



COURSE DESCRIPTION CARD - SYLLABUS

Course name

History of Architecture 2 [S1Arch1>HA2]

Course

Field of study
Architecture

Year/Semester
1/2

Area of study (specialization)
–

Profile of study
general academic

Level of study
first-cycle

Course offered in
Polish

Form of study
full-time

Requirements
compulsory

Number of hours

Lecture
0

Laboratory classes
0

Other
0

Tutorials
0

Projects/seminars
0

Number of credit points

2,00

Coordinators

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Lecturers

Prerequisites

- Student has knowledge of art, history, geography, mathematics, physics, useful to understand the simple relations in structures over the centuries in different climatic and cultural conditions. - Student has knowledge of development trends and most important achievements in the scope of architectural designing and urban planning. - Student knows the basic methods, tools and work techniques (including architectural drawing), necessary for the preparing notes during the lectures and semester works. - Student can acquire information from publications, data bases and other Polish and English sources, can interpret the said information and draw conclusions as well as voice and justify opinions. - Student has self-education skills. - Student has language skills in the field of science and scientific disciplines relevant to architecture and urban planning, accordance with the requirements at B2 level for the Common European Framework of Reference for Language. - Student use IT techniques, including art means (architectural drawing) respectively to the performance of tasks typical for preparation semester works. - Student understands the need for lifelong learning; can inspire and organize process of learning other people. - Student can work and cooperate in a team, assuming a number of different roles therein. - Student can think and act in an entrepreneurial manner.

Course objective

1. Explains the continuity of European architectural tradition in the plane of evolution of the needs, technique and beauty in the period from Gothic to the Renaissance. 2. Defines relations between the technical capabilities and the level of satisfaction of material and spiritual needs. 3. Subject draws attention to the origin of local characteristics of architecture in the same period in different countries and regions from Gothic to Renaissance. 4. Introduction to the most important in these periods works of art and creators of European architecture. 5. Teaches about unchangeable rules of creative thinking and enquiry to new functional, technical and formal solutions. 6. Allows to learn basic issues related to the urban planning and architectural composition. 7. Realizes the differences in the human and monumental scale. 8. Performs work in a small group, develops interpersonal skills of students and finding themselves in the different roles. 9. It's a platform to practice the skills of building analysis from different periods. 10. Provides a comparative assessment of the methods of graphical presentation self-work and colleagues

Course-related learning outcomes

Knowledge:

Student knows and understands:

B.W1. theory of architecture and urban planning useful for formulating and solving simple tasks in the field of architectural and urban design as well as spatial planning;

B.W2. the history of architecture and urban planning, contemporary architecture, heritage protection to the extent necessary for architectural, urban and planning creativity;

C.W2. determinants of architectural and urban design resulting from human psychophysical capabilities;

Skills:

Student can:

B.U1. integrate knowledge from various areas of science, including history, history of architecture, history of art and protection of cultural goods in solving engineering tasks;

B.U2. recognize the importance of non-technical aspects and effects of an architect's design activity, including its impact on the cultural and natural environment;

Social competences:

Student is capable of:

B.S1. formulating opinions on the achievements of architecture and town planning, their determinants and other aspects of the architect's activity, as well as providing information and opinions;

B.S2. reliable self-assessment, formulating constructive criticism regarding architectural and urban planning activities.

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Lectures of the subject of History of Architecture 2 end with exam. There is proposed two terms of exam in the session, but the second term is resit examination.

Examination of the History of Architecture course is written and drawn.

Summative assessment:

During the semester Students are asked to prepare drawings in individual sketchbooks. The list of compulsory drawings are specified after each lecture. Additional drawings are welcomed and should represent notes from lectures. Sketchbook is assessed cumulatively at the end of a semester. The grade from Sketchbook is the first component of the final grade [40%]. The second component is a result of online tests from Gothic and Renaissance separately [40%]. The third component is a result of an open test (problems and comparative studies) - conducted in one of the forms: online eKursy open question test/ regular written exam/oral exam (online or regular) [20%] Grading algorithm is based on a cumulative result from all parts of the exam.

Grades: 2,0; 3,0; 3,5; 4,0; 4,5; 5,0

Programme content

1. Introduction to Middle Ages in Europe. Main aspects political situation in Europe; comments on medieval crusades; overview of main trends in philosophical discourse; medieval society (tripartite model); medieval economy;

2. Gothic architecture in comparative studies with Romanesque. Main differences between spatial

organization of a church in Romanesque; Structural elements of a French Gothic cathedral; comparison between ad quadratum and bay system; types of pointed arches; evolution of a curvilinear ceilings; Types of structures and its consequences; tracery types and gothic details; verticalisation: comparison of height and structural system of gothic cathedrals; nave wall articulation comparison; the flying buttress system, vectorial analysis;

3. The French Gothic Cathedral. Periodisation; the beginnings: Abbey Saint Denis; case studies with development analysis (spatial disposition, system of bays, type of vaults, articulation of nave wall, outer structural system, western facade composition, tracery types, windows and stained glass, details, sculptural program): Notre Dame de Paris, Notre Dame du Chartres, Notre Dame in Reims, cathedral in Amiens, Beauvais cathedral.

4. French Rayonnant and Flamboyant. Context of the shift in building strategies; architectural drawings (Villard de Honnecourt); Saint Denis abbey (refurbishment of the body); development of a Gothic pier; Palais de la Cité & Sainte Chapelle; Clermont-Ferrand cathedral; Albi cathedral (south gate); French Gothic cathedrals outside of France: Strasbourg Cathedral; Cologne Cathedral, Prague cathedral.

5. English Gothic. Political context of England at the dawn of Gothic and later conflicts with France; periodisation: Early English, Decorated Style, Perpendicular Style; the beginnings: Canterbury; Comparative studies between French Gothic and English Gothic cathedrals; Early English in three types: Salisbury, Lincoln, Wells; English Decorated: Westminster Abbey in London, York, elements in mentioned earlier cathedrals: Angel's Choir of Lincoln, parts of Wells cathedral; Perpendicular Style: evolution of English vaults; King's College Chapel in Cambridge; Henry VII Chapel in Westminster Abbey;

6. Gothic in The Holy Roman Empire. East of Ille-de-France - specificity, political context, uniqueness against uniformity principle; Periodisation: Early Gothic, High Gothic, Backsteingotik, Sondergotik; Case studies: Magdeburg, Lausanne, Metz, Marburg; Saint Mary's church in Lubeck; Magdeburg City Rights, Lubeck City Rights; aisled hall churches: Nuremberg, Toruń, Cracow, Stargard; Reductive Gothic: Munich, Gdańsk; other Late Gothic examples: Cathedral in Verden van der Aller.

7. Gothic in Poland. Polish Gothic political context; Periodisation: Early Gothic, High Gothic, Late Gothic; influences of Cistercian architecture and later - mendicant orders (Franciscans, Dominicans); influences of Reductive Gothic and Hanseatic League; Polish cathedrals (Wrocław, Cracow, Gniezno, Poznan); two systems of structural design in Polish cathedrals; case studies: Gothic in Poznań; international Style in Polish Gothic (Church of the Holy Cross in Cracow, Church of Saint Andrew in Gosławice, Church of Saint Gertrude in Darłowo).

8. Monasticism and Italian Gothic. Introduction to monasticism (traits and significance); figures of European monasticism; Military Orders; case study of castle of Teutonic Order in Marienburg (Malbork); Cistercian architecture: Cîteaux and the Ideal Monastery; cistercians in Poland (filiations and divisions); case studies of Polish Cistercians (Sulejów, Wąchock); Mendicant orders (Dominicans, Franciscans): political contexts; Case studies: Jacobin Convent in Toulouse, Polish churches of Dominicans, Dominicans in Italy, Franciscans in Italy: case studies: San Francesco Church in Asissi, San Francesco Church in Bologna, Santa Croce Church in Florence; Gothic cathedrals in Italy: Siena, Florence, Orvieto, Milan;

9. Introduction to Renaissance. Humanitas and humanism; new cognitive attitude in the turn of XV century; context of religious movements (Reformation); timeline and periodisation; specificity of Italian culture; the city of Florence; cultural context of Florentine architecture; Protorenaissance in Florence; Filippo Brunelleschi (Ospedale degli Innocenti, Santa Maria del Fiore - dome, San Lorenzo in Florence with Old Sacristy, Pazzi Chapel at Santa Croce as a chapter house, Santa Maria degli Angeli, Santo Spirito); Palaces of Florence: composition, spatial disposition, case studies: Palazzo Medici, Palazzo Pitti, Palazzo Strozzi, Palazzo Rucellai; Leon B. Alberti (Facade of Santa Maria Novella in Florence, Tempio Malatestino in Rimini, San Sebastiano, San Andrea in Mantova);

10. Renaissance in Italy: Milan and Rome. City of Milan under the authority of the Sforza family, Filarete: Sforzinda, Castello Sforzesco, Ospedale Maggiore; Leonardo da Vinci as a polymath; Donato Bramante: Santa Maria Presso San Satiro in Milan, Rome: Santa Maria della Pace, Tempietto San Pietro in Montorio, Cortile di Belvedere and spiral staircase; Saint Peter's Basilica: Bramante, Raphael, Giuliano da Sangallo the Younger, Antonio da Sangallo, the Younger, Baldassare Peruzzi, Michelangelo; Raphael Santi: Palazzo Branconio dell'Aquila, Villa Madama; Giulio Romano: Palazzo del Te in Mantova, Palazzo Ducale, Michelangelo: Palazzo Farnese (with Antonio da Sangallo the Younger), San Lorenzo facade in Florence, New Sacristy in San Lorenzo in Florence, Biblioteca Laurenziana, Piazza del Campidoglio (Rome),

11. Mannerism and uniqueness of Venice. Sanmicheli's fortifications in Verona (The Porta Nuova); City of Venice: specificity and context; Piazza di San Marco; Jacopo Sansovino: Zecca, Loggetta, Old Library; Andrea Palladio: Four Books on Architecture, Vicenza: Basilica Vicenza, Palazzo Chiericatio, Palazzo Thiene, Teatro Olimpico in Vicenza with Scamozzi, Venice: Il Redentore, San Giorgio Maggiore, Villa Rotonda (Capra); Giacomo da Vignola: Il Gesu church in Rome.

12. Polish Renaissance. Stages of Polish Renaissance: I stage - Italianism, II stage - dissemination, III

stage - Mannerism; political and social context; The Royal Residence on Wawel (Cracow); Sigismund's Chapel; Influences of Wawel Castle; II stage: case study of Castle in Baranów; Renaissance city halls (Poznań, Sandomierz, Chełmno, Cracow); other public function buildings: case study of Cloth Hall (Sukiennice) in Cracow; III stage: Mannerism: tenement houses in Kazimierz Dolny, castles (Krasieczyn, Podhorce), The Green Gate and the Grand Armony in Gdańsk.

Course topics

1. Introduction to lectures. Reminder of basic chronological divisions and concepts: Middle Ages and Modernity; Romanesque - Gothic - Renaissance - Mannerism and their sources and attitudes towards them of contemporary researchers. Contexts of the era: political, social, economic, religious: spiritual and emotional. Sources of universalism of medieval culture. Aesthetics of the Middle Ages (Gothic). Symbolism of proportions, allegory in art and architecture. Perception of space in medieval architecture - relationships of Romanesque and Gothic. Gothic idiom - determinants of style. Basic regional and chronological divisions of Gothic. Most important topics of architecture. Architect in the Gothic era.

2. Birth and development of Gothic architecture in France. Relationships between structure and form - Gothic skeleton structure and its elements: pointed arch, ribbed vaults (the role of the rib in the creation of skeleton structure, vault with raised key - freeing the projection of the span), retaining arch and tower of strength, inter-nave pillars - "disappearance" of the wall. Spatial forms of churches: basilica, hall, pseudobasilica and pseudohall; structural, functional and aesthetic advantages and disadvantages of these solutions. 3. Birth and development of architecture in France - Paris region - Ile-de-France region. Phases of development of Gothic in France. Gothic French cathedrals: development of structure and form, canon of solutions - abbey church in St. Denis, cathedrals in Laon, Paris, Chartres, Reims, Amiens, Beauvais, Saint Chapelle in Paris, cathedrals in Tours and Bourges. Development of Gothic detail: windows, tracery, portals, evolution of architectural sculpture.

Cathedral symbolism, pauperum bible. Significance of French cathedrals in European sacred and secular architecture - regional varieties of French Gothic. Cathedrals in Strasbourg, Cologne and Prague.

4. English Gothic - chronological divisions, patterns: Anglo-Saxon-Norman, monastic and French. Characteristic features of cathedral layouts: plans, structure, masses, material, transepts, towers, facades, Lady Chapel, types of eastern endings, evolution of vaults, window openings and tracery, chapter houses. Development of English Gothic - cathedrals in: Canterbury, Salisbury, Lincoln, Wells, Westminster Abbey, Bristol Cathedral, Kings College Chapel in Cambridge, Henry VII's Chapel in Westminster Abbey. 5. Gothic architecture in the Holy Roman Empire. Political and social context; the role of cities and the Hansa in the dissemination of architectural patterns; chronological and regional divisions: adaptation of French patterns and brick Gothic. Cathedrals and churches: in Lausanne, Metz, Freiburg, Magdeburg, Marburg, Lübeck. Late Gothic: taking up French patterns - "beautiful" Gothic and the Brunsberg hall. Evolution of church structure and form towards monumental simplifications - reductive Gothic (a new type of piety): churches in Landshut, Frauenkirche in Munich, St. Mary's Church in Gdańsk. 6. Gothic in southern Europe and the reform and development of the monastic movement (Cistercians, Dominicans, Franciscans, Augustinians, knightly orders); political, religious (Crusades) and artistic context; influence on early Gothic architecture in Polish lands. Cistercians in Poland - three branches: Wąchock, Łąd, Kołbacz, Oliwa, Pelplin. Dominican architecture: Jacobin churches in Paris and Toulouse, cathedral in Albi.

First Dominican monastery churches in Poland (Sandomierz, Kraków, Wrocław, Poznań).

Architecture on the Iberian Peninsula: Dominican patterns (Catalonia), cathedrals (Castile and Leon) and Islamic architecture (Andalusia). Annex: Islamic architecture on the Iberian Peninsula and its significance

7. Gothic in southern Europe and the reform and development of the monastic movement. Part 2. Italy - influence of the tradition of local architecture: Roman and early Christian and monastic. Franciscan and Dominican churches in Assisi, Bologna, Florence, Padua and Venice. Cathedrals in Italy (Siena, Florence, Orvieto). Milan Cathedral - interpretation of French and native patterns. Gothic in sacral architecture - summary. 8. Gothic architecture: castle and city. Between donjon, bergfried, fortified manor and castle, evolution towards regularity of plan, desacralization of cathedral detail, influence of defensive architecture of the Middle East: Louvre, Castel del Monte, Avignon. Castles in Poland: residential towers, regular lowland castles, fortified manors, Teutonic castles (Toruń, Radzyń Chełmiński, Malbork). City: urbanization

of Europe and types of cities in the Middle Ages - the first cities built according to a specific concept.

Spatial development

of Poznań and locations under German law. City walls, gates and barbicans. Municipal buildings: town halls and city council palaces, cloth halls, universities, hospitals and shelters, city palaces.

The bourgeois tenement house in Poland.

9. Gothic architecture in Poland: political and social context, periodization, materials, construction techniques. Review of objects discussed in the context of the evolution of European architecture - patterns. The importance of Lower Silesia and architecture of religious orders for the development of Gothic in Poland. Reduction Gothic

and the architecture of the Teutonic Order. Restoration of the kingdom and the architecture of cathedrals in Poland [(Wrocław),

Kraków, Gniezno, Poznań]. Development of Wawel Castle in the times of the last Piasts and the Jagiellonian dynasty,

two-nave churches. International Gothic: central and single-pillar churches. Gothic architecture in Poznań and Greater Poland: ambulatory hall, Poznań churches.

10. Renaissance - basic concepts and contexts of the era: rebirth, humanism, new cognitive attitude, Reformation; time frame and chronology. Italy: proto-Renaissance, periodizations of the Italian Renaissance. Quattrocento: Florence (significance of the competition for the second door of the Baptistery, 1401) - early Renaissance:

perception and recording of space - "discovery" of descriptive perspective (F. Brunelleschi, Masaccio), problems of the central temple, search for the canon of the basilica and central-longitudinal temple, search for the form of the facade of a basilica church, city palace, public space: from the arcaded loggia to the square, equestrian statue (Donatello), perception of ancient forms: interest in construction and revival of ancient orders and theory of art and architecture. F. Brunelleschi - revolution in Western architecture: Ospedale degli Innocenti, innovation in the construction of the dome of the cathedral of S. Maria del Fiore, churches of San Lorenzo

and Santo Spirito, Old Sacristy (San Lorenzo) and the Pazzi Chapel, rotunda of Santa Maria degli Angeli.

Michelozzo: Medici(-Ricardi) palace: L. B. Alberti - De re aedificatoria (architecture as a liberal art):

palazzo Rucellai, Tempio Malatestiano in Rimini, facade of S. Maria della Novella, church of San Andrea in Mantua. Spread of the Florentine Renaissance - Urbino.

11. Milan and the Lombard Renaissance: the ideal city, aerial perspective, new technique

of presenting architectural design (L. da Vinci), illusionism in architecture, significance of the Lombard Renaissance in European architecture. Filarete (Ospedale Maggiore), A. Amadeo (Certosa di Pavia)

early works of D. Bramante (S. Maria presso S. Satiro), Lombard architectural detail. Renaissance in

Venice: influence of climate, tradition, Lombard inspirations: expansion of the Doge's Palace by P.

Lombardo (S. Maria

dei Miracoli) M. Coducci (Scuola di San Marco, façade of San Zaccaria, New Procurations). High

Renaissance

in Italy - Cinquecento. Renaissance of Rome. Bramante: Tempietto, Belvedere Courtyard, design

of St. Peter's Basilica. Evolution of the basilica concept in designs by: Raphael, da Sangallo, Peruzzi and

Michelangelo. Beginnings of Mannerism in Rome: Raphael (Villa Madama), B. Peruzzi (Villa Farnesina).

Mannerism in

Mantua: Giulio Romano (Palazzo Te, Cortile della Cavallerizza). Michelangelo - dynamism and expression

of form, precursors of the Baroque: sculpture (David) - compositional features, vaulting and Last

Judgement in the

Sistine Chapel, New Sacristy, Laurentian Library - Florence, Palazzo Farnese, dome of St.

Peter's Basilica, Capitoline Square - Rome.

12. Mannerism and High Renaissance architecture. Venice - scenographic effects of architecture:

Sansovino - St. Mark's Library, Zecca; reconstruction of St. Mark's Square and Piazzetta (New Procurations

- V.

Scamozzi), Verona and Sanmichelli. Andrea Palladio: theory of architecture - "Four Books on Architecture",

synthesis of the ancient temple and the church (S. Francesca della Vigna, S. Giorgio Maggiore, Il

Redentore -

Venice), city palaces (Basilica Palladiana, Palazzo Thiene, Chiericati, Valmarana - Vicenza), villa

rustica and suburbana: connections between architecture and the environment, desacralization of the

dome, the facade of the ancient

temple in "residential" architecture; Teatro Olimpico. Vignola: Villa Farnese in Caprarola - palazzo in

fortezza, central-long Counter-Reformation Jesuit church - one of the most important buildings in the history of modern architecture, treatise "On the Five Orders of Architecture". .

13. Renaissance in France: The tradition of the French stonemasonry workshop and its influence on Renaissance detail. Renaissance in court style, influence of S. Serlio; water castles: Blois, Chambord, Louvre (Pierre Lescot's wing), Salomon de Brosse: Luxembourg Palace, Tuilleries Palace - advancement of the architect. City palace - hotel. Churches: St.-Sulpice and St.-Gervais - difficult parting with the Gothic canon. Renaissance in Spain: Plateresque and Herrerianism: palace of Charles V in Granada, palace-monastery Escorial, cathedral in Malaga. Renaissance in the Netherlands - social, political and religious context; initial importance of detail (rolled and ironwork ornament), later transparency of masses - Northern Mannerism, search for the form of the Protestant church. Renaissance in England - political and religious conditions, periodization, influences of the Northern Italian Renaissance, French and Dutch Mannerism: main theme open residence - Prodigy House. Renaissance in Germany: castles, townhouses, town halls (Augsburg, Bremen, Cologne), sacral architecture - the split of the Renaissance into Catholic and Protestant: the church of St. Michael in Monachium, Salzburg Cathedral, Freudenstadt Church.

14. Renaissance in Poland: political conditions, Counter-Reformation, development phases. Specificity of Renaissance (1500-50) and Mannerism in Poland: climate, provincialism, models and inspirations, creators. Italian Renaissance at the court of the last Jagiellons: sculpture, reconstruction of Wawel Castle - concept of a modern residence around a cloistered courtyard: Franciszek Florentczyk, Benedict Sandomierzanin, Bartolomeo Berecci (interpretation of ancient-Renaissance forms and mathematical proportions adapted to local specificity): innovative ideological program, interior decoration of the castle and their furnishings; Sigismund's chapel - complex central plan, ideological program, new type of tombstone. Main artistic themes of the "golden age": manor (tower, tenement house, castle), chapel-mausoleum, tombstone. Tower manor - royal palace in Piotrków Trybunalski, manor in Gołuchów, castles in Szymbark and Pabianice. Chapel-mausoleum, double tombstone of the "Sansovinowski" type (Renaissance tombstones in the cathedral in Poznań). Castle - predominance of defensive functions over representative ones, Renaissance detail (Drzewica, Ogródzieniec). Castle after the mid-16th century - rules of axiality and symmetry (Pieskowa Skała, Niepołomice, Sucha Beskidzka, Krasiczyn, Baranów Sandomierski). First open residences: palace in Książ Wielki, villa Decius. 15. Architecture of the cities of the "golden age": Krakow, Lviv, Gdansk - transition from Renaissance to Mannerism.

Cloth halls in Krakow and "Polish Attica", town halls: in Poznan (iconographic program and decoration - influence of S. Serlio's treatise), town hall in Chełmno. Tenement house - manor house and city palace: the Orsetti tenement house (Jarosław), the Górka palace (Poznań); tenement houses in Kazimierz Dolny. Distinctiveness of Gdansk architecture - "northern mannerism": expansion of the Main Town Hall, new Old Town Hall, theater, Arsenal, Green, Golden and Highland Gates, tenement houses - architects: A. van Obberghen, A. van den Blocke and others. Architecture of the Eastern Borderlands: Lombard, Venetian, Dutch and Oriental influences: the Black Tenement House (Lviv), the Boim Chapel. Zamość - a mannerist residential city - combining the principle of centrality with axiality (B. Morando and J. Zamoyski): ideological program, spatial patterns, collegiate church, town hall, castle.

Teaching methods

1. Problem-based presentation of the material.
2. Sketchbook assignments for individual work.

3. Virtual classroom and additional assignments (e.g. Smart History within Khan Academy Platform)
4. Discursive revisions.

Bibliography

Basic

1. Nikolaus Pevsner An Outline of European Architecture, Penguin Books Ltd, Harmondsworth, Middlesex, 1943.
2. David Watkin, A History of Western Architecture, Laurence King Publishing, 1986.
3. Banister Fletcher, The History of Architecture on comparative method, London, 1905.
4. [Ed.] T.C.W. Blanning The Short Oxford History of Europe, The Central Middle Ages Oxford University Press, 2006.
5. [Ed.] Rolf Toman, The Art of Gothic: Architecture | Sculpture | Painting, Könemann Verlagsgesellschaft mbH, Köln, 2004.
6. Wilfried Koch, Baustilkunde (Style in architecture), Mosaik Verlag, Munich, 1996.

Additional

1. Ernest D'Alfonso, Denilo Samss, Historia architektury. Formy i style od starożytności do współczesności, Warszawa, 1997.
2. Hugh Honour, John Fleming, World History of Art, Laurence King Publishing, 2009 (7th edition).
3. Praca zbiorowa; Słownik terminologiczny sztuk pięknych; PWN; Warszawa 1996.
4. Mączyński Zdzisław; Elementy i detale architektoniczne w rozwoju historycznym; Arkady; Warszawa 1997 (reprint wydania z 1956 Wydawnictwa Budownictwa i Architektury).
5. Knothe Jan; Sztuka budowania; Nasza Księgarnia; W-wa 1968.
6. Miłobędzki Adam; Zarys dziejów architektury w Polsce; Arkady; Warszawa 1968.
7. Dzieje architektury w Polsce; red. Marcinek J.; Kluszczyński, Kraków 2008.

Breakdown of average student's workload

| | Hours | ECTS |
|---|-------|------|
| Total workload | 50 | 2,00 |
| Classes requiring direct contact with the teacher | 30 | 1,00 |
| Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation) | 20 | 1,00 |