Field of Study: Civil Engineering
Programme of studies: Civil, Industrial and Agricultural Buildings

First year of study:

Subject of study: Mathematical Analysis, ode: D23CCL101

NUMBER OF CREDITS: 5
YEAR/SEMESTER: 1st year / 1st semester
TYPE OF COURSE: Mandatory
OBJECTIVES: The course offers the students theoretical and practical concepts of the Mathematical Analysis.
CONTENT: Convergence: Sequences and series of real numbers, Power series, Fourier series. Continuity and Differentiability: Functions of several real variables, Implicit functions, The extreme values of a real function of several variables. Integral calculus: Definite integrals with parameters, Improper integrals, Line integrals of the first type, Multiple integrals, First type surface integrals. Elements of field theory.
TEACHING LANGUAGE: Romanian
EVALUATION: Written/oral examination
BIBLIOGRAPHY (selective):

Diamandescu, Aurel - Analiză Matematică, Vol. I, II, Editura Universitaria, Craiova, 2005
Diamandescu, Aurel – Îndrumar de Analiză Matematică, Editura Universitaria, Craiova, 2006
Diamandescu, Aurel – Culegere de Probleme de Analiză Matematică, Editura Universitaria, Craiova, 2007
Diamandescu, Aurel – Matematici Generale, Editura Universitaria, Craiova, 2009
Predoi Maria, Bălan Trandafir – Mathematical Analysis, Vol. I, II, Editura Universitaria, Craiova, 2005

Subject of study: Descriptive geometry, Code D23CCL102

NUMBER OF CREDITS: 4
YEAR/SEMESTER: 1st year/1st semester
TYPE OF COURSE: Mandatory
OBJECTIVES: The main aim of the course is to prepare students regard to acquiring the basic theoretical and practical concepts from descriptive geometry, to develop the creative skills to see „deep in space" and to prepare project designs. Terms used are under current standards and international standards.
CONTENT:
Projection systems. Line. A line of positions in relation to the planes of projection. The relative positions of two lines. The Plan. Line of a plan. The relative positions of the two planes. The position of a line in a plane. The intersection of plane figures. The projection transformation methods: the method of changing the projection planes, crop rotation method and rotation method of projection planes. Representation of geometric bodies. Sections in geometrical bodies. Development of geometric surfaces. Intersection of geometric bodies. The general method for the determination of the line of intersection
TEACHING LANGUAGE: Romanian
EVALUATION: Written/oral examination
BIBLIOGRAPHY (selective):

Buţu, A.; Sass, L.- Grafică inginerească. Vol. I. Geometrie descriptivă. Lucrări de laborator, Editura SITECH, Craiova, 1999;
Buţu, A.; Sass, L.- Grafică inginerească. Geometrie descriptivă. Teste grilă, Editura Universitaria Craiova, 1999;
Ene, Al.I.; Buţu, A,; Neagoe, D.;Stănescu, G.- Geometrie descriptivă, vol. I şI II, Editura SITECH, Craiova, 1998;
Enache, I.; Ivănescu, T.; Buzilă, V. - Geometrie descriptivă şI desen tehnic. Probleme şI aplicaţii, Editura didactică şI pedagogică, Bucureşti, 1982;
Noveanu, L.; Orban, M. - Geometrie descriptivă, Universitatea Tehnică din Cluj-Napoca, 1992;
Precupeţu, P.; Dale, C.- Probleme de geometrie descriptivă cu aplicaţii în tehnică, Editura Tehnică, Bucureşti, 1987;
Moncea, J.-Geometrie descriptivă şI desen tehnic, Editura didactică şI pedagogică, Bucureşti,1982;
Tănăsescu, A. -Probleme de geometrie descriptivă, Editura didactică şI pedagogică, Bucureşti,1962;

Subject of study: Technical drawing for building construction I (Code: D23CCL103)+ Technical drawing for building construction II (Code D22CCL209)

NUMBER OF CREDITS: 5- 1st sem. / 3 -2nd sem.
YEAR/SEMESTER: 1st year/1st & 2nd semester
TYPE OF COURSE: fundamental
OBJECTIVES: The main aim of the course is to prepare students regard to acquiring the basic theoretical and practical concepts to represent technical design, to develop the creative skills to prepare project designs. Terms used are under current standards and international standards.
CONTENT:
Rules and principles for the execution of designs. The representation of objects-sections, ruptures, hatchings. Dimensioning in technical drawing. The representation of buildings and industrial buildings. Notation on technical drawins of trace axis. The thickness of the walls, the listing of columns, foundations. Representation and dimensioning of doors and windows, stairs and lifts. Drafting and dimensioning of the architecture plans. Technical desing representation for construction made of brick masonry elements. Representation of reinforced concrete constructions. Notation on technical drawings the reinforced concrete elements and extract of reinforced concrete beams. Representation in drawing for wooden constructions and its joints.

Metal elements. Joints found in the case of metallic constructions handed over: by bolts, rivets and welded.
TEACHING LANGUAGE: Romanian
EVALUATION: Written/oral examination
BIBLIOGRAPHY (selective):
Ionescu,V.;Bărbat,V - Desen tehnic în construcţii, E.D.P.,Bucureşti,1970;
Duţă, Alina- Noţiuni de desen tehnic în domeniul construcţiilor, Editura Universitaria, Craiova, 2001;
***-Desenul tehnic de construcţii- Editura Didactică şi Pedagogică,Bucureşti,1965;
Tăutu, N. – Desenul tehnic şi trasarea construcţiilor, Editura Didactică şi Pedagogică,Bucureşti,1970.
I.R.S. *Catalogul Standardelor Române* ,Editura Tehnică, Bucureşti

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Subject of study: Computer programming and programming languages I (Code: D23CCL104)+ Computer programming and programming languages II (Code D23CCL210)

NUMBER OF CREDITS: 5- 1st sem; 4-2nd sem.
YEAR/SEMESTER: 1st year/1st and 2nd semester
TYPE OF COURSE: Mandatory
OBJECTIVES: The course offers the general informations and concepts of operating and programming with C++ language and with the mathematical calculations program Excell and MathCad
CONTENT: Windows operating system, Microsoft Word program used for technical documentations. Tabelar mathematical calculus and technical diagrams with Excell. MathCad – program for mathematics used in technical design calculation. Creating applications in C++ programming language.
TEACHING LANGUAGE: Romanian
EVALUATION: Written/practice examination
BIBLIOGRAPHY (selective):
1.*** - Technical documentation MathCad
2. *** - Technical documentation Microsoft Office 2007
3.Negru Mihai, Programarea si utilizarea calculatoarelor – lectii practice, ed. Universitaria 2005.

Subject of study: Technical chemistry (Code D23CCL105)

NUMBER OF CREDITS: 4
YEAR/SEMESTER: 1st year/1st semester
TYPE OF COURSE Mandatory
TEACHING LANGUAGE: Romanian
EVALUATION: Written/oral examination

Subject of study: Mechanics I, Code D23CCL106
NUMBER OF CREDITS: 4

YEAR/SEMESTER: 1st year/1st semester
TYPE OF COURSE: Manadatory
OBJECTIVES: The course provides to the students to knowledge and assess the real state of motion of bodies, qualitative and quantitative knowledge of the state of motion of bodies modeled as material points, points system materials, rigid and rigid systems. Knowledge and implementation of graphical and analytical skills working on dynamic characteristics of bodies modeled as systems of material points, rigid and rigid systems.

CONTENT: Systems of forces. Strong reduction systems. Centre of gravity. Static material point. Rigid solid state. Equilibrium of rigid bodies systems. Equilibrium of rigid bodies systems. Plane truss. Kinematics point.
TEACHING LANGUAGE: Romanian
EVALUATION: Descriptive written and problems
SELECTIVE BIBLIOGRAPHY:
Avramescu, C., Ecuatii diferentiale si integrale, Reprografia Universitatii din Craiova, 1972
Buculei, M., Mecanica I, II, Reprografia Universitatii din Craiova, 1980
Dumitru, N., Nanu, Gh., **Vintila, D.,** Mecanisme si transmisii mecanice, Editura Didactica si Pedagogica, 2008
Nanu, Gh., **Vintila, D**., Mecanica Culegere de probleme, Editura Universitaria, 2002
Nanu, Gh., **Vintilă, D.,** Mecanica teorie si aplicatii, Editura Universitaria, 2003
Vintilă, D., Mecanica, Editura Sitech, 2012
Vintilă, D., Bagnaru, D., Nanu Gh., Grigorie, L., Mecanica, Indrumar de laborator, Editura Sitech, 2009
Vintilă, D., Dumitru, N., Nanu, Gh., Dinamica şi stabilitatea sistemelor mobile cu elemente elastice, Editura Tehnica Bucuresti, 2002
Voinea, R., Voiculescu, D., Ceausu, V., Mecanica, Editura Didactica si Pedagogica, 1984

Subject of study: Physical education I (Sport) (Code D23CCL107)

NUMBER OF CREDITS: "1"
YEAR/SEMESTER: 1st year/1st semester
TYPE OF COURSE: Mandatory
TEACHING LANGUAGE: Romanian
EVALUATION: -

Subject of study: Foreign language (English, Francaise, Deutsch I (Code D23CCL117)
NUMBER OF CREDITS: 2
YEAR/SEMESTER: 1st year/1st semester
TYPE OF COURSE: Optional
TEACHING LANGUAGE: Foreign language
EVALUATION: Written/oral examination

Subject of study: Linear Algebra, Analytical and Differential Geometry, Code D23CCL208

NUMBER OF CREDITS: 5
YEAR/SEMESTER: 1st year / 2nd semester
TYPE OF COURSE: fundamental
OBJECTIVES: The course gives the possibility to analyze the physical and mechanical phenomena using the vector notion and his properties. Many mathematical models that describe the behavior of mechanical components, in static or dynamic regime, are obtained using geometric notions like curves and surfaces.
CONTENT: Vectorial spaces, examples, properties; Mathematical connections among vectorial spaces; Bilinear forms and quadratic forms, applications; Euclidean spaces - the notion of length of a vector and unoriented angle between two vectors; Orthogonality, orthogonal base; Tensors, properties; Free vectors, applications; Line and plane in space; Quadrics and Conics; Curves; Surfaces.

TEACHING LANGUAGE: Romanian
EVALUATION: Written examination

BIBLIOGRAPHY (selective):
G. Marinescu, Spaţii vectoriale topologice şi pseudotopologice, Editura Academiei, Bucureşti, 1959.
M. Stoka, Geometrie diferenţială, Editura Didactică şi Pedagogică, Bucureşti, 1964.
G.E. Şilov, Matematiceskii analiz, Nauka, Moskva, 1969.
P. Stavre, Curs de geometrie diferenţială, Litografia Universităţii din Craiova, 1970.
I. Creangă, C. Haimovici, Algebră liniară, Editura Didactică şi Pedagogică, Bucureşti, 1970.
R. Miron, Geometrie analitică, Editura Didactică şi Pedagogică, Bucureşti, 1976.
C. Iacob, Matematică aplicată în mecanică, Editura Academiei, Bucureşti,1989.
M.M. Stănescu, Curs de Algebră Liniară, Geometrie Analitică şi Diferenţială, Reprografia Universităţii din Craiova, 2000.
M.M. Stănescu, F. Munteanu, V. Slesar, Probleme de Algebră Liniară, Geometrie Analitică şi Geometrie Diferenţială, Editura Sitech Craiova, 2004.
M.M. Stănescu, Elemente de teorie a spaţiilor vectoriale, Editura Universitaria, 2005.
M.M. Stănescu, O. Georgescu, C.M. Georgescu, Algebră Liniară. Aplicaţii. Editura Universitaria, 2006.
P. Stavre, M.M. Stănescu, Rezolvarea algoritmică a sistemelor de ecuaţii liniare. Aplicaţii, Ed. MatrixRom, Bucureşti, 2007.

Subject of study: Topography (Code D23CCLL211)

NUMBER OF CREDITS: 5
YEAR/SEMESTER: 1st year/2nd semester
TYPE OF COURSE: Mandatory
TEACHING LANGUAGE: Foreign language
EVALUATION: Written/oral examination

Subject of study: Materials for constructions (Code D23CCLL212)

NUMBER OF CREDITS: 4
YEAR/SEMESTER: 1st year/2nd semester
TYPE OF COURSE: Mandatory
TEACHING LANGUAGE: Foreign language
EVALUATION: Written/oral examination

Subject of study: Mechanics II, Code: D23CCL213

NUMBER OF CREDITS: 5
YEAR/SEMESTER: 1st year/2nd semester
TYPE OF COURSE: fundamental
OBJECTIVES: The course provides to the students the knowledge and assess the real state of motion of bodies, qualitative and quantitative knowledge of the state of motion of bodies modeled as material points, points system materials, rigid and rigid systems, knowledge and implementation skills and analytical Desktop on the characteristics bodies modeled as dynamic systems of material points, rigid and rigid systems, experimental evaluation of mechanical quantities.

CONTENT: Kinematics of relative motion of the material point. Kinematics of rigid solid. Kinematics of rigid solid systems. Dynamics. Mechanical inertia. General theorems. Open and dynamic material point links. Dynamic connection rigid and solid. Dynamic systems of material points and rigid bodies. Analytical Mechanics. The principle of d'Alembert. The principle of virtual mechanical work. The principle of virtual mechanical work. Lagrange equations.
TEACHING LANGUAGE: Romanian
EVALUATION: Descriptive written and problems

SELECTIVE BIBLIOGRAPHY:
Avramescu, C., Ecuatii diferentiale si integrale, Reprografia Universitatii din Craiova, 1972
Buculei, M., Mecanica I, II, Reprografia Universitatii din Craiova, 1980
Dumitru, N., Nanu, Gh., Vintila, D., Mecanisme si transmisii mecanice, Editura Didactica si Pedagogica, 2008
Nanu, Gh., Vintila, D., Mecanica Culegere de probleme, Editura Universitaria, 2002
Nanu, Gh., Vintilă, D., Mecanica teorie si aplicatii, Editura Universitaria, 2003
Vintilă, D., Mecanica, Editura Sitech, 2012
Vintilă, D., Bagnaru, D., Nanu Gh., Grigorie, L., Mecanica, Indrumar de laborator, Editura Sitech, 2009
Vintilă, D., Dumitru, N., Nanu, Gh., Dinamica şi stabilitatea sistemelor mobile cu elemente elastice, Editura Tehnica Bucuresti, 2002
Voinea, R., Voiculescu, D., Ceausu, V., Mecanica, Editura Didactica si Pedagogica, 1984.

Subject of study: Physical education II (Sport) (Code D23CCL214)

NUMBER OF CREDITS: "1"
YEAR/SEMESTER: 1st year/1st semester
TYPE OF COURSE: Mandatory
TEACHING LANGUAGE: Romanian
EVALUATION: -

Subject of study: History of technics (Code D23CCL216)

NUMBER OF CREDITS: 3
YEAR/SEMESTER: 1st year/2nd semester
TYPE OF COURSE: Mandatory
TEACHING LANGUAGE: Romanian
EVALUATION: Written/oral examination

Subject of study: Foreign language (English, Francaise, Deutsch I (Code D23CCL218)

NUMBER OF CREDITS: 2
YEAR/SEMESTER: 1st year/1st semester
TYPE OF COURSE: Optional
TEACHING LANGUAGE: Foreign language
EVALUATION: Written/oral examination

Second year of study:

Subject of study: Special mathematics
Code: D23CCL301
NUMBER OF CREDITS: 3
YEAR/SEMESTER: 2nd year/1st semester
TYPE OF COURSE: Mandatory
TEACHING LANGUAGE: Romanian
EVALUATION: Written/oral examination

Subject of study: Strength of materials I (Code:D23CCL302) + Strength of materials II (Code: D23CCL413)
NUMBER OF CREDITS: 4-1st sem. + 5-2nd sem.
YEAR/SEMESTER: 2nd year/ 1st and 2nd semester
TYPE OF COURSE: Mandatory
OBJECTIVES: The course offers the students theoretical and practical concepts regarding the strength analysis of structures (machine parts, constructions, strength structures and so on).
CONTENT: Mechanical structures schematization. Mechanical structures analysis(loadings, reaction forces, stresses, displacements and so on). The interpretation of mechanical loadings states for a construction; the design of mechanical structures; strength and stiffness calculus, structures strength checkings.
TEACHING LANGUAGE: Romanian
EVALUATION: Written/oral examination
BIBLIOGRAPHY (selective):
Ilincioiu, D, Rezistenţa Materialelor, Ed. ROM TPT, Craiova, 2002.
Ilincioiu, D, Rezistenţa Materialelor, Ed. ROM TPT, Craiova, 2003.
Ilincioiu, D, Rezistenţa Materialelor, ediţia a II-a, Ed. ROM TPT, Craiova, 2007.
Ilincioiu, D, Miriţoiu, C, Rezistenţa Materialelor, vol. şi II, Ed. Universitaria, Craiova 2011.
Miritoiu, C, Ilincioiu, D, Rezistenţa Materialelor. Aplicaţii, vol.I, Ed. SITECH, Craiova 2012.

Subject of study: Thermotechnics, Code: D23CCL303
NUMBER OF CREDITS: 5
YEAR/SEMESTER: 2nd year/1st semester
TYPE OF COURSE: domain
OBJECTIVES: This course allows to acquire correct knowledge and skills required for thermal calculation in manufacturing and correct operation of heating and cooling. Necessary skills are acquired for conception of minimum specific energy consumption by extending the concepts of energy and exergetic balance.
CONTENT: Generalities in thermotechnics. Methods in thermodynamic. Thermodynamic coefficients. The first principle of thermodynamics for closed and open systems. Enthalpy. Caloric equation of state. Robert Mayer's. Perfect gas. Perfect gas laws. Perfect gas mixtures. Simple thermodynamic transformations. The second principle of thermodynamics. Cycles motors and generators. Heat engines. Heat pumps, refrigeration machines. Entropy. Entropy in simple thermodynamics trnsformations. Refrigeration. Real gas. Vapors. Moist air. Thermodynamic methods. The third principle of thermodynamics
TEACHING LANGUAGE: Romanian
EVALUATION: Writtenand oral examination
BIBLIOGRAPHY (selective):
1. Bică, M.,Călbureanu M., Termotehnică şi maşini termice, Editura ICMET , Craiova 2002
2. Dănescu, Al., ş.a., Termotehnică şi maşini termice, EDP Bucureşti 1985
3. Călbureanu, M., Cernăianu, C., - Îndrumar de laborator de termotehnică, maşini termice şi transfer de căldură - Îndrumar de laborator, Ed. Universitaria, 2008
4. Ştefănescu,D., ş.a., Termogazodinamică tehnică, ET, Bucureşti 1986
5. Nagi, M., ş.a., Gazodinamică, echipamente termice, Timişoara, 1999

Subject of study: Engineering geology
Code: D23CCL304
NUMBER OF CREDITS: 2
YEAR/SEMESTER: 2nd year/1st semester
TYPE OF COURSE: Mandatory
TEACHING LANGUAGE: Romanian
EVALUATION: Written/oral examination

Subject of study: Construction machines
NUMBER OF CREDITS: 2
YEAR/SEMESTER: 2nd year/first semester
TYPE OF COURSE: Mandatory
OBJECTIVES: The course provides to the students to understanding kinematic schemes, composed of technical drawings of machines, production flows, graphs, and understanding formulas for the determination of main parameters of machines.
CONTENT: Mechanization of construction. Classification machinery. Structure machinery. General concepts about machine parts (materials, classification). Mechanical and hydraulic transmissions. Land excavation machines. Excavators (classification, construction, operation, main parameters).
Digging machinery and land transport (bulldozers, graders). Machines compacting earth, concrete and asphalt (road rollers, vibratory plates, rammers). Machinery for preparing, transporting and placing of concrete (compaction process, mixers, stations concrete, concrete mixers, concrete casting technology). Machines for underground (sewers execution shields and underground tunnels, machinery for execution undercrossing). Lifting and transporting machines (cranes, tower cranes, jib cranes, belt conveyors).Street maintenance machinery.Machines for building facades and lamp posts (mobile platforms). Machines for superstructure rebuilding roads) mills asphalt, concrete.
TEACHING LANGUAGE: Romanian
EVALUATION: Oral examination with tickets
SELECTIVE BIBLIOGRAPHY:

Alămoreanu, M., Traian Tisea, Masini de ridicat, Editura Tehnică, 2000, Bucuresti.

Beiu, E., Capata, I., Tehnologia construcsiilor si masini de construcsii, vol. I, vol II, curs, Reprografia Institutului Politehnic, Cluj Napoca, 1972

Mihăilescu, St, Masini de constructii si prelucrarea agregatelor, Ed. Didactică si Pedagogică, București, 1983

Popescu, P., s.a., Masini de construcsii, Ed. Tehnică, Bucuresti, 1960

Vita, I., s.a , Masini de ridicat în constructii, exploatare, întretinere, reparatii, Ed. Tehnică, Bucuresti, 1989

Vintilă, D., Bagnaru, D., Georgescu, I., Masini de constructii, Editura Universitaria, 2004

Vintilă, D., Bagnaru, D., Georgescu, I., Masini de constructii, Editura Didactică si Pedagogică, 2010.

Subject of study: Economics and legislation in construction
Code: D23CCL306

NUMBER OF CREDITS: 3
YEAR/SEMESTER: 2nd year/1st semester
TYPE OF COURSE: Mandatory
TEACHING LANGUAGE: Romanian
EVALUATION: Written/oral examination

Subject of study: Comunication ways and bridges Code: D23CCL307

NUMBER OF CREDITS: 3
YEAR/SEMESTER: 2nd year/1st semester
TYPE OF COURSE: Mandatory
TEACHING LANGUAGE: Romanian
EVALUATION: Written/oral examination

Subject of study: Statics of constructions I (Code: D23CCL308) + Statics of constructions II (Code: D23CCL416)

NUMBER OF CREDITS: 5- 1st sem. + 5-2nd sem.
YEAR/SEMESTER: 2nd year/1st semester
TYPE OF COURSE: Mandatory
TEACHING LANGUAGE: Romanian
EVALUATION: Written/oral examination

Subject of study: Physical education III (Sport) (Code D23CCL409)

NUMBER OF CREDITS: "1"
YEAR/SEMESTER: 2nd year/1st semester
TYPE OF COURSE: Mandatory
TEACHING LANGUAGE: Romanian
EVALUATION: -

Subject of study: Foreign language (English, Francaise, Deutsch III (Code D23CCL410)

NUMBER OF CREDITS: 2
YEAR/SEMESTER: 2nd year/1st semester
TYPE OF COURSE: Optional
TEACHING LANGUAGE: Foreign language
EVALUATION: Written/oral examination

Subject of study:Technical physics (Code D23CCL411)

NUMBER OF CREDITS: 3

YEAR/SEMESTER: 2nd year/2nd semester
TYPE OF COURSE: Mandatory
TEACHING LANGUAGE: Romanian
EVALUATION: Written/oral examination

Subject of study: Hydraulics,Code D23CCL412

NUMBER OF CREDITS: 4
YEAR/SEMESTER: 2nd year/2nd semester
TYPE OF COURSE: domain
OBJECTIVES: The aim of the course is to present the basics of fluid mechanics and elements of applied hydraulics.
CONTENT: Physical properties of fluids. Hydrostatic pressure. Hydrostatic law. Hydrostatic forces. Lagrange and Euler's method in kinematics of fluid mechanics. Mass conservation equation. Bernoulli equations and applications. Laminar fluid flow. Navier-Stokes equation. Bernoulli generalized law.
Fluid flow in hydraulics pipes. Reynolds number. Linear friction losses. Darcy-Weisbach relation. Local friction losses. Flow in pressured pipes. Serial pipes. Parallel pipes. Network pipes. Short pipes calculus. Water hammer. Fluid flow in open channels. Fluid flow through holes. Fluid flow over weirs.
TEACHING LANGUAGE: Romanian
EVALUATION: Written/oral test
BIBLIOGRAPHY (selective):
ASTEFANEI I., Mecanica fluidelor si masini hidraulice, partea I. Mecanica fluidelor ideale. Universitatea din Craiova, 1996.

ANTON V., POPOVICIU M., FITERO I. - Hidraulica si masini hidraulice. Editura Didactica si Pedaogica, Bucuresti, 1978.

BARTHA I., JAVGUREANU V., Hidraulica. Editura Tehnica, Bucuresti, 1998.

BUCULEI M., Mecanica fluidelor, Universitatea din Craiova, 1984.

BUCULEI M., s.a. - Mecanica fluidelor si masini hidraulice, Ed. Universitaria, Craiova, 2011

CRETU I., Hidraulica generala si subterana. Editura Didactica si Pedaogica, Bucuresti, 1983.

FLOREA J., Mecanica fluidelor, Editura Didactica si Pedaogica, Bucuresti, 1979.

GIURCONIU M., s.a. - Hidraulica constructiilor si instalatiilor hidroedilitare, Editura Facla Timisoara, 1989.

IAMANDI C., s.a., Hidraulica instalatiilor. Editura Tehnica, Bucuresti, 1994.

MANESCU A., SANDU M. - Hidraulica teoretica si aplicata, Institutul de Constructii Bucuresti, 1983.

TALU M., Hidraulica Instalatiilor edilitare.Baze teoretice si aplicatii practice, Editura ICMET Craiova, 2002.

TROFIN E. - Hidraulica si hidrologie, Ed. Didactica si Pedagogica, Bucuresti, 1974

VASQUEZ J. - Hydraulique générale, ENGEE de Strasbourg.

VIERSMA T.J., ,,Analysis, synthesis and design of hydraulic servosystems and pipelines. Delft University of Technology, Faculty of Mechanical Engineering, Holland, 1990.

Subject of study: Reinforced concrete structure I (Code D23CCL414)

NUMBER OF CREDITS: 4

YEAR/SEMESTER: 2nd year/2nd semester
TYPE OF COURSE: Mandatory
TEACHING LANGUAGE: Romanian
EVALUATION: Written/oral examination

Subject of study: Hydro-utilities constructions (Code D23CCL415)

NUMBER OF CREDITS: 2
YEAR/SEMESTER: 2nd year/2nd semester
TYPE OF COURSE: Mandatory
TEACHING LANGUAGE: Romanian
EVALUATION: Written/oral examination

Subject of study: Physical education IV (Sport) (Code D23CCL417)

NUMBER OF CREDITS: "1"
YEAR/SEMESTER: 2nd year/2nd semester
TYPE OF COURSE: Mandatory
TEACHING LANGUAGE: Romanian
EVALUATION: -

Subject of study: Foreign language IV (English, Francaise, Deutsch (Code D23CCL419)

NUMBER OF CREDITS: 2
YEAR/SEMESTER: 2nd year/1st semester
TYPE OF COURSE: Optional
TEACHING LANGUAGE: Foreign language
EVALUATION: Written/oral examination

Subject of study: Practice (Code D23CCL418)

NUMBER OF CREDITS: 3
YEAR/SEMESTER: 2nd year/2nd semester
TYPE OF COURSE: Mandatory
TEACHING LANGUAGE: Romanian
EVALUATION: Written/oral examination

Subject of study: Industrial Sociology, Code D23CCL420

NUMBER OF CREDITS: 2
YEAR/SEMESTER: 2nd year/2nd semester
TYPE OF COURSE: complementary
OBJECTIVES: Knowing and understanding by students of various aspects of the enterprise's social life and social-humanistic problematics. Inprovement of abilities of fast solutioning of the social and human problems faced by students in their future jobs. Acquiring of methods, techniques and investigation tools specific to the discipline as future (applicative) support in the activity related to social relationships at the working place. Training of future engineers for the dialogue with specialists from the areas of social-human sciences, sociologists and psychologists, more in more involved in the actual enterprises development process.

CONTENT: Sociology –social science. Industrial Sociology as a branch of the general Sociology. Methodology in Industrial Sociology. Sociology of industrial enterprises. (Problems of industrial Macrosociology. Problems of industrial Microsociology.). Societal structure of industrial enterprises. Sociology of personnel from factories. Industry, Economy, society, industrial sociology. Industry – factor of urbanization and social construction.

TEACHING LANGUAGE: Romanian
EVALUATION: Written verification
BIBLIOGRAPHY (selective):

Cauc I, Manu B, Parlea D, Goran L, Metodologia cercetarii sociologice – metode si tehnici de cercetare. Ed a IV, Ed. Fundatiei de maine, Bucuresti, 2007.

Furtuna Carmen, Sociologie generala, Editura Fundatiei Romania de maine, Bucuresti, 2007.

Hinescu Arcadie, Ludusan Marioara, Sociologie industriala, Editura Astra, Blaj, 2002.

Otovescu Dumitru, Probleme fundamentale ale sociologiei, Editura Scrisul Romanesc, Craiova, 1997.

Saramet C., Bejan M., Inginerul - confident si vizionar, Editura AGIR, Bucuresti, 1999.

Sass L, Sociologie industriala, Note de curs, 2012.

Zamfir Catalin si Filipescu Iancu, Sociologie industriala − Curs şi exerciţii pentru seminar. Bucuresti, 1982.

Subject of study: Technical Statistics, Code D23CCL501

NUMBER OF CREDITS: 4
YEAR/SEMESTER: 3rd year/1st semester
TYPE OF COURSE: Mandatory
OBJECTIVES: The students acquaitance with the concepts and fundamental elements regarding the probability theory and the statistics calculus. The students learning with the formulas and the statistics calculus methodology, and also with the statistics control achievment for the processes and products quality assurance.
CONTENT: The acquisition and sistematization of statistical data. Elements of the probabilistics theory. Classical laws of distribution of random variables. Elements of selection and estimation theory. Statistics hypotheses testing. Regression and corelation. Statistical quality control.
TEACHING LANGUAGE: Romanian
EVALUATION: Written/oral examination
BIBLIOGRAPHY (selective):
Baron. T., Ţiţan. E., Matache. S., Ciuchiţă. L., Manual practic de statistică, Editura Expert, 1999
Iosifescu. M., Mihoc. Gh., Theodorescu. R., Teoria probabilitatilor si statistica matematica, Editura tehnica, Bucuresti, 1966;
Petrehus. V., Popescu. S.A., Probabilităţi şi statistică, Note de curs, http://www.vpetrehus.home;
Rancu. N., Tovissi. L., Statistica matematica cu aplicatii in productie, Editura Academiei Republicii Populare Romane, 1963;
Stănăşilă. T., Metode statistice pentru ingineri – teorie, exerciţii, aplicaţii, Editura Matrix Rom, Bucureşti, 1998;
Tarnita D. Statistica, teorie si aplicatii, Editura Univesitaria, Craiova, 2004.

Subject of study: Theory of Elasticity Elements and Thin Plates Calculus, Code D23CCL502

NUMBER OF CREDITS: 4
YEAR/SEMESTER: 3rd year/1st semester
TYPE OF COURSE: Mandatory
OBJECTIVES: The aim of the first part of this course is to present the basic of continuum mechanics and linear elasticity. In the second part is presented elements of thin plates calculus.
CONTENT: Deformations. Strain tensor. Stress. Stress tensor. Two dimensional problem (plane stress). Mohr's circle. Fundamental laws in theory of elasticity. Hooke's law. Navier's equation. Compatibility equations. Airy function.
Hypothesis in thin plates theory. Strain-curvature relations. Stress in thin plates. Moments-curvatures equations. Lagrange equation. Boundary conditions. Pure bending of thin plates. Pure torsion of thin plates. Analytical solutions for Lagrange equation. Circular plates equations. Axisymmetric bending of circular plates.
TEACHING LANGUAGE: Romanian
EVALUATION: Written/oral examination
BIBLIOGRAPHY (selective):

Băgnaru D. - Elemente de teoria elasticitatii si calculul placilor, Editura SITECH, Craiova, 2010.
Boivin M., Fantozzi G. - Mécanique des milieux continus, INSA de Lyon, 2000;
Cătăneanu A., Băgnaru D. - Mecanica mediului continuu, Editura SITECH, Craiova, 2000.
Champaney I - Methodes Numerique pour la Mecanique, Universite de Versailles, 2007.
Charles R. Steele, Chad D. Balach - Introduction to the theory of plates, Stanford University, 2009;
Maya M. - Cours de Mecanique de Milieux Continus, Centre Enseignement et de Recherche de Cluny, 2007.
Moës N. - Mécanique des milieux continus, Ecole Centrale de Nantes, 2003.
Sadd M. H. - Theory, Applications and Numerics, Elsevier 2005;
Teodorescu P.P., Probleme actuale în mecanica solidelor, Editura Academiei României, Bucureşti, 1975.
Timoshenko S. - Theory of Elasticity, McGraw Hill, 1953;
Ugural A.C., Fenster S.K. - Advanced Strenght and Applied Elasticity, Prentice Hall, 2003
Ventsel E., Krauthammer T. - Thin Plates and Shells, Marcel Dekker Inc., 2001

Subject of study: Geotechnics, Code D23CCL503

NUMBER OF CREDITS: 4
YEAR/SEMESTER: 3rd year/1st semester
TYPE OF COURSE: Mandatory
OBJECTIVES: The course allows students to aquire the notions about the soils, the physical and mechanical properties of the soils, and testing methods of this properties
CONTENT: The soils mechanics object of study. Soils components. Liquid phase. Soils physical characteristics. Mechanical and physical properties of soils. Shear strength of soils Research of foundation soils. Difficult soils as foundation soils.
Pushing processes of soil. Pressure of Soil pushing process. Supporting buildings. Slope stability
Distribution of stress in foundation soil. Soils behavior subjected to dynamic loads
TEACHING LANGUAGE: Romanian
EVALUATION: Written and oral examination
BIBLIOGRAPHY (selective):

Subject of study :
Reinforced concrete structures II (Code D22CCL504) + Reinforced concrete structures III (Code D22CCL609)

NUMBER OF CREDITS: 4-1st sem. + 5- 2nd sem.
YEAR/SEMESTER: 3rd year/1st semester + 2nd semester
TYPE OF COURSE: Mandatory
OBJECTIVES: The main objectives of the course are to learn the students the principles of concret calculation, starting with concrete plates, building concrete structure (Beams, walls and short overhangs; Flat-plates continuous supported etc.)

CONTENT: Principles of concrete calculation; Calculation of plain concrete elements; Calculation of reinforced concrete elements at the ultimate limit state; Fatigue calculation of reinforced concrete elements for linear loads during normal operation
Pre-stressed concrete; Stress loss in pre-stressed reinforcement; Determination of stress in concrete and reinforcement; Calculation of ultimate limit state resistance; Calculation of pre-tensioned concrete elements subjected to torsion; Calculation of pre-tensioned concrete elements subjected to fatigue
The limit state of strain calculation for pre- stressed concrete elements; Buildings elements made of reinforced concrete; Characteristic modes of monolithic structures; Calculation of the limit state of strength for bending with or without axial stress, calculation methods; Double armed elements with rectangular section; Elements with T-shaped section
Calculation of strength limit state of reinforced concrete elements subjected to eccentric compression; Calculation of strength limit state of reinforced concrete elements subjected to oblique bending with or without axial stress; Calculation of limit state of strength of reinforced concrete elements subjected to eccentric tensile load; Calculation of strength limit state of reinforced concrete elements subjected to shear forces; Calculation of strength limit state of reinforced concrete elements subjected to torsion; Cracking limit state calculation for reinforced concrete elements; Deformation limit state calculation for reinforced concrete elements; Fatigue limit state calculation of reinforced concrete elements.
Calculation of strength limit state of reinforced concrete elements with rectangular and T-shaped section subjected to eccentric compression;
Calculation of strength limit state of reinforced concrete elements with rectangular and T-shaped subjected to bending; Calculation of strength limit state of reinforced concrete elements with rectangular and T-shaped subjected to tensile load
Calculation strength limit state of reinforced concrete elements with rectangular and T-shaped section subjected to compression; Reinforced concrete frame structures; Structures of reinforced concrete diaphragms, vaults and arches; Prefabricated buildings, structural panels; Spatial Structures; Reinforced concrete foundation; Raft foundation made of reinforced concrete; Reinforced concrete pilots; Industrial halls; Special buildings made of reinforced concrete - supporting walls; tanks for liquids; chimneys.; Pre-stressed concrete Structures Designing .

Subject of study: Civil constructions I (Code D23CCL505) + Civil constructions II (Code D23CCL610)

NUMBER OF CREDITS: 4- 1st sem. + 5 – 2nd sem.
YEAR/SEMESTER: 3rd year/1st + 2nd semester
TYPE OF COURSE: Mandatory
OBJECTIVES: The course allows students to aquire the notions of finishing operations in construction elements and thermal insulation of buildings, understand the behavior of building structures for civil action gravity and horizontal loads from wind or earthquake - to know how to calculate all components of buildings

CONTENT: Introduction. Coordination modular construction tolerances and deviations. Shares in construction. The action of the fire on the building.
Hygrothermics in buildings.
Heat transfer through building elements.
Assessing the risk of condensation.
Hygrothermal compliance calculations for the building envelope.
Influence of humidity on construction.
Principles of sound insulation in buildings.
Natural lighting of buildings
TEACHING LANGUAGE: Romanian
EVALUATION: Written and oral examination
BIBLIOGRAPHY (selective):

Ciornei, A., - Construcţii civile, Ed. Junona, Iaşi, 2000.
Negoiţă, N., - Construcţii civile, Editura Didactică şi Pedagogică, Bucureşti, 1976
Pestişanu, C., - Construcţii, Editura Didactică şi Pedagogică, Bucureşti, 1979;
*** STAS 10107/0-90 - Construcţii civile şi industriale. Calculul şi alcătuirea elementelor de beton , beton armat şi beton precomprimat.
*** Calcul de proiectare seismică, P100-2006
*** Cod de proiectare structuri din zidărie

Subject of study: Wood constructions (Code D23CCL506)

NUMBER OF CREDITS: 4
YEAR/SEMESTER: 3rd year/1st sem.
TYPE OF COURSE: Mandatory
TEACHING LANGUAGE: Romanian
EVALUATION: Written and oral examination

Subject of study: Foundations (Code D23CCL507)

NUMBER OF CREDITS: 4
YEAR/SEMESTER: 3rd year/1st sem.
TYPE OF COURSE: Mandatory
TEACHING LANGUAGE: Romanian
EVALUATION: Written and oral examination

Subject of study: Structure Dynamics and elements of engineering seismology, Code: D23CCL606

NUMBER OF CREDITS: 4
YEAR/SEMESTER: 3rd year/2nd semester
TYPE OF COURSE: domain
OBJECTIVES: Assimilation by learners of specific notions of structural systems response to different types of dynamic actions. Determination of structural response is an essential element in the design of structural systems to dynamic and seismic actions for different types of construction. In this course, the student's thinking is oriented towards understanding the notion of behavior of structural systems for these types of actions.
CONTENT: Modeling dynamic actions. Structural modeling construction systems. Characterization of 1-DOF dynamic structural systems. Free vibrations of 1-DOF dynamic system in the absence and in the presence of damping. Forced vibration dynamic system 1GLD for actions with harmonic character. 1-DOF system response to a force pulse. The study of dynamical systems with n DOF. Vibration modes by using matrices [D] and {R}. Orthogonality

property of eigenvectors. Modal analysis of dynamic response. Numerical methods for calculating values and eigenvectors. Characterization of seismic action. Records of seismic movements. Seismic movement parameters. 1-GLD system response to seismic action (equation of motion: seismic response instantly, maximum earthquake response, seismic response spectra, seismic force concept) with nDOF system response to seismic action. Modal superposition

TEACHING LANGUAGE: Romanian
EVALUATION: Written and oral examination
BIBLIOGRAPHY (selective):

Mihail Ifrim - Dinamica structurilor şi inginerie seismică. EDP. 1984
R.W. Ctough, J. Penzien - Dynamics of Structures. McGraw Hill. 1993
A. Chopra - Dynamics of Structures. Theory and Applications to Earthquake Engineering," Prentice Hall. 2001
Fl. Macavei, V. F. Poterasu - Complemente de dinamica structurilor. Editura Virginia. Iaşi. 1993

Subject of study: Metalic constructions I (Code D23CCL611)

NUMBER OF CREDITS: 5
YEAR/SEMESTER: 3rd year/2nd sem.
TYPE OF COURSE: Mandatory
TEACHING LANGUAGE: Romanian
EVALUATION: Written and oral examination

Subject of study: Architectural elements, Code D23CCL612

NUMBER OF CREDITS: 2
YEAR/SEMESTER: 3rd year/2nd semester
TYPE OF COURSE:
OBJECTIVES: The course offers to the students general technical knowledge of design, composition and functionality of buildings and forming a unitary conception on the characteristics of architectural styles and historical developments in the world of construction.
Also, the course offers the learning the meanings of key terms needed in the dialogue between structural engineers and architects in the design, implementation and operation of buildings in general and especially of buildings.
CONTENT: General elements of construction history. Mainstream architecture. Elements of modern architecture. Architectural arts. Ancient architecture in Romania. Modern architecture in Romania. New architectural trends.
TEACHING LANGUAGE: Romanian
EVALUATION: Written/oral examination
BIBLIOGRAPHY (selective):

Blitz,E.,Dicţionar de construcţii şi arhitectură, Ed.Tehnică,Bucureşti,19731. Sevastean I. Ianca , *Elemente de arhitectură,* Editura „Politehnica" Timişoara, 2006
Curinschi,Gh., Istoria universală a arhitecturii,Vol I,II,III, Ed.Tehnică,Bucureşti,1975
Drîmba,O., Istoria culturii şi civilizaţiei, Vol,I,II,III Editura ştiinţifică şi enciclopedică, Bucureşti,1984.
Ianca,S.,I.,Elemente de arhitectură şi urbanism, Curs,Ed.U.T.Politehnica,Timişoara,1998
Ionescu,G., Istoria arhitecturii în Romania, Ed.Tehnică,Bucureşti,1970
Zevi,B., Cum să înţelegem arhitectura, Ed.Tehnică,Bucureşti,1969

Subject of study: Introduction in finite element method, Code D23CCL613

NUMBER OF CREDITS: 2
YEAR/SEMESTER: 3th year/2nd sem.
TYPE OF COURSE: Technical culture of specialty.
OBJECTIVES: This course forms and guide the students assimilation capacity for modelling and simulating, through modern methods, of the behavior in static and dynamic mode structures and mobile mechanical systems, based on multi body systems theory and finite element method.
Another aim is the one that it can be develop and form, the students ability through applications by using important modelling and analysis software (ADAMS, ANSYS, etc.).
CONTENT: Elements of matrices and vectorial algebra. Computer kinematic and dynamic modelling through computational methods of mechanical mobile systems.
Kinematic modelling and simulations with ADAMS software. Linear elasticity elements. Finite element modelling basics. Finite element modelling in static and dynamic mode of mechanical structures (theory and applications). Modelling and simulations by using finite element method with ANSYS and COSMOS software.
TEACHING LANGUAGE: Romanian
EVALUATION: Written examination
BIBLIOGRAPHY (selective):

Amirouche, F., Computational methods in multibody dynamics, Prentice-Hall, 1992.
Buculei M., Marin, M., Elemente de mecanică tehnică. Teorie şi aplicaţii, Ed. Universitaria, Craiova, 1994.
Brătianu, C., Metode cu elemente finite în dinamica fluidelor, Bucureşti, Ed.Academiei, 1983.
Corless, R.M., Essential in Maple, Springer-Verlag, 1995
Dumitru N., Margine A., Bazele modelării în ingineria mecanică.Editura Universitaria Craiova, 2002.
Dumitru N., Margine A., Organe de maşini. Asamblări. Elemente elastice. Proiectare asistată de calculator. Editura Universitaria Craiova, 2002.
Dumitru N., Margine, A., Catrina, Gh., ş.a., Organe de maşini. Arbori şi lagăre. Proiectare asistată de calculator, Editura Tehnica, Bucureşti, 2008, ISBN 978-973-31-2332-3.
Dumitru, N., Nanu, Gh., Mecanisme şi transmisii mecanice, Editura Didactică şi Pedagogică, Craiova, 2008.
Logan, Daryl, A First Course in the Finite Element Method, PWS Publishing Company, Boston, 1992.
Alexandru, P., Vişa, I. ş.a., Modelarea statico-dinamică a mecanismelor de ghidare ale roţilor automobilelor, Ed. LUX LIBRIS, Braşov, 2005.
Neagoe, D., Calculul şi construcţia autovehiculelor, vol.I, II, Ed.Universitaria, Craiova, 2000.
Oţăt, V., Bolcu, D., Thierheimer W., Simniceanu, L., Dinamica autovehiculelor, Ed.Universitaria, Craiova, 2005.
Ansys theory reference, 8th Edition SAS IP, Inc.
Adams flex guide Mechanical Dynamics rev. 10.0.

Subject of study: Practice (Code D23CCL614)

NUMBER OF CREDITS: 3
YEAR/SEMESTER: 3rd year/2nd semester
TYPE OF COURSE: Mandatory
TEACHING LANGUAGE: Romanian
EVALUATION: Written/oral examination

Subject of study: AutoCAD 3D, Cod: D22CCL615

NUMBER OF CREDITS: 2
YEAR/SEMESTER: 3rd year/2nd semester
TYPE OF COURSE: fundamental
OBJECTIVES: The course follows the basics of tridimensional modeling of the buildings, general knowledge and skills for knowledge and analysis, the design and creativity skills development. Used terms are conformable with our national and international regulations.
CONTENT: General aspects about Computer Graphics. The evolution of Computer Graphics. A short history of the CAD (Computer Aided Design) concept. The classification of the CAD systems. The location of the CAD concept in the industrial company. New concepts in CAD. The concepts and software adjacent to the CAD concept. The CAM (Computer Aided Machining) concept. The FEA (Finite Element Analysis) concept. The dynamic and kinematic simulation software. The virtual prototyping concept. Parameterization and bidirectionality. Modeling software modules. 2D sketches. Base and additional shapes. Coordinates systems. Tridimensional modeling. Modeling commands. Primitive models. Extrude and revolution solids. Solid operations. Commands for surface modeling. Commands for tridimensional viewing.
TEACHING LANGUAGE: Romanian
EVALUATION: Written/oral examination
BIBLIOGRAPHY (selective):

Autodesk Inc., 1992, AutoCAD Autolisp & API Under AME;
Autodesk Inc., 1992, AutoCAD Reference Manual;
Autodesk Inc., 1992, AutoCAD Render Reference Manual;
Autodesk Inc., 1992, AutoCAD SQL Extension Reference Manual;
Burchard Bill s.a., Secrete AutoCAD 14, Ed.Teora, Bucuresti, 1998.
Duta, A., Notiuni de desen in domeniul constructiilor, Ed. Universitaria, ISBN 978-973-742-853-0, Craiova, 2007 ;
Gherghina G., Popa D., Tudor M., Elemente de infografica tehnica - Teorie si aplicatii, Ed. Radical, Craiova, 1998;
Gherghina, G., Popa, D., Calbureanu, M.,Tudor, M., Grafica asistata de calculator. Doua modalitati de abordare, Reprografia Universitatii din Craiova, 2000 ;
Peterson, Michael Todd, 3D STUDIO MAX. Fundamente, Editura Teora, Bucuresti, 1998;
Popa D., Grafica asistata de calculator, Ed. Sitech, 2003, 154 pag., ISBN 973-657-444-X.
Popa D., Gherghina G., Calbureanu M., Grafica asistata de calculator pentru constructii. De la 2D la 3D, pp.280, Ed. Sitech, Craiova, ISBN 978-973-746-801-7, 2008;
Popa D., Gherghina G., Tutunea D., Grafica asistata de calculator pentru constructii. Desenare, modelare si programare, pp.343, ed. Sitech, ISBN 978-606-530-726-1, Craiova 2009.
***** CAD Report Journal- 1996-1998 arhive.

Subject of study: Insulations for Buildings, Code: D23CCL517

NUMBER OF CREDITS: 3
YEAR/SEMESTER: 3rd year/1st semester
TYPE OF COURSE: domeniu
OBJECTIVES: This course allows acquiring the correct knowledge and skills necessary to calculate the thermal resistance, the correct choice of materials and solutions and optimal thermal and acoustic insulation. Develops the technical skills of execution management in construction activities regarding the the thermal and acoustic insulation of buildings
CONTENT: Overview on building insulation. Building as a factor in achieving thermal and acoustic comfort. Hygrothermal, interior and exterior climatic parameters. Heat transfer laws. Heat transfer by conduction. Heat transfer by convection. Heat transfer by thermal radiation. Overall heat transfer of building elements. Response of the building envelope elements for heat transfer in non-stationary thermal regime. Building envelope elements response to water vapor diffusion. Vapor barrier. Corrected thermal resistance of building elements with thermal bridges. Elements to optimize the degree of thermal protection to building elements. Principles of thermal rehabilitation of buildings envelope elements. Materials and thermal and acoustic insulation solutions for tiles on the ground floor. Material solutions and thermal and acoustic insulation solutions for roofs and terraces. Waterproofing construction elements. Materials and solutions
TEACHING LANGUAGE: Romanian
EVALUATION: Written examination
BIBLIOGRAPHY (selective):

Călbureanu, M., Malciu, R. – Izolarea termică în construcţii, Editura Universitaria, Craiova, 2010
Călbureanu, M. – Metode numerice în transferul de căldură, Editura Universitaria, Craiova, 2004
Comsa, E., Moga, I., Constructii Civile Higrotemica si Acustica Cladirilor, I.P.Cluj-N., 1992;
Comsa, E., Moga, I., Proiectarea Functionala a cladirilor. Proiectarea higrotermica si acustica, I.P.C.-N.,88;
Moga, I., Manuale de utilizare pentru programe de calcul in higrotermica cladirilor (9 programe de calcul).
Comşa, E., Moga, I., Munteanu, C. – Proiectarea higrotermică a clădirilor-Curs postuniveritar, Cluj-N.,2004.
C 107/3-2005 - Normativ privind proiectarea şi executarea lucrărilor de izolaţii termice la clădiri.

Subject of study: Special problems of structure dynamics (Code - D23CCL620)

NUMBER OF CREDITS: 2
YEAR/SEMESTER: 3rd year/2nd semester
TYPE OF COURSE: Mandatory
TEACHING LANGUAGE: Romanian
EVALUATION: Written/oral examination

Subject of study :
Reinforced concrete structures IV (Code D22CCL701)

NUMBER OF CREDITS: 5- 1st sem..
YEAR/SEMESTER: 4th year/1st semester **TYPE OF COURSE**: Mandatory
TEACHING LANGUAGE: Romanian
EVALUATION: Written/oral examination

Subject of study: Civil constructions III (Code D23CCL702)

NUMBER OF CREDITS: 5- 1st sem. .
YEAR/SEMESTER: 4th year/1st sem.
TYPE OF COURSE: Mandatory
OBJECTIVES: The course allows students to aquire the notions of finishing operations in construction elements and thermal insulation of buildings, understand the behavior of building structures for civil action gravity and horizontal loads from wind or earthquake - to know how to calculate all components of buildings
CONTENT: Introduction. Coordination modular construction tolerances and deviations. Shares in construction. The action of the fire on the building.
Hygrothermics in buildings.
Heat transfer through building elements.
Assessing the risk of condensation.
Hygrothermal compliance calculations for the building envelope.
Influence of humidity on construction.
Principles of sound insulation in buildings.
Natural lighting of buildings
TEACHING LANGUAGE: Romanian
EVALUATION: Written and oral examination
BIBLIOGRAPHY (selective):
Ciornei, A., - Construcţii civile, Ed. Junona, Iaşi, 2000.
Negoiţă, N., - Construcţii civile, Editura Didactică şi Pedagogică, Bucureşti, 1976
Pestişanu, C., - Construcţii, Editura Didactică şi Pedagogică, Bucureşti, 1979;
*** STAS 10107/0-90 - Construcţii civile şi industriale. Calculul şi alcătuirea elementelor de beton , beton armat şi beton precomprimat.
*** Calcul de proiectare seismică, P100-2006
*** Cod de proiectare structuri din zidărie

Subject of study: Metalic constructions II (Code D23CCL703)

NUMBER OF CREDITS: 5
YEAR/SEMESTER: 4th year/1st sem.
TYPE OF COURSE: Mandatory
TEACHING LANGUAGE: Romanian
EVALUATION: Written and oral examination

Subject of study :
Management in construction I (Code D22CCL704) + Management in construction II (Code D22CCL810)

NUMBER OF CREDITS: 3 - 1st sem.; 3 – 2nd sem.
YEAR/SEMESTER: 4th year/1st + 2nd semester
TYPE OF COURSE: Mandatory

TEACHING LANGUAGE: Romanian
EVALUATION: Written/oral examination

Subject of study: Computer Aided Design, Code: D23CCL705

NUMBER OF CREDITS: 3
YEAR/SEMESTER: 4th year/1st semester
TYPE OF COURSE: fundamental
OBJECTIVES: The course offers the general informations and concepts of Computer Aided Design of the civil and industrial buildings resistance structures, and the capacity to operate with ETABS, finite elements method used in civil engineering.
CONTENT: ETABS: 3d modelling of the civil and industrial buildings resistance structures build from reinforced concrete or metallic profiles. Setting the support and loading conditions for the buildings structures. Applying the seismic loads to the model. Creating the load combination for the seismic complete design. Obtaining the diagrams of the efforts N, T, M, for the elements of construction. The calculus for the reinforcing bars for columns, piers, slabs, walls and the calculus for the metallic profiles sections.
TEACHING LANGUAGE: Romanian
EVALUATION: Written/practice examination
BIBLIOGRAPHY (selective):
1.*** - Technical documentation ETABS
2.Negru Mihai, Proiectarea asistata de calculator cu ETABS, CD, 2010.

Subject of study: Works technology in construction I (Code D23CCL706); Works technology in construction II (Code D23CCL811)

NUMBER OF CREDITS: 4 – 1 st sem.; 3 – 2nd sem.
YEAR/SEMESTER: 4th year/1st + 2nd sem.
TYPE OF COURSE: Mandatory
TEACHING LANGUAGE: Romanian
EVALUATION: Written and oral examination

Subject of study: Masonry mechanics, Code D23CCI707

NUMBER OF CREDITS: 3
YEAR/SEMESTER: 4th year/1st semester
TYPE OF COURSE: Mandatory
OBJECTIVES: The course provides to the students an understanding of the formulas for calculating the various demands faced by masonry structures, the possibility of applying the formulas for calculating the horizontal and vertical loads they are subjected to simple and mixed masonry structures and explaining and interpreting physical and mechanical phenomena due to seismic and wind action.
CONTENT: Calculation of simple masonry centric and eccentric compression.
Reinforced masonry calculation centric and eccentric compression.
Calculation of mixed masonry.
Calculation of masonry structures required in horizontal and vertical loads.
Calculating the capacity of eccentric compressive strength of masonry simple.
Calculating the eccentric compressive capacity of

masonry reinforced concrete pillars.
TEACHING LANGUAGE: Romanian
EVALUATION: Descriptive written
SELECTIVE BIBLIOGRAPHY:
Ciornei, A., - Construcţii civile, Ed. Junona, Iaşi, 2000.
Negoiţă, N., - Construcţii civile, Editura Didactică şi Pedagogică, Bucureşti, 1976
Pestişanu, C., - Construcţii, Editura Didactică şi Pedagogică, Bucureşti, 1979;
Vintilă, D., Mecanica Zidăriilor-curs, Editura Sitech, 2012, Craiova.
STAS 10107/0-90 - Construcţii civile şi industriale. Calculul şi alcătuirea elementelor de beton , beton armat şi beton precomprimat.
Calcul de proiectare seismică, P100-2006
Cod de proiectare structuri din zidărie
STAS 10100/0-75 - Principii generale de verificare a siguranţei construcţiilor
STAS 10100/0-2A2 - Acţiuni în construcţii
STAS 10102-75 - Construcţii din beton armat şi beton precomprimat
STAS 10107/0-90 - Calculul şi alcătuirea elementelor structurale din beton, beton armat şi beton precomprimat
STAS 10107/1-77 - Calculul şi alcătuirea planşeelor din beton şi beton precomprimat
STAS 10107/2-77 - Planşee curente din plăci şi grinzi din beton armat şi beton precomprimat

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Subject of study: Informatics equipment in constructions (Code D23CCL808)
NUMBER OF CREDITS: 3
YEAR/SEMESTER: 4th year/2nd sem.
TYPE OF COURSE: Mandatory
TEACHING LANGUAGE: Romanian
EVALUATION: Written and oral examination

Subject of study: Safety of the structure in seismic and wind actions Code D23CCL714)
NUMBER OF CREDITS: 2
YEAR/SEMESTER: 4th year/1st sem.
TYPE OF COURSE: Mandatory
TEACHING LANGUAGE: Romanian
EVALUATION: Written and oral examination

Subject of study: Metal Buildings III, Code: D23CCL809
NUMBER OF CREDITS: 5
YEAR/SEMESTER: 4th year /2nd semester
TYPE OF COURSE: Mandatory
OBJECTIVES: The course provides to the students to explain the concepts of constructive composition of structural assembly halls strength structure steel, structural components of their role, presenting concepts related to charges faced by steel structures of halls, relaying their foundations and computational checking of structural elements.
CONTENT: Composition whole metal structure of a hall resistance.Load on the structure halls. Location, role, composition and design verification by calculation of roof purlins. Composition design and verification by calculation of trusses of the roof.
Composition design and verification by calculation of the beams supporting taxiways.
Composition design and verification by calculation of metal poles halls.
Composition design and verification by calculation from the roof bracing with steel. Composition design and verification by calculation of vertical bracing longitudinal row of pillars.
TEACHING LANGUAGE: Romanian
EVALUATION: Descriptive written and problems
SELECTIVE BIBLIOGRAPHY:
Câmpian C., Elemente de constructii metalice, UTPRES Cluj Napoca
Dalban C., s.a.- Constructii metalice, Ed. D.P. 1976, 1983
Mateescu Dan, Constructii metalice speciale, E. Tehnică, 1962
Popescu V., Constructii metalice industriale, E. Tehnică, 1975
Popescu V, Constructii Metalice, E. Tehnică, 1963, 1975.

Subject of study: Marketing (Code D23CCL816)
NUMBER OF CREDITS: 3
YEAR/SEMESTER: 4th year/2nd sem.
TYPE OF COURSE: Optional
TEACHING LANGUAGE: Romanian
EVALUATION: Written and oral examination