a geometrical and in an abstract context.
E080111 Architectural Theory 1	group work self-reliant study activities seminar lecture		Knowing and understanding basic notions of early modern, modern, and contemporary architectural theory. Being able to apply the acquired insights to evaluate contemporary architectural theory and criticism. Being able to write a short paper on an architectural theoretical problem. Being able to perform elementary literature research on an architectural theoretical problem. Being able to place architectural historical notions in their own tradition and historical context. Being able to read source texts on architectural history. Recognizing the polymorphy of the reflection on architecture and of the (institutional) environments in which this reflection takes place. Explaining what the discipline of architectural theory consists of: to identify characteristics and limitations of the discipline in a historical perspective. Knowing the outline of the historical development of architectural history from the fifteenth Century. Identify a selection of key themes in early modern, modern, and contemporary architectural theory: the body metaphor, the meaning attributed to architecture, representation and architecture, the relation of architectural theory with the classical examples, the position of architecture among the arts, instrumentality or autonomy of architecture, legitimacy of architecture.
E050310 Building Physics	lecture seminar practicum	assignment	Be able to derive and build calculation methods and models in building physics, and be able to use these methods when evaluating building physics performances. Apply and integrate heat and moisture insulation in the construction and building design in a physically correct way. Define typical variables in building physics and relate them to hygrothermal material - and construction characteristics
E003220 Statistics and Data Handling	lecture seminar: practical PC room classes seminar: coached exercises self-reliant study activities	written examination report	Explain the distribution of a variable and how the variable can be characterised using simple parameters. Critically evaluate the information coming from small samples. Be able to analyse large data sets statistically. Pay attention to the option to characterise a complex phenomenon by the use of simple parameters. Analyse a trend in data using regression analysis. Investigate whether a sample comes from a population behaving according to a certain statistical model. Analyse the output of an experiment by use of frequency tables. Draw and use the graphical representation of a probability function. Calculate the chance that an event will occur. Investigate whether the difference between populations is relevant. To be able to test a statistical hypothesis. To be able to estimate parameters and calculate confidence intervals. Decide on characteristics of a population based on analysis of samples. Identify experiments of processes for which certain probability density functions can be applied.
E027610 Constructional Aspects of the Building Envelope	lecture self-reliant study activities seminar	oral examination assignment	
E020610 Physics 1	guided self-study self-reliant study activities seminar practicum lecture demonstration	written examination report participation	To master basic research skills: accuracy in measurements, critical sense in analyzing experimental data, correctness in reporting. To understand the physical laws and concepts of the covered chapters. To be able to solve physics problems by applying these concepts.
E051222 Residential Comfort Systems	lecture practicum		Design a residential system for heating and ventilation. Size a simple heating system following standard calculation methods. Being able to make a well-thought choice of the required HVAC systems based on the desired performance and comfort Define the specifications of a heating and ventilation system in relation to the building design and the energy efficiency of the systems Understand the principles of design and operation of residential HVAC systems

E082600 History of Architecture 1	lecture seminar: coached exercises		<p>To be able to apply the acquired insights in the perception of concrete buildings and projects.</p> <p>To recognise the shape and space concepts of different trends in Western architecture, their constructive logic and the ideological intentions.</p> <p>To have knowledge of the development of architecture and urban development.</p> <p>To understand buildings as expressions of formal and ideological opinions within their historical context.</p> <p>To have a thorough command of the terminology of architecture.</p> <p>To have knowledge of the paradigmatic buildings and oeuvres in relation to the artistic, intellectual and socio-political context in which they originated.</p>
E044020 Statics of Structures	lecture seminar: coached exercises	written examination	<p>Calculate the centre of gravity of planar surfaces</p> <p>Calculate the reactions and the internal forces in plane and spatial isostatic structures</p> <p>Calculate the equilibrium shape of a loaded cable and the corresponding tension in that cable</p> <p>Verify the equilibrium taking into account friction</p>
E075071 Introduction to Philosophy and the History of Ideas	lecture online seminar online lecture seminar	written examination	<p>Basic knowledge of the elementary concepts and theories on man, human knowledge, and culture, underlying the discipline of architecture and the dwelling</p> <p>culture of Europe, as dealt with in the course.</p>

Course	Teaching methods	Evaluation methods	Course learning outcome
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Course	Teaching methods	Evaluation methods	Course learning outcome
<i>Noot: leer- en evaluatievormen voorafgegaan door ** werden niet teruggevonden in de studiefiche</i>			
E050012 Introduction to Structural Design	lecture fieldwork	written examination with open questions assignment oral examination	To explain the structural logic in built structures. To determine the consistency of elementary building elements. To ally elementary concepts in building physics. To design basic components in building construction. Building Materials: characteristics, applications and terminology
E042012 Introduction to Strength of Materials	demonstration lecture	written examination	To know the important concepts related to strength of materials.
E020710 Physics 2	demonstration seminar: coached exercises lecture	written examination with open questions	To gain a good understanding of fundamental principles and concepts in thermodynamics and transport phenomena. Be able to model physics-related problems and develop problem solving skills.
E042800 Structural Load-Bearing Systems in Architectural Design	lecture seminar: coached exercises	open book examination	Correctly use specific technical terminology. Calculate forces and deformations in isostatic and hyperstatic structures. Determine the design value of multiple actions. Model load-bearing structures and their components. Select a suitable loadbearing system in function of the force transfer. Calculate the effects of temperature and settlements. Apply the semi-probabilistic approach according to the Eurocodes. Recognise different components in the organisation of the loadbearing structure. Distinguish isostatic and statically undetermined structures. Compose equilibrium equations for parts of the structure.
E050410 Construction of Buildings	lecture seminar	written examination with open questions assignment written examination with multiple choice questions	Analyse and apply principles of horizontal and vertical stability of buildings. Understanding the pre-design of technical volumes, based on experience based data. Understand and explain basic principles and structural consequences of HVAC, internal sewage and elevator installations. Understand the integration challenge of centralized components of all typical technical installations. Recognizing typical technical structures in buildings. Create structural concepts and detailing in a correct way. Reason and argue the use of steel, timber, concrete, masonry and glass as building materials. Mastering basic principles of terrain, soil and foundation techniques. Understanding of concepts and functioning of loadbearing constructions and building components.
E066160 Materials Science	lecture	written examination	1 INSIGHT: Insight into the relation between composition and structure of a material on the one hand and the properties of materials on the other. Insight into the limitations originating from the production process used to produce the structure or structural parts from a certain material. 2 SKILLS: Have the capacity to select a material or material class on the base of primary and secondary requirements posed to the material. Assess the problems that might arise if certain materials or production processes are used. 3 ATTITUDES: the materials selection process is based on much more than solely the mechanical properties of the material, also the production process of the structure or structural part should be considered.
E081211 Architectural Design 2	practicum		Representing a project in word, image and model according to assigned formats. Dealing with suggestions and criticism of teachers and fellow students. Develop coherent arguments to support these strategies. Representing these strategies in word, image, and model according to assigned formats. To evaluate one's own strategy critically. To develop coherent design strategies to deal with that complexity, in which all decisions are related. Recognizing that a project is always a specific answer to that complexity. Recognizing the complexity of an assignment. Completing successfully an assignment of spatial, programmatic, contextual or conceptual complexity.
E027610 Constructional Aspects of the Building Envelope	lecture self-reliant study activities seminar	oral examination assignment	
E080911 Perception and Presentation Media 2	project		
E052720 Concrete Technology	lecture seminar	oral examination	To be acquainted with the constituent materials of concrete, concrete mix design, and the properties of fresh, hardening and hardened concrete.
E081311 Architectural Design 3	practicum	assignment	To design a building and its surroundings in relation to multiple parameters. To deal creatively with the 'concrete' and the 'quality of life' on architectural design. To deal creatively with the impact of materialisation and the act of making on architectural design.
E051222 Residential Comfort Systems	lecture practicum	written examination assignment	Design a residential system for heating and ventilation. Size a simple heating system following standard calculation methods. Being able to make a well-thought choice of the required HVAC systems based on the desired performance and comfort Define the specifications of a heating and ventilation system in relation to the building design and the energy efficiency of the systems Understand the principles of design and operation of residential HVAC systems
E044020 Statics of Structures	lecture seminar: coached exercises	written examination	Calculate the centre of gravity of planar surfaces Calculate the reactions and the internal forces in plane and spatial isostatic structures Calculate the equilibrium shape of a loaded cable and the corresponding tension in that cable Verify the equilibrium taking into account friction

Course	Teaching methods	Evaluation methods	Course learning outcome
<i>Noot: leer- en evaluatievormen voorafgegaan door ** werden niet teruggevonden in de studiefiche</i>			
E080410 Design Theory 1	lecture seminar: coached exercises	written examination assignment	Having knowledge of the elementary principles of Architectural Design: formal characteristics, composition, geometry
E080710 Perception and Presentation Media 1	demonstration seminar: coached exercises	portfolio assignment	Attitudes: orientation towards critical selection of image components and synthetic graphical representation Skills: drawing skills related to the representation of spatial situations Concepts: projection plane, horizon, vanishing point, proportions, depth, framing, selection of image elements Insights: insight in the availability of graphical techniques and perspectival representations for investigation and communication of spatial situations
E080650 Design Theory 2	excursion seminar: coached exercises project lecture	oral examination assignment	Having knowledge of the main building types and having an awareness about how existing knowledge may be applied in new situations Analyzing or describing an architectural project making use of the proper graphic and textual means Having a precise terminology to communicate about an architectural artefact, a design brief, the problems posed while designing or the design process
E084110 History of Urban Planning	lecture	written examination with multiple choice questions	Situate urban plans and developments in their time frame. Link historical urbanistic plans to the real spatial context. Consider historical urban developments from an analytical and questioning point of view. Identify and reconstitute the main principles, practices and tools of the making of an urban plan or the development of an urban environment or city. Situating the history of urbanism in a larger socio-economical, cultural context.
E081211 Architectural Design 2	practicum	participation assignment	Representing a project in word, image and model according to assigned formats. Dealing with suggestions and criticism of teachers and fellow students. Develop coherent arguments to support these strategies. Representing these strategies in word, image, and model according to assigned formats. To evaluate one's own strategy critically. To develop coherent design strategies to deal with that complexity, in which all decisions are related. Recognizing that a project is always a specific answer to that complexity. Recognizing the complexity of an assignment. Completing successfully an assignment of spatial, programmatic, contextual or conceptual complexity.
E080911 Perception and Presentation Media 2	project	assignment	
E081311 Architectural Design 3	practicum	assignment	To design a building and its surroundings in relation to multiple parameters. To deal creatively with the 'concrete' and the 'quality of life' on architectural design.
E084560 Methods of Urban Analysis and Design	group work seminar	assignment report	Being able to make in a methodical way a spatial analysis on the level of urban planning and to integrate it in the urban design project. Have knowledge of presentation and presentation techniques for the scale of urban planning.
E082600 History of Architecture 1	lecture seminar: coached exercises	written examination	To be able to apply the acquired insights in the perception of concrete buildings and projects. To recognise the shape and space concepts of different trends in Western architecture, their constructive logic and the ideological intentions. To have knowledge of the development of architecture and urban development. To understand buildings as expressions of formal and ideological opinions within their historical context. To have a thorough command of the terminology of architecture. To have knowledge of the paradigmatic buildings and oeuvres in relation to the artistic, intellectual and socio-political context in which they originated.
E081112 Architectural Design 1	practicum	participation assignment	Attitude and Position: Capability to develop a well-considered, justifiable and sensible design concept, based on a comprehensive interpretation of both the assignment and its context. Presentation: Capability and ability to communicate the design in a distinct, clear and coherent way, by means of distinguished documents; ability to create such documents with representational and graphic quality. Elaboration: Capability and ability to develop the design concept into distinguished, complementary aspects, and to achieve in this effectiveness, coherence and precision.

Course	Teaching methods	Evaluation methods	Course learning outcome
E080710 Perception and Presentation Media 1	demonstration seminar: coached exercises		Attitudes: orientation towards critical selection of image components and synthetic graphical representation Skills: drawing skills related to the representation of spatial situations Concepts: projection plane, horizon, vanishing point, proportions, depth, framing, selection of image elements Insights: insight in the availability of graphical techniques and perspectival representations for investigation and communication of spatial situations
E080111 Architectural Theory 1	group work self-reliant study activities seminar lecture	written examination assignment	Knowing and understanding basic notions of early modern, modern, and contemporary architectural theory. Being able to apply the acquired insights to evaluate contemporary architectural theory and criticism. Being able to write a short paper on an architectural theoretical problem. Being able to perform elementary literature research on an architectural theoretical problem. Being able to place architectural historical notions in their own tradition and historical context. Being able to read source texts on architectural history. Recognizing the polymorphy of the reflection on architecture and of the (institutional) environments in which this reflection takes place. Explaining what the discipline of architectural theory consists of: to identify characteristics and limitations of the discipline in a historical perspective. Knowing the outline of the historical development of architectural history from the fifteenth Century. Identify a selection of key themes in early modern, modern, and contemporary architectural theory: the body metaphor, the meaning attributed to architecture, representation and architecture, the relation of architectural theory with the classical examples, the position of architecture among the arts, instrumentality or autonomy of architecture, legitimacy of architecture.
E082710 History of Architecture 2	lecture self-reliant study activities seminar	oral examination report	Be able to use a critical terminology linked to the history of 20th Century Architecture (Modernism vs Classicism; Rationality; Authenticity; Utopia; Dwelling;...) To be able to use visual material in a significant way in order to illustrate or strengthen an argument related to 20th Century Architecture. Having insight in the particular position of the architect within the making of the built environment and his relationship with clients, policy makers, entrepreneurs, critics/historians, users,... and being aware of the broad social, cultural significance of building and making architecture in the 20th century. Have obtained insight in the ideas that underscored the various tendencies within the 20th Century Architecture, as well as in the ideological, economical, cultural and artistic intentions that shaped the evolution of 20th Century Architecture Having insight in the shifting perspectives and frames of reference in the historiography of 20th Century Architecture To be able to articulate, both orally and in written form, a personal reflexion on a building, an architect, a topic from 20th Century Architectural history, drawing on the available critical terminology. Attitudes: Interest in the formal and spatial qualities of 20th Century Architecture Understand and be able to explain several (stylistic) tendencies from the 20th Century (Purism, Functionalism, Neue Sachlichkeit, International Style, Modern Classicism, Brutalism, Postmodernism,...). Having enhanced one's experience and skill in literature research in relation to architectural history research (including assembling a bibliography and critically evaluating primary and secondary sources)
E084110 History of Urban Planning	lecture	written examination with multiple choice questions	Situate urban plans and developments in their time frame. Link historical urbanistic plans to the real spatial context. Consider historical urban developments from an analytical and questioning point of view. Identify and reconstitute the main principles, practices and tools of the making of an urban plan or the development of an urban environment or city. Situate the history of urbanism in a larger socio-economical, cultural context.
E080210 Architectural Theory 2	lecture online seminar online lecture lecture: plenary exercises seminar	oral examination	The student is expected to be able to formulate and discuss from a personal point of view on the central topics concerning the experience of place and the condition of modernity within the course, both in writing and in conversation.
E084550 Introduction to Urban Analysis and Design	lecture	written examination	Analyse and evaluate a strategic urban project Name and explain the analytical instruments pertinent to the definition of strategic urban projects Explain and illustrate through examples key urban design concepts Understand the strategic meaning of handling urban development by means of the development of strategic urban projects Situate the urban project tradition within the historical development of the discipline
E080911 Perception and Presentation Media 2	project		
E082600 History of Architecture 1	lecture seminar: coached exercises		To be able to apply the acquired insights in the perception of concrete buildings and projects. To recognise the shape and space concepts of different trends in Western architecture, their constructive logic and the ideological intentions. To have knowledge of the development of architecture and urban development. To understand buildings as expressions of formal and ideological opinions within their historical context. To have a thorough command of the terminology of architecture. To have knowledge of the paradigmatic buildings and oeuvres in relation to the artistic, intellectual and socio-political context in which they originated.

Course	Teaching methods	Evaluation methods	Course learning outcome
E080710 Perception and Presentation Media 1	demonstration seminar: coached exercises		Attitudes:orientation towards critical selection of image components and synthetic graphical representation Skills: drawing skills related to the representation of spatial situations Concepts: projection plane, horizon, vanishing point, proportions, depth, framing, selection of image elements Insights: insight in the availability of graphical techniques and perspectival representations for investigation and communication of spatial situations
E080111 Architectural Theory 1	group work self-reliant study activities seminar lecture	written examination assignment	Knowing and understanding basic notions of early modern, modern, and contemporary architectural theory. Being able to apply the acquired insights to evaluate contemporary architectural theory and criticism. Being able to write a short paper on an architectural theoretical problem. Being able to perform elementary literature research on an architectural theoretical problem. Being able to place architectural historical notions in their own tradition and historical context. Being able to read source texts on architectural history. Recognizing the polymorphy of the reflection on architecture and of the (institutional) environments in which this reflection takes place. Explaining what the discipline of architectural theory consists of: to identify characteristics and limitations of the discipline in a historical perspective. Knowing the outline of the historical development of architectural history from the fifteenth Century. Identify a selection of key themes in early modern, modern, and contemporary architectural theory: the body metaphor, the meaning attributed to architecture, representation and architecture, the relation of architectural theory with the classical examples, the position of architecture among the arts, instrumentality or autonomy of architecture, legitimacy of architecture.
E080650 Design Theory 2	excursion seminar: coached exercises project lecture	oral examination assignment	Having knowledge of the main building types and having an awareness about how existing knowledge may be applied in new situations Analyzing or describing an architectural project making use of the proper graphic and textual means Having a precise terminology to communicate about an architectural artefact, a design brief, the problems posed while designing or the design process
E082710 History of Architecture 2	lecture self-reliant study activities seminar	oral examination report	Having insight in the shifting perspectives and frames of reference in the historiography of 20th Century Architecture Having insight in the particular position of the architect within the making of the built environment and his relationship with clients, policy makers, entrepreneurs, critics/historians, users,... and being aware of the broad social, cultural significance of building and making architecture in the 20th century. Have obtained insight in the ideas that underscored the various tendencies within the 20th Century Architecture, as well as in the ideological, economical, cultural and artistic intentions that shaped the evolution of 20th Century Architecture
E084110 History of Urban Planning	lecture	written examination with multiple choice questions	Situate urban plans and developments in their time frame. Link historical urbanistic plans to the real spatial context. Consider historical urban developments from an analytical and questioning point of view. Identify and reconstitute the main principles, practices and tools of the making of an urban plan or the development of an urban environment or city. Situate the history of urbanism in a larger socio-economical, cultural context.
E081211 Architectural Design 2	practicum	participation assignment	Representing a project in word, image and model according to assigned formats. Dealing with suggestions and criticism of teachers and fellow students. Develop coherent arguments to support these strategies. Representing these strategies in word, image, and model according to assigned formats. To evaluate one's own strategy critically. To develop coherent design strategies to deal with that complexity, in which all decisions are related. Recognizing that a project is always a specific answer to that complexity. Recognizing the complexity of an assignment. Completing successfully an assignment of spatial, programmatic, contextual or conceptual complexity.
E080210 Architectural Theory 2	lecture online seminar online lecture lecture: plenary exercises seminar	oral examination	The student is expected to be able to formulate and discuss from a personal point of view on the central topics concerning the experience of place and the condition of modernity within the course, both in writing and in conversation.
E027610 Constructional Aspects of the Building Envelope	lecture self-reliant study activities seminar		
E084550 Introduction to Urban Analysis and Design	lecture	written examination	Analyse and evaluate a strategic urban project Name and explain the analytical instruments pertinent to the definition of strategic urban projects Explain and illustrate through examples key urban design concepts Understand the strategic meaning of handling urban development by means of the development of strategic urban projects Situate the urban project tradition within the historical development of the discipline
E080911 Perception and Presentation Media 2	project		
E081311 Architectural Design 3	practicum	assignment	To design a building and its surroundings in relation to multiple parameters.
E051222 Residential Comfort Systems	lecture practicum		Design a residential system for heating and ventilation. Size a simple heating system following standard calculation methods. Being able to make a well-thought choice of the required HVAC systems based on the desired performance and comfort Define the specifications of a heating and ventilation system in relation to the building design and the energy efficiency of the systems Understand the principles of design and operation of residential HVAC systems
E084560 Methods of Urban Analysis and Design	group work seminar	assignment report	Being able to make in a methodical way a spatial analysis on the level of urban planning and to integrate it in the urban design project. Have knowledge of presentation en presentation techniques for the scale of urban planning.
E082600 History of Architecture 1	lecture seminar: coached exercises	written examination	To be able to apply the acquired insights in the perception of concrete buildings and projects. To recognise the shape and space concepts of different trends in Western architecture, their constructive logic and the ideological intentions. To have knowledge of the development of architecture and urban development. To understand buildings as expressions of formal and ideological opinions within their historical context. To have a thorough command of the terminology of architecture. To have knowledge of the paradigmatic buildings and oeuvres in relation to the artistic, intellectual and socio-political context in which they originated.
E081112 Architectural Design 1	practicum		Attitude and Position: Capability to develop a well-considered, justifiable and sensible design concept, based on a comprehensive interpretation of both the assignment and its context. Presentation: Capability and ability to communicate the design in a distinct, clear and coherent way, by means of distinguished documents; ability to create such documents with representational and graphic quality. Elaboration: Capability and ability to develop the design concept into distinguished, complementary aspects, and to achieve in this effectiveness, coherence and precision.

Course	Teaching methods	Evaluation methods	Course learning outcome
<i>Noot: leer- en evaluatievormen voorafgegaan door ** werden niet teruggevonden in de studiefiche</i>			
E080111 Architectural Theory 1	group work self-reliant study activities seminar lecture	written examination assignment	Knowing and understanding basic notions of early modern, modern, and contemporary architectural theory. Being able to apply the acquired insights to evaluate contemporary architectural theory and criticism. Being able to write a short paper on an architectural theoretical problem. Being able to perform elementary literature research on an architectural theoretical problem. Being able to place architectural historical notions in their own tradition and historical context. Being able to read source texts on architectural history. Recognizing the polymorphy of the reflection on architecture and of the (institutional) environments in which this reflection takes place. Explaining what the discipline of architectural theory consists of: to identify characteristics and limitations of the discipline in a historical perspective. Knowing the outline of the historical development of architectural history from the fifteenth Century. Identify a selection of key themes in early modern, modern, and contemporary architectural theory: the body metaphor, the meaning attributed to architecture, representation and architecture, the relation of architectural theory with the classical examples, the position of architecture among the arts, instrumentality or autonomy of architecture, legitimacy of architecture.
E082710 History of Architecture 2	seminar self-reliant study activities	report	Having enhanced one's experience and skill in literature research in relation to architectural history research (including assembling a bibliography and critically evaluating primary and secondary sources)
E080210 Architectural Theory 2	lecture online seminar online lecture lecture: plenary exercises seminar	oral examination	The student is expected to be able to formulate and discuss from a personal point of view on the central topics concerning the experience of place and the condition of modernity within the course, both in writing and in conversation.
E027610 Constructional Aspects of the Building Envelope	lecture self-reliant study activities seminar		
E051222 Residential Comfort Systems	lecture practicum		Design a residential system for heating and ventilation. Size a simple heating system following standard calculation methods. Being able to make a well-thought choice of the required HVAC systems based on the desired performance and comfort Define the specifications of a heating and ventilation system in relation to the building design and the energy efficiency of the systems Understand the principles of design and operation of residential HVAC systems
E082600 History of Architecture 1	lecture seminar: coached exercises		To be able to apply the acquired insights in the perception of concrete buildings and projects. To recognise the shape and space concepts of different trends in Western architecture, their constructive logic and the ideological intentions. To have knowledge of the development of architecture and urban development. To understand buildings as expressions of formal and ideological opinions within their historical context. To have a thorough command of the terminology of architecture. To have knowledge of the paradigmatic buildings and oeuvres in relation to the artistic, intellectual and socio-political context in which they originated.

Course	Teaching methods	Evaluation methods	Course learning outcome
E000112 Calculus	lecture seminar	written examination with open questions skills test open book examination	Knowing the basic methods for the mathematical analysis of functions and being able to apply the corresponding techniques.
E050012 Introduction to Structural Design	lecture fieldwork	written examination with open questions assignment oral examination	To explain the structural logic in built structures. To determine the consistency of elementary building elements. To ally elementary concepts in building physics. To design basic components in building construction. Building Materials: characteristics, applications and terminology
E080410 Design Theory 1	lecture	written examination	Having knowledge of the elementary principles of Architectural Design: formal characteristics, composition, geometry
E080710 Perception and Presentation Media 1	demonstration seminar: coached exercises	portfolio assignment	Attitudes: orientation towards critical selection of image components and synthetic graphical representation Skills: drawing skills related to the representation of spatial situations Concepts: projection plane, horizon, vanishing point, proportions, depth, framing, selection of image elements Insights: insight in the availability of graphical techniques and perspectival representations for investigation and communication of spatial situations
E042012 Introduction to Strength of Materials	lecture seminar: coached exercises	written examination	To understand the importance of equilibrium for calculation of elements under load. Be aware of analogies between different laws. Reduce / simplify problems to enable to solve them with known methods. Systematically analyse a problem by separation into partial problems.
E020710 Physics 2	demonstration seminar: coached exercises lecture		To gain a good understanding of fundamental principles and concepts in thermodynamics and transport phenomena. Be able to model physics-related problems and develop problem solving skills.
E000611 Mathematical Analysis	lecture seminar: coached exercises lecture: plenary exercises	written examination open book examination	To calculate line and surface integrals using integral theorems. To solve standard types of ordinary and partial differential equations. To build and study mathematical models for problems in basic science. To implement the instructed mathematical techniques on a computer (with Maple). To calculate line and surface integrals directly. To gain insight in solution strategies for ordinary and partial differential equations.
E050410 Construction of Buildings	lecture seminar	written examination with open questions report written examination with multiple choice questions	Analyse and apply principles of horizontal and vertical stability of buildings. Understanding the pre-design of technical volumes, based on experience based data. Create structural concepts and detailing in a correct way. Reason and argue the use of steel, timber, concrete, masonry and glass as building materials. Estimate the dimensions of a number of major building components by means of simplified formulas and rules-of-thumb. Understanding of concepts and functioning of loadbearing constructions and building components.
E000124 Geometry	lecture seminar	written examination with open questions skills test open book examination	Being able to use algebraic concepts and methods, both in a geometrical and in an abstract context.
E080650 Design Theory 2	excursion seminar: coached exercises project lecture	oral examination assignment	Having knowledge of the main building types and having an awareness about how existing knowledge may be applied in new situations Analyzing or describing an architectural project making use of the proper graphic and textual means Having a precise terminology to communicate about an architectural artefact, a design brief, the problems posed while designing or the design process
E050310 Building Physics	lecture seminar practicum	assignment	Be able to derive and build calculation methods and models in building physics, and be able to use these methods when evaluating building physics performances. Apply and integrate heat and moisture insulation in the construction and building design in a physically correct way. Define typical variables in building physics and relate them to hygrothermal material - and construction characteristics
E003220 Statistics and Data Handling	lecture seminar: practical PC room classes seminar: coached exercises self-reliant study activities	written examination report	Identify experiments of processes for which certain probability density functions can be applied. Analyse a trend in data using regression analysis. Investigate whether a sample comes from a population behaving according to a certain statistical model.
E027610 Constructional Aspects of the Building Envelope	lecture self-reliant study activities seminar	oral examination assignment	
E080911 Perception and Presentation Media 2	project		
E081311 Architectural Design 3	practicum	assignment	To deal creatively with the impact of materialisation and the act of making on architectural design.
E051222 Residential Comfort Systems	lecture practicum	written examination assignment	Design a residential system for heating and ventilation. Size a simple heating system following standard calculation methods. Being able to make a well-thought choice of the required HVAC systems based on the desired performance and comfort Define the specifications of a heating and ventilation system in relation to the building design and the energy efficiency of the systems Understand the principles of design and operation of residential HVAC systems
E084560 Methods of Urban Analysis and Design	group work seminar	assignment report	Being able to make in a methodical way a spatial analysis on the level of urban planning and to integrate it in the urban design project. Have knowledge of presentation and presentation techniques for the scale of urban planning.
E080881 Digital Design 1	online demonstration online seminar online lecture	assignment	To critically apply basic visualisation techniques. Producing two-dimensional layout documents. To have a sound knowledge of 3D basic concepts used architectural design.

Course	Teaching methods	Evaluation methods	Course learning outcome
<i>Noot: leer- en evaluatievormen voorafgegaan door ** werden niet teruggevonden in de studiefiche</i>			
E000112 Calculus	lecture seminar	written examination with open questions skills test open book examination	Being able to reason in a logical and correct way at the appropriate level of abstraction. Being able to formulate in a structure and precise way.
E020710 Physics 2	demonstration seminar: coached exercises lecture		To gain a good understanding of fundamental principles and concepts in thermodynamics and transport phenomena. Be able to model physics-related problems and develop problem solving skills.
E000611 Mathematical Analysis	lecture seminar: coached exercises lecture: plenary exercises	written examination open book examination	To calculate line and surface integrals using integral theorems. To solve standard types of ordinary and partial differential equations. To build and study mathematical models for problems in basic science. To implement the instructed mathematical techniques on a computer (with Maple). To calculate line and surface integrals directly. To gain insight in solution strategies for ordinary and partial differential equations.
E000124 Geometry	lecture seminar	written examination with open questions skills test open book examination	Being able to reason in a logical and correct way at the appropriate level of abstraction. Being able to formulate in a structured and precise way.
E082710 History of Architecture 2	lecture self-reliant study activities seminar	oral examination report	Having enhanced one's experience and skill in literature research in relation to architectural history research (including assembling a bibliography and critically evaluating primary and secondary sources) To be able to use visual material in a significant way in order to illustrate or strengthen an argument related to 20th Century Architecture. To be able to articulate, both orally and in written form, a personal reflexion on a building, an architect, a topic from 20th Century Architectural history, drawing on the available critical terminology.
E003220 Statistics and Data Handling	lecture seminar: practical PC room classes seminar: coached exercises self-reliant study activities	written examination report	Decide on characteristics of a population based on analysis of samples. Critically evaluate the information coming from small samples. Be able to analyse large data sets statistically. Analyse the output of an experiment by use of frequency tables. Investigate whether the difference between populations is relevant.
E020610 Physics 1	guided self-study self-reliant study activities seminar practicum lecture demonstration	written examination report participation	To master basic research skills: accuracy in measurements, critical sense in analyzing experimental data, correctness in reporting. To understand the physical laws and concepts of the covered chapters. To be able to solve physics problems by applying these concepts.
E084560 Methods of Urban Analysis and Design	group work seminar	assignment report	Being able to make in a methodical way a spatial analysis on the level of urban planning and to integrate it in the urban design project. Have knowledge of presentation en presentation techniques for the scale of urban planning.
E075071 Introduction to Philosophy and the History of Ideas	lecture online seminar online lecture seminar	written examination	Basic knowledge of the elementary concepts and theories on man, human knowledge, and culture, underlying the discipline of architecture and the dwelling culture of Europe, as dealt with in the course.

Course	Teaching methods	Evaluation methods	Course learning outcome
<i>Noot: leer- en evaluatievormen voorafgegaan door ** werden niet teruggevonden in de studiefiche</i>			
E050012 Introduction to Structural Design	lecture fieldwork	written examination with open questions assignment oral examination	To explain the structural logic in built structures. To determine the consistency of elementary building elements. To ally elementary concepts in buiding fysics. To design basic components in building construction. Building Materials: characteristics, applications and terminology
E042800 Structural Load-Bearing Systems in Architectural Design	lecture seminar: coached exercises	open book examination	Compose equilibrium equations for parts of the structure. Calculate forces and deformations in isostatic and hyperstatic structures. Determine the design value of multiple actions. Model load-bearing structures and their components. Select a suitable loadbearing system in function of the force transfer. Calculate the effects of temperature and settlements. Apply the semi-probabilistic approach according to the Eurocodes. Distinguish isostatic and statically undetermined structures.
E050410 Construction of Buildings	lecture seminar	written examination with open questions assignment	Analyse and apply principles of horizontal and vertical stability of buildings. Understanding the pre-design of technical volumes, based on experience based data. Understand and explain basic principles and structural consequences of HVAC, internal sewage and elevator installations. Understand the integration challenge of centralized components of al typical technical installations. Recognizing typical technical structures in buildings. Create structural concepts and detailing in a correct way. Reason and argue the use of steel, timber, concrete, masonry and glass as building materials. Estimate the dimensions of a number of major building components by means of simplified formulas and rules-of-thumb. Mastering basic principles of terrain, soil and foundation techniques.
E066160 Materials Science	lecture	written examination	1 INSIGHT: Insight into the relation between composition and structure of a material on the one hand and the properties of materials on the other. Insight into the limitations originating from the production process used to produce the structure or structural parts from a certain material. 2 SKILLS: Have the capacity to select a material or material class on the base of primary and secondary requirements posed to the material. Assess the problems that might arise if certain materials or production processes are used. 3 ATTITUDES: the materials selection process is based on much more than solely the mechanical properties of the material, also the production process of the structure or structural part should be considered.
E081211 Architectural Design 2	practicum		Representing a project in word, image and model according to assigned formats. Dealing with suggestions and criticism of teachers and fellow students. Develop coherent arguments to support these strategies. Representing these strategies in word, image, and model according to assigned formats. To evaluate one's own strategy critically. To develop coherent design strategies to deal with that complexity, in which all decisions are related. Recognizing that a project is always a specific answer to that complexity. Recognizing the complexity of an assignment. Completing successfully an assignment ot spatial, programmatic, contextual or conceptual complexity.
E027610 Constructional Aspects of the Building Envelope	lecture self-reliant study activities seminar	oral examination assignment	
E080911 Perception and Presentation Media 2	project		
E081311 Architectural Design 3	practicum	assignment	To deal creatively with the impact of materialisation and the act of making on architectural design.
E051222 Residential Comfort Systems	lecture practicum	written examination assignment	Design a residential system for heating and ventilation. Size a simple heating system following standard calculation methods. Being able to make a well-thought choice of the required HVAC systems based on the desired performance and comfort Define the specifications of a heating and ventilation system in relation to the building design and the energy efficiency of the systems Understand the principles of design and operation of residential HVAC systems
E044020 Statics of Structures	lecture seminar: coached exercises	written examination	Calculate the centre of gravity of planar surfaces Calculate the reactions and the internal forces in plane and spatial isostatic structures Calculate the equilibrium shape of a loaded cable and the corresponding tension in that cable Verify the equilibrium taking into account friction

Course	Teaching methods	Evaluation methods	Course learning outcome
<i>Noot: leer- en evaluatievormen voorafgegaan door ** werden niet teruggevonden in de studiefiche</i>			
E080410 Design Theory 1	seminar: coached exercises	assignment	Having knowledge of the elementary principles of Architectural Design: formal characteristics, composition, geometry
E080710 Perception and Presentation Media 1	demonstration seminar: coached exercises	portfolio assignment	Attitudes: orientation towards critical selection of image components and synthetic graphical representation Skills: drawing skills related to the representation of spatial situations Concepts: projection plane, horizon, vanishing point, proportions, depth, framing, selection of image elements Insights: insight in the availability of graphical techniques and perspectival representations for investigation and communication of spatial situations
E080813 Digital Design 2	group work online seminar: practical PC room classes online seminar: coached exercises online lecture online group work seminar: practical PC room classes seminar: coached exercises lecture	assignment	to have a sound knowledge of geometrical concepts used in parametric design being able to apply advanced visualisation techniques to understand the necessary steps in digital fabrication to critically implement a parametric design approach
E081211 Architectural Design 2	practicum	participation assignment	Representing a project in word, image and model according to assigned formats. Dealing with suggestions and criticism of teachers and fellow students. Develop coherent arguments to support these strategies. Representing these strategies in word, image, and model according to assigned formats. To evaluate one's own strategy critically. To develop coherent design strategies to deal with that complexity, in which all decisions are related. Recognizing that a project is always a specific answer to that complexity. Recognizing the complexity of an assignment. Completing successfully an assignment of spatial, programmatic, contextual or conceptual complexity.
E084550 Introduction to Urban Analysis and Design	lecture		Analyse and evaluate a strategic urban project Name and explain the analytical instruments pertinent to the definition of strategic urban projects Explain and illustrate through examples key urban design concepts Understand the strategic meaning of handling urban development by means of the development of strategic urban projects Situating the urban project tradition within the historical development of the discipline
E080911 Perception and Presentation Media 2	project	assignment	
E081311 Architectural Design 3	practicum	assignment	To design a building and its surroundings in relation to multiple parameters.
E084560 Methods of Urban Analysis and Design	group work seminar	assignment report	Being able to make in a methodical way a spatial analysis on the level of urban planning and to integrate it in the urban design project. Have knowledge of presentation and presentation techniques for the scale of urban planning.
E081112 Architectural Design 1	practicum	participation assignment	Attitude and Position: Capability to develop a well-considered, justifiable and sensible design concept, based on a comprehensive interpretation of both the assignment and its context. Presentation: Capability and ability to communicate the design in a distinct, clear and coherent way, by means of distinguished documents; ability to create such documents with representational and graphic quality. Elaboration: Capability and ability to develop the design concept into distinguished, complementary aspects, and to achieve in this effectiveness, coherence and precision.

Course	Teaching methods	Evaluation methods	Course learning outcome
E000112 Calculus	lecture seminar	written examination with open questions skills test open book examination	Being able to reason in a logical and correct way at the appropriate level of abstraction.
E050012 Introduction to Structural Design	lecture fieldwork	written examination with open questions assignment oral examination	To explain the structural logic in built structures. To determine the consistency of elementary building elements. To ally elementary concepts in building physics. To design basic components in building construction. Building Materials: characteristics, applications and terminology
E080710 Perception and Presentation Media 1	demonstration seminar: coached exercises	portfolio assignment	Attitudes: orientation towards critical selection of image components and synthetic graphical representation Skills: drawing skills related to the representation of spatial situations Concepts: projection plane, horizon, vanishing point, proportions, depth, framing, selection of image elements Insights: insight in the availability of graphical techniques and perspectival representations for investigation and communication of spatial situations
E042012 Introduction to Strength of Materials	lecture seminar: coached exercises	written examination	Systematically analyse a problem by separation into partial problems. Be aware of analogies between different laws. Reduce / simplify problems to enable to solve them with known methods.
E080813 Digital Design 2	group work online seminar: practical PC room classes online seminar: coached exercises online lecture online group work seminar: practical PC room classes seminar: coached exercises lecture	assignment	to have a sound knowledge of geometrical concepts used in parametric design being able to apply advanced visualisation techniques to understand the necessary steps in digital fabrication to critically implement a parametric design approach
E020710 Physics 2	demonstration seminar: coached exercises lecture	written examination with open questions	To gain a good understanding of fundamental principles and concepts in thermodynamics and transport phenomena. Be able to model physics-related problems and develop problem solving skills.
E000611 Mathematical Analysis	lecture seminar: coached exercises lecture: plenary exercises	written examination open book examination	To calculate line and surface integrals using integral theorems. To solve standard types of ordinary and partial differential equations. To build and study mathematical models for problems in basic science. To implement the instructed mathematical techniques on a computer (with Maple). To calculate line and surface integrals directly. To gain insight in solution strategies for ordinary and partial differential equations.
E042800 Structural Load-Bearing Systems in Architectural Design	lecture seminar: coached exercises	open book examination	Determine the design value of multiple actions. Calculate forces and deformations in isostatic and hyperstatic structures.
E050410 Construction of Buildings	lecture seminar	written examination with open questions assignment written examination with multiple choice questions	Analyse and apply principles of horizontal and vertical stability of buildings. Understanding the pre-design of technical volumes, based on experience based data. Understand and explain basic principles and structural consequences of HVAC, internal sewage and elevator installations. Understand the integration challenge of centralized components of all typical technical installations. Recognizing typical technical structures in buildings. Create structural concepts and detailing in a correct way. Reason and argue the use of steel, timber, concrete, masonry and glass as building materials. Estimate the dimensions of a number of major building components by means of simplified formulas and rules-of-thumb. Mastering basic principles of terrain, soil and foundation techniques. Understanding of concepts and functioning of loadbearing constructions and building components.
E066160 Materials Science	lecture	written examination	1 INSIGHT: Insight into the relation between composition and structure of a material on the one hand and the properties of materials on the other. Insight into the limitations originating from the production process used to produce the structure or structural parts from a certain material. 2 SKILLS: Have the capacity to select a material or material class on the base of primary and secondary requirements posed to the material. Assess the problems that might arise if certain materials or production processes are used. 3 ATTITUDES: the materials selection process is based on much more than solely the mechanical properties of the material, also the production process of the structure or structural part should be considered.
E000124 Geometry	lecture seminar	written examination with open questions skills test open book examination	Being able to reason in a logical and correct way at the appropriate level of abstraction.
E080111 Architectural Theory 1	group work self-reliant study activities seminar lecture	written examination assignment	Knowing and understanding basic notions of early modern, modern, and contemporary architectural theory. Being able to apply the acquired insights to evaluate contemporary architectural theory and criticism. Being able to write a short paper on an architectural theoretical problem. Being able to perform elementary literature research on an architectural theoretical problem. Being able to place architectural historical notions in their own tradition and historical context. Being able to read source texts on architectural history. Recognizing the polymorphy of the reflection on architecture and of the (institutional) environments in which this reflection takes place. Explaining what the discipline of architectural theory consists of: to identify characteristics and limitations of the discipline in a historical perspective. Knowing the outline of the historical development of architectural history from the fifteenth Century. Identify a selection of key themes in early modern, modern, and contemporary architectural theory: the body metaphor, the meaning attributed to architecture, representation and architecture, the relation of architectural theory with the classical examples, the position of architecture among the arts, instrumentality or autonomy of architecture, legitimacy of architecture.
E080650 Design Theory 2	excursion seminar: coached exercises project lecture	oral examination assignment	Having knowledge of the main building types and having an awareness about how existing knowledge may be applied in new situations Analyzing or describing an architectural project making use of the proper graphic and textual means Having a precise terminology to communicate about an architectural artefact, a design brief, the problems posed while designing or the design process
E082710 History of Architecture 2	lecture self-reliant study activities seminar	oral examination report	To be able to articulate, both orally and in written form, a personal reflexion on a building, an architect, a topic from 20th Century Architectural history, drawing on the available critical terminology. To be able to use visual material in a significant way in order to illustrate or strengthen an argument related to 20th Century Architecture.

E081211 Architectural Design 2	practicum	participation assignment	<p>Representing a project in word, image and model according to assigned formats.</p> <p>Dealing with suggestions and criticism of teachers and fellow students.</p> <p>Develop coherent arguments to support these strategies.</p> <p>Representing these strategies in word, image, and model according to assigned formats.</p> <p>To evaluate one's own strategy critically.</p> <p>To develop coherent design strategies to deal with that complexity, in which all decisions are related.</p> <p>Recognizing that a project is always a specific answer to that complexity.</p> <p>Recognizing the complexity of an assignment.</p> <p>Completing successfully an assignment of spatial, programmatic, contextual or conceptual complexity.</p>
E003220 Statistics and Data Handling	lecture seminar: practical PC room classes seminar: coached exercises self-reliant study activities	written examination report	<p>Pay attention to the option to characterise a complex phenomenon by the use of simple parameters.</p>
E027610 Constructional Aspects of the Building Envelope	lecture self-reliant study activities seminar	oral examination assignment	
E084550 Introduction to Urban Analysis and Design	lecture		<p>Analyse and evaluate a strategic urban project</p> <p>Name and explain the analytical instruments pertinent to the definition of strategic urban projects</p> <p>Explain and illustrate through examples key urban design concepts</p> <p>Understand the strategic meaning of handling urban development by means of the development of strategic urban projects</p> <p>Situate the urban project tradition within the historical development of the discipline</p>
E080911 Perception and Presentation Media 2	project	assignment	
E081311 Architectural Design 3	practicum	assignment	<p>To design a building and its surroundings in relation to multiple parameters.</p>
E051222 Residential Comfort Systems	lecture practicum	written examination assignment	<p>Design a residential system for heating and ventilation. Size a simple heating system following standard calculation methods.</p> <p>Being able to make a well-thought choice of the required HVAC systems based on the desired performance and comfort</p> <p>Define the specifications of a heating and ventilation system in relation to the building design and the energy efficiency of the systems</p> <p>Understand the principles of design and operation of residential HVAC systems</p>
E084560 Methods of Urban Analysis and Design	group work seminar	assignment report	<p>Being able to make in a methodical way a spatial analysis on the level of urban planning and to integrate it in the urban design project.</p> <p>Have knowledge of presentation en presentation techniques for the scale of urban planning.</p>
E082600 History of Architecture 1	lecture seminar: coached exercises	written examination	<p>To be able to apply the acquired insights in the perception of concrete buildings and projects.</p> <p>To recognise the shape and space concepts of different trends in Western architecture, their constructive logic and the ideological intentions.</p> <p>To have knowledge of the development of architecture and urban development.</p> <p>To understand buildings as expressions of formal and ideological opinions within their historical context.</p> <p>To have a thorough command of the terminology of architecture.</p> <p>To have knowledge of the paradigmatic buildings and oeuvres in relation to the artistic, intellectual and socio-political context in which they originated.</p>
E080881 Digital Design 1	online demonstration online seminar online lecture	assignment	<p>To critically apply basic visualisation techniques.</p> <p>Producing two-dimensional layout documents.</p> <p>To have a sound knowledge of 3D basic concepts used architectural design.</p>
E075071 Introduction to Philosophy and the History of Ideas	lecture online seminar online lecture seminar	written examination	<p>Basic knowledge of the elementary concepts and theories on man, human knowledge, and culture, underlying the discipline of architecture and the dwelling</p> <p>culture of Europe, as dealt with in the course.</p>
E081112 Architectural Design 1	practicum	participation assignment	<p>Attitude and Position: Capability to develop a well-considered, justifiable and sensible design concept, based on a comprehensive interpretation of both the assignment and its context.</p> <p>Presentation: Capability and ability to communicate the design in a distinct, clear and coherent way, by means of distinguished documents; ability to create such documents with representational and graphic quality.</p> <p>Elaboration: Capability and ability to develop the design concept into distinguished, complementary aspects, and to achieve in this effectiveness, coherence and precision.</p>

Course	Teaching methods	Evaluation methods	Course learning outcome
<i>Noot: leer- en evaluatievormen voorafgegaan door ** werden niet teruggevonden in de studiefiche</i>			
E080710 Perception and Presentation Media 1	demonstration seminar: coached exercises	portfolio assignment	Attitudes: orientation towards critical selection of image components and synthetic graphical representation Skills: drawing skills related to the representation of spatial situations Concepts: projection plane, horizon, vanishing point, proportions, depth, framing, selection of image elements Insights: insight in the availability of graphical techniques and perspectival representations for investigation and communication of spatial situations
E081211 Architectural Design 2	practicum	participation assignment	Representing a project in word, image and model according to assigned formats. Dealing with suggestions and criticism of teachers and fellow students. Develop coherent arguments to support these strategies. Representing these strategies in word, image, and model according to assigned formats. To evaluate one's own strategy critically. To develop coherent design strategies to deal with that complexity, in which all decisions are related. Recognizing that a project is always a specific answer to that complexity. Recognizing the complexity of an assignment. Completing successfully an assignment of spatial, programmatic, contextual or conceptual complexity.
E084550 Introduction to Urban Analysis and Design	lecture	written examination	Analyse and evaluate a strategic urban project Name and explain the analytical instruments pertinent to the definition of strategic urban projects Explain and illustrate through examples key urban design concepts Understand the strategic meaning of handling urban development by means of the development of strategic urban projects Situating the urban project tradition within the historical development of the discipline
E080911 Perception and Presentation Media 2	project	assignment	
E081311 Architectural Design 3	practicum	assignment	To design a building and its surroundings in relation to multiple parameters.
E084560 Methods of Urban Analysis and Design	group work seminar	assignment report	Being able to make in a methodical way a spatial analysis on the level of urban planning and to integrate it in the urban design project. Have knowledge of presentation and presentation techniques for the scale of urban planning.
E081112 Architectural Design 1	practicum	participation assignment	Attitude and Position: Capability to develop a well-considered, justifiable and sensible design concept, based on a comprehensive interpretation of both the assignment and its context. Presentation: Capability and ability to communicate the design in a distinct, clear and coherent way, by means of distinguished documents; ability to create such documents with representational and graphic quality. Elaboration: Capability and ability to develop the design concept into distinguished, complementary aspects, and to achieve in this effectiveness, coherence and precision.

Course	Teaching methods	Evaluation methods	Course learning outcome
E000112 Calculus	lecture seminar	written examination with open questions skills test open book examination	Being able to formulate in a structure and precise way.
E050012 Introduction to Structural Design	lecture fieldwork		To explain the structural logic in built structures. To determine the consistency of elementary building elements. To ally elementary concepts in building physics. To design basic components in building construction. Building Materials: characteristics, applications and terminology
E080710 Perception and Presentation Media 1	demonstration seminar: coached exercises		Attitudes: orientation towards critical selection of image components and synthetic graphical representation Skills: drawing skills related to the representation of spatial situations Concepts: projection plane, horizon, vanishing point, proportions, depth, framing, selection of image elements Insights: insight in the availability of graphical techniques and perspectival representations for investigation and communication of spatial situations
E042012 Introduction to Strength of Materials	demonstration seminar: coached exercises lecture	written examination	To know the important concepts related to strength of materials.
E000611 Mathematical Analysis	lecture seminar: coached exercises lecture: plenary exercises	written examination open book examination	To calculate line and surface integrals using integral theorems. To solve standard types of ordinary and partial differential equations. To build and study mathematical models for problems in basic science. To implement the instructed mathematical techniques on a computer (with Maple). To calculate line and surface integrals directly. To gain insight in solution strategies for ordinary and partial differential equations.
E042800 Structural Load-Bearing Systems in Architectural Design	lecture seminar: coached exercises	open book examination	Correctly use specific technical terminology. Recognise different components in the organisation of the loadbearing structure.
E050410 Construction of Buildings	lecture seminar	written examination with open questions assignment written examination with multiple choice questions	Understanding of concepts and functioning of loadbearing constructions and building components. Understand and explain basic principles and structural consequences of HVAC, internal sewage and elevator installations. Understand the integration challenge of centralized components of all typical technical installations. Recognizing typical technical structures in buildings.
E066160 Materials Science	lecture	written examination	1 INSIGHT: Insight into the relation between composition and structure of a material on the one hand and the properties of materials on the other. Insight into the limitations originating from the production process used to produce the structure or structural parts from a certain material. 2 SKILLS: Have the capacity to select a material or material class on the base of primary and secondary requirements posed to the material. Assess the problems that might arise if certain materials or production processes are used. 3 ATTITUDES: the materials selection process is based on much more than solely the mechanical properties of the material, also the production process of the structure or structural part should be considered.
E000124 Geometry	lecture seminar	written examination with open questions skills test open book examination	Being able to formulate in a structured and precise way.
E080111 Architectural Theory 1	group work self-reliant study activities seminar lecture		Knowing and understanding basic notions of early modern, modern, and contemporary architectural theory. Being able to apply the acquired insights to evaluate contemporary architectural theory and criticism. Being able to write a short paper on an architectural theoretical problem. Being able to perform elementary literature research on an architectural theoretical problem. Being able to place architectural historical notions in their own tradition and historical context. Being able to read source texts on architectural history. Recognizing the polymorphy of the reflection on architecture and of the (institutional) environments in which this reflection takes place. Explaining what the discipline of architectural theory consists of: to identify characteristics and limitations of the discipline in a historical perspective. Knowing the outline of the historical development of architectural history from the fifteenth Century. Identify a selection of key themes in early modern, modern, and contemporary architectural theory: the body metaphor, the meaning attributed to architecture, representation and architecture, the relation of architectural theory with the classical examples, the position of architecture among the arts, instrumentality or autonomy of architecture, legitimacy of architecture.
E080650 Design Theory 2	excursion seminar: coached exercises project lecture	oral examination assignment	Having knowledge of the main building types and having an awareness about how existing knowledge may be applied in new situations Analyzing or describing an architectural project making use of the proper graphic and textual means Having a precise terminology to communicate about an architectural artefact, a design brief, the problems posed while designing or the design process
E082710 History of Architecture 2	seminar self-reliant study activities	oral examination report	Be able to use a critical terminology linked to the history of 20th Century Architecture (Modernism vs Classicism; Rationality; Authenticity; Utopia; Dwelling;...) To be able to use visual material in a significant way in order to illustrate or strengthen an argument related to 20th Century Architecture. To be able to articulate, both orally and in written form, a personal reflexion on a building, an architect, a topic from 20th Century Architectural history, drawing on the available critical terminology. Understand and be able to explain several (stylistic) tendencies from the 20th Century (Purism, Functionalism, Neue Sachlichkeit, International Style, Modern Classicism, Brutalism, Postmodernism,...). Having enhanced one's experience and skill in literature research in relation to architectural history research (including assembling a bibliography and critically evaluating primary and secondary sources)
E084110 History of Urban Planning	lecture	written examination with multiple choice questions	Situate urban plans and developments in their time frame. Link historical urbanistic plans to the real spatial context. Consider historical urban developments from an analytical and questioning point of view. Identify and reconstitute the main principles, practices and tools of the making of an urban plan or the development of an urban environment or city. Situate the history of urbanism in a larger socio-economical, cultural context.

E081211 Architectural Design 2	practicum		<p>Representing a project in word, image and model according to assigned formats.</p> <p>Dealing with suggestions and criticism of teachers and fellow students.</p> <p>Develop coherent arguments to support these strategies.</p> <p>Representing these strategies in word, image, and model according to assigned formats.</p> <p>To evaluate one's own strategy critically.</p> <p>To develop coherent design strategies to deal with that complexity, in which all decisions are related.</p> <p>Recognizing that a project is always a specific answer to that complexity.</p> <p>Recognizing the complexity of an assignment.</p> <p>Completing successfully an assignment of spatial, programmatic, contextual or conceptual complexity.</p>
E027610 Constructional Aspects of the Building Envelope	lecture self-reliant study activities seminar	oral examination assignment	
E084550 Introduction to Urban Analysis and Design	lecture	written examination	<p>Analyse and evaluate a strategic urban project</p> <p>Name and explain the analytical instruments pertinent to the definition of strategic urban projects</p> <p>Explain and illustrate through examples key urban design concepts</p> <p>Understand the strategic meaning of handling urban development by means of the development of strategic urban projects</p> <p>Situate the urban project tradition within the historical development of the discipline</p>
E080911 Perception and Presentation Media 2	project		
E052720 Concrete Technology	lecture seminar	oral examination	To be acquainted with the constituent materials of concrete, concrete mix design, and the properties of fresh, hardening and hardened concrete.
E051222 Residential Comfort Systems	lecture practicum	written examination assignment	<p>Design a residential system for heating and ventilation. Size a simple heating system following standard calculation methods.</p> <p>Being able to make a well-thought choice of the required HVAC systems based on the desired performance and comfort</p> <p>Define the specifications of a heating and ventilation system in relation to the building design and the energy efficiency of the systems</p> <p>Understand the principles of design and operation of residential HVAC systems</p>
E084560 Methods of Urban Analysis and Design	group work seminar	assignment report	<p>Being able to make in a methodical way a spatial analysis on the level of urban planning and to integrate it in the urban design project.</p> <p>Have knowledge of presentation en presentation techniques for the scale of urban planning.</p>
E082600 History of Architecture 1	lecture seminar: coached exercises	written examination	<p>To be able to apply the acquired insights in the perception of concrete buildings and projects.</p> <p>To recognise the shape and space concepts of different trends in Western architecture, their constructive logic and the ideological intentions.</p> <p>To have knowledge of the development of architecture and urban development.</p> <p>To understand buildings as expressions of formal and ideological opinions within their historical context.</p> <p>To have a thorough command of the terminology of architecture.</p> <p>To have knowledge of the paradigmatic buildings and oeuvres in relation to the artistic, intellectual and socio-political context in which they originated.</p>
E080881 Digital Design 1	online demonstration online seminar online lecture	assignment	<p>To critically apply basic visualisation techniques.</p> <p>Producing two-dimensional layout documents.</p> <p>To have a sound knowledge of 3D basic concepts used architectural design.</p>
E044020 Statics of Structures	lecture seminar: coached exercises	written examination	<p>Calculate the centre of gravity of planar surfaces</p> <p>Calculate the reactions and the internal forces in plane and spatial isostatic structures</p>

Course	Teaching methods	Evaluation methods	Course learning outcome
E000112 Calculus	lecture seminar	written examination with open questions skills test open book examination	Knowing the basic methods for the mathematical analysis of functions and being able to apply the corresponding techniques. Being able to perform computations by hand or with the computer package Maple efficiently and quickly.
E050012 Introduction to Structural Design	lecture fieldwork	written examination with open questions assignment oral examination	To explain the structural logic in built structures. To determine the consistency of elementary building elements. To ally elementary concepts in building physics. To design basic components in building construction. Building Materials: characteristics, applications and terminology
E080410 Design Theory 1	seminar: coached exercises		Having knowledge of the elementary principles of Architectural Design: formal characteristics, composition, geometry
E080710 Perception and Presentation Media 1	demonstration seminar: coached exercises		Attitudes: orientation towards critical selection of image components and synthetic graphical representation Skills: drawing skills related to the representation of spatial situations Concepts: projection plane, horizon, vanishing point, proportions, depth, framing, selection of image elements Insights: insight in the availability of graphical techniques and perspectival representations for investigation and communication of spatial situations
E080813 Digital Design 2	group work online seminar: practical PC room classes online seminar: coached exercises online lecture online group work seminar: practical PC room classes seminar: coached exercises lecture	assignment	to have a sound knowledge of geometrical concepts used in parametric design being able to apply advanced visualisation techniques to understand the necessary steps in digital fabrication to critically implement a parametric design approach
E050410 Construction of Buildings	seminar	assignment	Analyse and apply principles of horizontal and vertical stability of buildings. Create structural concepts and detailing in a correct way. Reason and argue the use of steel, timber, concrete, masonry and glass as building materials. Estimate the dimensions of a number of major building components by means of simplified formulas and rules-of-thumb. Understanding of concepts and functioning of loadbearing constructions and building components.
E000124 Geometry	lecture seminar	written examination with open questions skills test open book examination	Being able to use algebraic concepts and methods, both in a geometrical and in an abstract context. Being able to efficiently and precisely perform algebraic computations by hand or with the computer package Maple.
E081211 Architectural Design 2	practicum	participation assignment	Representing a project in word, image and model according to assigned formats. Dealing with suggestions and criticism of teachers and fellow students. Develop coherent arguments to support these strategies. Representing these strategies in word, image, and model according to assigned formats. To evaluate one's own strategy critically. To develop coherent design strategies to deal with that complexity, in which all decisions are related. Recognizing that a project is always a specific answer to that complexity. Recognizing the complexity of an assignment. Completing successfully an assignment of spatial, programmatic, contextual or conceptual complexity.
E003220 Statistics and Data Handling	self-reliant study activities	report	Decide on characteristics of a population based on analysis of samples. Critically evaluate the information coming from small samples. Be able to analyse large data sets statistically. Analyse a trend in data using regression analysis. Investigate whether a sample comes from a population behaving according to a certain statistical model. Analyse the output of an experiment by use of frequency tables. Calculate the chance that an event will occur. Investigate whether the difference between populations is relevant.
E027610 Constructional Aspects of the Building Envelope	lecture self-reliant study activities seminar	oral examination assignment	
E020610 Physics 1	guided self-study self-reliant study activities seminar practicum lecture demonstration	written examination report participation	To master basic research skills: accuracy in measurements, critical sense in analyzing experimental data, correctness in reporting. To understand the physical laws and concepts of the covered chapters. To be able to solve physics problems by applying these concepts.
E080911 Perception and Presentation Media 2	project		
E081311 Architectural Design 3	practicum		To design a building and its surroundings in relation to multiple parameters.
E051222 Residential Comfort Systems	lecture practicum	written examination assignment	Design a residential system for heating and ventilation. Size a simple heating system following standard calculation methods. Being able to make a well-thought choice of the required HVAC systems based on the desired performance and comfort Define the specifications of a heating and ventilation system in relation to the building design and the energy efficiency of the systems Understand the principles of design and operation of residential HVAC systems
E084560 Methods of Urban Analysis and Design	group work seminar	assignment report	Being able to make in a methodical way a spatial analysis on the level of urban planning and to integrate it in the urban design project. Have knowledge of presentation and presentation techniques for the scale of urban planning.
E081112 Architectural Design 1	practicum	participation assignment	Attitude and Position: Capability to develop a well-considered, justifiable and sensible design concept, based on a comprehensive interpretation of both the assignment and its context. Presentation: Capability and ability to communicate the design in a distinct, clear and coherent way, by means of distinguished documents; ability to create such documents with representational and graphic quality. Elaboration: Capability and ability to develop the design concept into distinguished, complementary aspects, and to achieve in this effectiveness, coherence and precision.

Course	Teaching methods	Evaluation methods	Course learning outcome
E050012 Introduction to Structural Design	lecture fieldwork		To explain the structural logic in built structures. To determine the consistency of elementary building elements. To ally elementary concepts in building physics. To design basic components in building construction. Building Materials: characteristics, applications and terminology
E080410 Design Theory 1	seminar: coached exercises		Having knowledge of the elementary principles of Architectural Design: formal characteristics, composition, geometry
E080710 Perception and Presentation Media 1	demonstration seminar: coached exercises		Attitudes: orientation towards critical selection of image components and synthetic graphical representation Skills: drawing skills related to the representation of spatial situations Concepts: projection plane, horizon, vanishing point, proportions, depth, framing, selection of image elements Insights: insight in the availability of graphical techniques and perspectival representations for investigation and communication of spatial situations
E080111 Architectural Theory 1	group work self-reliant study activities seminar lecture		Knowing and understanding basic notions of early modern, modern, and contemporary architectural theory. Being able to apply the acquired insights to evaluate contemporary architectural theory and criticism. Being able to write a short paper on an architectural theoretical problem. Being able to perform elementary literature research on an architectural theoretical problem. Being able to place architectural historical notions in their own tradition and historical context. Being able to read source texts on architectural history. Recognizing the polymorphy of the reflection on architecture and of the (institutional) environments in which this reflection takes place. Explaining what the discipline of architectural theory consists of: to identify characteristics and limitations of the discipline in a historical perspective. Knowing the outline of the historical development of architectural history from the fifteenth Century. Identify a selection of key themes in early modern, modern, and contemporary architectural theory: the body metaphor, the meaning attributed to architecture, representation and architecture, the relation of architectural theory with the classical examples, the position of architecture among the arts, instrumentality or autonomy of architecture, legitimacy of architecture.
E082710 History of Architecture 2	seminar self-reliant study activities	report	To be able to articulate, both orally and in written form, a personal reflexion on a building, an architect, a topic from 20th Century Architectural history, drawing on the available critical terminology.
E081211 Architectural Design 2	practicum		Representing a project in word, image and model according to assigned formats. Dealing with suggestions and criticism of teachers and fellow students. Develop coherent arguments to support these strategies. Representing these strategies in word, image, and model according to assigned formats. To evaluate one's own strategy critically. To develop coherent design strategies to deal with that complexity, in which all decisions are related. Recognizing that a project is always a specific answer to that complexity. Recognizing the complexity of an assignment. Completing successfully an assignment of spatial, programmatic, contextual or conceptual complexity.
E050310 Building Physics	lecture seminar practicum		Be able to derive and build calculation methods and models in building physics, and be able to use these methods when evaluating building physics performances. Apply and integrate heat and moisture insulation in the construction and building design in a physically correct way. Define typical variables in building physics and relate them to hygrothermal material - and construction characteristics
E003220 Statistics and Data Handling	self-reliant study activities seminar: practical PC room classes	report	Decide on characteristics of a population based on analysis of samples. Critically evaluate the information coming from small samples. Be able to analyse large data sets statistically. Analyse a trend in data using regression analysis. Investigate whether a sample comes from a population behaving according to a certain statistical model. Analyse the output of an experiment by use of frequency tables. Investigate whether the difference between populations is relevant.
E027610 Constructional Aspects of the Building Envelope	lecture self-reliant study activities seminar		
E020610 Physics 1	guided self-study self-reliant study activities seminar practicum lecture demonstration	written examination report participation	To master basic research skills: accuracy in measurements, critical sense in analyzing experimental data, correctness in reporting. To understand the physical laws and concepts of the covered chapters. To be able to solve physics problems by applying these concepts.
E080911 Perception and Presentation Media 2	project		
E081311 Architectural Design 3	practicum		To design a building and its surroundings in relation to multiple parameters.
E051222 Residential Comfort Systems	lecture practicum		Design a residential system for heating and ventilation. Size a simple heating system following standard calculation methods. Being able to make a well-thought choice of the required HVAC systems based on the desired performance and comfort Define the specifications of a heating and ventilation system in relation to the building design and the energy efficiency of the systems Understand the principles of design and operation of residential HVAC systems
E084560 Methods of Urban Analysis and Design	group work seminar	assignment report	Being able to make in a methodical way a spatial analysis on the level of urban planning and to integrate it in the urban design project. Have knowledge of presentation and presentation techniques for the scale of urban planning.

Course	Teaching methods	Evaluation methods	Course learning outcome
<i>Noot: leer- en evaluatievormen voorafgegaan door ** werden niet teruggevonden in de studiefiche</i>			
E050012 Introduction to Structural Design	lecture fieldwork	written examination with open questions assignment oral examination	To explain the structural logic in built structures. To determine the consistency of elementary building elements. To ally elementary concepts in building physics. To design basic components in building construction. Building Materials: characteristics, applications and terminology
E080410 Design Theory 1	seminar: coached exercises	written examination	Having knowledge of the elementary principles of Architectural Design: formal characteristics, composition, geometry
E080710 Perception and Presentation Media 1	demonstration seminar: coached exercises		Attitudes: orientation towards critical selection of image components and synthetic graphical representation Skills: drawing skills related to the representation of spatial situations Concepts: projection plane, horizon, vanishing point, proportions, depth, framing, selection of image elements Insights: insight in the availability of graphical techniques and perspectival representations for investigation and communication of spatial situations
E050410 Construction of Buildings	seminar	assignment	Understanding of concepts and functioning of loadbearing constructions and building components. Create structural concepts and detailing in a correct way. Reason and argue the use of steel, timber, concrete, masonry and glass as building materials.
E080111 Architectural Theory 1	group work self-reliant study activities seminar lecture	written examination assignment	Knowing and understanding basic notions of early modern, modern, and contemporary architectural theory. Being able to apply the acquired insights to evaluate contemporary architectural theory and criticism. Being able to write a short paper on an architectural theoretical problem. Being able to perform elementary literature research on an architectural theoretical problem. Being able to place architectural historical notions in their own tradition and historical context. Being able to read source texts on architectural history. Recognizing the polymorphy of the reflection on architecture and of the (institutional) environments in which this reflection takes place. Explaining what the discipline of architectural theory consists of: to identify characteristics and limitations of the discipline in a historical perspective. Knowing the outline of the historical development of architectural history from the fifteenth Century. Identify a selection of key themes in early modern, modern, and contemporary architectural theory: the body metaphor, the meaning attributed to architecture, representation and architecture, the relation of architectural theory with the classical examples, the position of architecture among the arts, instrumentality or autonomy of architecture, legitimacy of architecture.
E082710 History of Architecture 2	seminar self-reliant study activities	oral examination report	Be able to use a critical terminology linked to the history of 20th Century Architecture (Modernism vs Classicism; Rationality; Authenticity; Utopia; Dwelling...) To be able to use visual material in a significant way in order to illustrate or strengthen an argument related to 20th Century Architecture. To be able to articulate, both orally and in written form, a personal reflexion on a building, an architect, a topic from 20th Century Architectural history, drawing on the available critical terminology. Understand and be able to explain several (stylistic) tendencies from the 20th Century (Purism, Functionalism, Neue Sachlichkeit, International Style, Modern Classicism, Brutalism, Postmodernism,...). Having enhanced one's experience and skill in literature research in relation to architectural history research (including assembling a bibliography and critically evaluating primary and secondary sources)
E081211 Architectural Design 2	practicum	participation assignment	Representing a project in word, image and model according to assigned formats. Dealing with suggestions and criticism of teachers and fellow students. Develop coherent arguments to support these strategies. Representing these strategies in word, image, and model according to assigned formats. To evaluate one's own strategy critically. To develop coherent design strategies to deal with that complexity, in which all decisions are related. Recognizing that a project is always a specific answer to that complexity. Recognizing the complexity of an assignment. Completing successfully an assignment of spatial, programmatic, contextual or conceptual complexity.
E080210 Architectural Theory 2	lecture online seminar online lecture lecture: plenary exercises seminar	oral examination	The student is expected to be able to formulate and discuss from a personal point of view on the central topics concerning the experience of place and the condition of modernity within the course, both in writing and in conversation.
E003220 Statistics and Data Handling	self-reliant study activities	report	Decide on characteristics of a population based on analysis of samples. Critically evaluate the information coming from small samples. Be able to analyse large data sets statistically. Analyse a trend in data using regression analysis. Investigate whether a sample comes from a population behaving according to a certain statistical model. Analyse the output of an experiment by use of frequency tables. Calculate the chance that an event will occur. Investigate whether the difference between populations is relevant.
E027610 Constructional Aspects of the Building Envelope	lecture self-reliant study activities seminar	oral examination assignment	
E084550 Introduction to Urban Analysis and Design	lecture	written examination	Analyse and evaluate a strategic urban project Name and explain the analytical instruments pertinent to the definition of strategic urban projects Explain and illustrate through examples key urban design concepts Understand the strategic meaning of handling urban development by means of the development of strategic urban projects Situate the urban project tradition within the historical development of the discipline
E080911 Perception and Presentation Media 2	project	assignment	
E081311 Architectural Design 3	practicum	assignment	To design a building and its surroundings in relation to multiple parameters. To deal creatively with the 'concrete' and the 'quality of life' on architectural design. To deal creatively with the impact of materialisation and the act of making on architectural design.
E051222 Residential Comfort Systems	lecture practicum	written examination assignment	Design a residential system for heating and ventilation. Size a simple heating system following standard calculation methods. Being able to make a well-thought choice of the required HVAC systems based on the desired performance and comfort Define the specifications of a heating and ventilation system in relation to the building design and the energy efficiency of the systems Understand the principles of design and operation of residential HVAC systems
E084560 Methods of Urban Analysis and Design	group work seminar	assignment report	Being able to make in a methodical way a spatial analysis on the level of urban planning and to integrate it in the urban design project. Have knowledge of presentation en presentation techniques for the scale of urban planning.

Attitude and Position: Capability to develop a well-considered, justifiable and sensible design concept, based on a comprehensive interpretation of both the assignment and its context.

Presentation: Capability and ability to communicate the design in a distinct, clear and coherent way, by means of distinguished documents; ability to create such documents with representational and graphic quality.

Elaboration: Capability and ability to develop the design concept into distinguished, complementary aspects, and to achieve in this effectiveness, coherence and precision.

Course	Teaching methods	Evaluation methods	Course learning outcome
E080111 Architectural Theory 1	group work self-reliant study activities seminar lecture		Knowing and understanding basic notions of early modern, modern, and contemporary architectural theory. Being able to apply the acquired insights to evaluate contemporary architectural theory and criticism. Being able to write a short paper on an architectural theoretical problem. Being able to perform elementary literature research on an architectural theoretical problem. Being able to place architectural historical notions in their own tradition and historical context. Being able to read source texts on architectural history. Recognizing the polymorphy of the reflection on architecture and of the (institutional) environments in which this reflection takes place. Explaining what the discipline of architectural theory consists of: to identify characteristics and limitations of the discipline in a historical perspective. Knowing the outline of the historical development of architectural history from the fifteenth Century. Identify a selection of key themes in early modern, modern, and contemporary architectural theory: the body metaphor, the meaning attributed to architecture, representation and architecture, the relation of architectural theory with the classical examples, the position of architecture among the arts, instrumentality or autonomy of architecture, legitimacy of architecture.
E080650 Design Theory 2	excursion seminar: coached exercises project lecture	oral examination assignment	Having knowledge of the main building types and having an awareness about how existing knowledge may be applied in new situations Analyzing or describing an architectural project making use of the proper graphic and textual means Having a precise terminology to communicate about an architectural artefact, a design brief, the problems posed while designing or the design process
E081211 Architectural Design 2	practicum	participation assignment	Representing a project in word, image and model according to assigned formats. Dealing with suggestions and criticism of teachers and fellow students. Develop coherent arguments to support these strategies. Representing these strategies in word, image, and model according to assigned formats. To evaluate one's own strategy critically. To develop coherent design strategies to deal with that complexity, in which all decisions are related. Recognizing that a project is always a specific answer to that complexity. Recognizing the complexity of an assignment. Completing successfully an assignment of spatial, programmatic, contextual or conceptual complexity.
E080911 Perception and Presentation Media 2	project		
E081311 Architectural Design 3	practicum	assignment	To design a building and its surroundings in relation to multiple parameters. To deal creatively with the 'concrete' and the 'quality of life' on architectural design.
E084560 Methods of Urban Analysis and Design	group work seminar	assignment report	Being able to make in a methodical way a spatial analysis on the level of urban planning and to integrate it in the urban design project. Have knowledge of presentation en presentation techniques for the scale of urban planning.
E081112 Architectural Design 1	practicum		Attitude and Position: Capability to develop a well-considered, justifiable and sensible design concept, based on a comprehensive interpretation of both the assignment and its context. Presentation: Capability and ability to communicate the design in a distinct, clear and coherent way, by means of distinguished documents; ability to create such documents with representational and graphic quality. Elaboration: Capability and ability to develop the design concept into distinguished, complementary aspects, and to achieve in this effectiveness, coherence and precision.

Course	Teaching methods	Evaluation methods	Course learning outcome
<i>Noot: leer- en evaluatievormen voorafgegaan door ** werden niet teruggevonden in de studiefiche</i>			
E050410 Construction of Buildings	lecture seminar	written examination with open questions assignment written examination with multiple choice questions	Reason and argue the use of steel, timber, concrete, masonry and glass as building materials.
E066160 Materials Science	lecture	written examination	1 INSIGHT: Insight into the relation between composition and structure of a material on the one hand and the properties of materials on the other. Insight into the limitations originating from the production process used to produce the structure or structural parts from a certain material. 2 SKILLS: Have the capacity to select a material or material class on the base of primary and secondary requirements posed to the material. Assess the problems that might arise if certain materials or production processes are used. 3 ATTITUDES: the materials selection process is based on much more than solely the mechanical properties of the material, also the production process of the structure or structural part should be considered.
E027610 Constructional Aspects of the Building Envelope	lecture self-reliant study activities seminar		
E084550 Introduction to Urban Analysis and Design	lecture	written examination	Analyse and evaluate a strategic urban project Name and explain the analytical instruments pertinent to the definition of strategic urban projects Explain and illustrate through examples key urban design concepts Understand the strategic meaning of handling urban development by means of the development of strategic urban projects Situate the urban project tradition within the historical development of the discipline
E080911 Perception and Presentation Media 2	project		
E052720 Concrete Technology	lecture seminar	oral examination	To be acquainted with the constituent materials of concrete, concrete mix design, and the properties of fresh, hardening and hardened concrete.
E051222 Residential Comfort Systems	lecture practicum	written examination assignment	Design a residential system for heating and ventilation. Size a simple heating system following standard calculation methods. Being able to make a well-thought choice of the required HVAC systems based on the desired performance and comfort Define the specifications of a heating and ventilation system in relation to the building design and the energy efficiency of the systems Understand the principles of design and operation of residential HVAC systems
E084560 Methods of Urban Analysis and Design	group work seminar	assignment report	Being able to make in a methodical way a spatial analysis on the level of urban planning and to integrate it in the urban design project. Have knowledge of presentation en presentation techniques for the scale of urban planning.

Course	Teaching methods	Evaluation methods	Course learning outcome
<i>Noot: leer- en evaluatievormen voorafgegaan door ** werden niet teruggevonden in de studiefiche</i>			
E066160 Materials Science	lecture	written examination	1 INSIGHT: Insight into the relation between composition and structure of a material on the one hand and the properties of materials on the other. Insight into the limitations originating from the production process used to produce the structure or structural parts from a certain material. 2 SKILLS: Have the capacity to select a material or material class on the base of primary and secondary requirements posed to the material. Assess the problems that might arise if certain materials or production processes are used. 3 ATTITUDES: the materials selection process is based on much more than solely the mechanical properties of the material, also the production process of the structure or structural part should be considered.
E080911 Perception and Presentation Media 2	project		
E081311 Architectural Design 3	practicum		To design a building and its surroundings in relation to multiple parameters.

