Field of study: Industrial Engineering and Management

Programme of studies: Economical Engineering for Mechanics fields

First year:

Subject of study: Mathematical Analysis, Code:D22IEML101

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: Technical chemistry (Code D22IEML102)

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: D22IEML103

NUMBER OF CREDITS: 4
YEAR/SEMESTER: 1st year/1st semester
TYPE OF COURSE: domain
OBJECTIVES: The course offers the students general concepts about mechanics and how these concepts may be applied in other technical and specialized fields.
CONTENT: Reduction of systems of vectors (forces). Mass geometry. Statics of a material point and of material points systems. Statics of a rigid solid and of rigid solids systems. Kinematics of a material point.
TEACHING LANGUAGE: Romanian
EVALUATION: Written examination
BIBLIOGRAPHY (selective):
Voinea, R., Voiculescu, D., Ceauşu, V., Mecanică, Editura Didactică şi Pedagogică, Bucureşti, 1984.
Bălan, Şt., Culegere de probleme de mecanică, Editura Didactică şi Pedagogică, Bucureşti, 1977.
Nanu, Gh., Vintilă, D., Mecanică – teorie şi aplicaţii, Editura Universitaria, Craiova, 2003.
Nanu, Gh., Vintilă, D., Mecanică generală, vol. I, vol. II, Editura Sitech, Craiova, 1999.
Băgnaru, D., Vintilă, D., Nanu, Gh., Cătăneanu, A., Grigorie, L., Mecanică – Teorie, Lucrări de laborator, Editura Sitech, Craiova, 2010.

Subject of study: Basics of economy (Code D22IEML104)

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

Subject of study: Technical drawing and infographics I (Code: D22IEML105)+ Technical drawing and infographics II (Code: D22IEML213)

NUMBER OF CREDITS: 3- 1st sem./3 -2nd sem.
YEAR/SEMESTER: 1st year/1st and 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 industrial technical design, to develop the creative skills to prepare project designs. Terms used are under current standards and international standards.
CONTENT:
Representations used in technical drawing. Representation in ortogonal projection. Representation of views, sections and breakage. Representation of views intechnical drawing. Dimensioning in technical drawing: classification of dimensions; rules of listing. Registration quotas on the drawing. Methods of dimensioning and special cases for dimensioning. Representation of the threads. Tolerances. Dimensional accuracy. Linear and angular dimensions tolerances. Accuracy of shape and position of geometrical elements. Surface condition. Specific and conventional representations. Representation and cylindrical and tapered holes dimensions. Drawing overviews. Rules of representation, positioning of the components and dimensioning design overall. From snap-on. Threaded assembly. Elastic assembly.
TEACHING LANGUAGE: Romanian
EVALUATION: Written/oral examination
BIBLIOGRAPHY (selective):
Ene Al.I.- “Desen tehnic industrial”, Editura SITECH, Craiova, 1995;
Marin, D; Raicu, L.; Adir, V.; Dobre, D.- “Desen tehnic industrial. Teorie si aplicatii” Editura 57 BREN, Bucuresti, 1999;
Precupeţu P.; ş.a,- “Desen tehnic industrial pentru construcţia de maşini”, Editura Tehnică, Bucureşti, 1982;

Vasilescu, E.-"Desen tehnic. Teme. Elemente de introducere în proiectare",Litografiat, IPB,1984;
Vasilescu, E.; ş.a.-"Desen tehnic. Elemente de proiectare",Editura Tehnicã, Bucureşti,1994;
I.R.S. Catalogul Standardelor Române ,Editura Tehnicã, Bucureşti.

Subject of study: Computer programming and programming languages I (Code: D22IEML106)+ Computer programming and programming languages II (Code:D22IEML214)

NUMBER OF CREDITS: 3 + 4
YEAR/SEMESTER: 1st year / 1st + 2nd semester
TYPE OF COURSE: Mandatory
OBJECTIVES: To develop at students basic skills in the use of Windows operating systems, to familiarize students with development of fundamental algorithms and programming theory; learn students with programming in "C" language and development of Windows applications.
CONTENT: Architecture of a computer system, internal representation of information; Numeration bases, logic functions, elements of algorithms, Introduction to C language vocabulary - operators; Instructions and statements of C language, expressions, functions, I / O operations Elementary; Pointers and arrays, structures and unions in C, use of strings, dynamic memory allocation, library functions, simple chain lists, double chain lists, recursion, files in C, solving systems of linear equations structure Windows applications , Programming mouse related events, GDI functions; Use of type menu and dialog box in Windows,.
TEACHING LANGUAGE: Romanian
EVALUATION: Written examination
BIBLIOGRAPHY (selective):
Knuth D.E. , Treaty of computer programming. fundamental algorithms, Ed. Tehnica, 1973
Burdescu, D., - Algorithms and data structures, Ed. Mirton, Timişoara, 1992
Petrovici, V., - Programming in C language, Ed. Tehnică 1993, Bucureşti
Kernighan B., Ritchie D. , The C Programming Language, Prentice Hall, 1988
Pădeanu, L., O., Windiws programming in C language, Reprografia Univ. din Craiova, 1993
Petzold Charles, Programming Windows, 6th edition, Microsoft Press, 2012

Subject of study: Study of materials, Code D22IEML107

NUMBER OF CREDITS: 5
YEAR/SEMESTER: 1st year / 1st semester
TYPE OF COURSE:Mandatory
OBJECTIVES: The course offers students theoretical concepts of the correlation between microstructure, properties and processing of the metallic materials.
CONTENT: Crystal structures of metallic materials. Crystalline lattices and imperfections in crystalline solids. Plastic deformation of metallic materials (plastic deformation of single crystals and polycrystalline materials). Properties of metallic materials. Crystallization principles of metallic materials. Theory of binary alloy systems. Crystallization of iron-carbon alloys. Heat treatments and thermo-chemical treatments of ferrous materials. Non-ferrous metals and alloys. Advanced materials developments.
TEACHING LANGUAGE: Romanian
EVALUATION: Written examination
BIBLIOGRAPHY (selective):
C. Teisanu – Metalurgie Fizica pentru Ingineri
M. Radulescu – Studiul Materialelor, EDP
H. Colan – Studiul Materialelor, EDP
I. Trusculescu – Studiul Materialelor, EDP
S. Gadea – Metalurgie Fizica si Studiul Metalelor, EDP, 1980
R. Saban, D. Gheorghe s.a - Studiul si Ingineria Materialelor, Editura Didactica si Pedagogica, Bucuresti, 1995
C. Baciu, I. Alexandru, R. Popovici s.a - Stiinta Materialelor Metalice, Editura Didactica si Pedagogica, Bucuresti, 1996
N. Popescu, R. Saban, I. Pencea s.a - Stiinta Materialelor pentru Inginerie Mecanica, Ed. Fair Partners, Bucuresti, 1999

Subject of study: Physical education I (Sport) (Code D22IEML108)

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 D22IEML109)

NUMBER OF CREDITS: 3
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:D22IEML210

NUMBER OF CREDITS: 5
YEAR/SEMESTER: 1st year / 2nd semester
TYPE OF COURSE: Mandatory
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,
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: Numerical applications in engineering (Matlab, Simulink, Mathcad) (Code D22IEML211)

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

Subject of study: Mechanics II, Code D22IEML212

NUMBER OF CREDITS: 6
YEAR/SEMESTER: 1st year/2nd semester
TYPE OF COURSE: Mandatory
OBJECTIVES: The course offers the students general concepts about mechanics and how these concepts may be applied in other technical and specialized fields.
CONTENT: Kinematics of a rigid solid and of rigid solids systems. Kinetics. Dynamics of a material point. Dynamics of material points systems and of a rigid solid.
TEACHING LANGUAGE: Romanian
EVALUATION: Written examination
BIBLIOGRAPHY (selective):

Voinea, R., Voiculescu, D., Ceauşu, V., Mecanică, Editura Didactică şi Pedagogică, Bucureşti, 1984.
Bălan, Şt., Culegere de probleme de mecanică, Editura Didactică şi Pedagogică, Bucureşti, 1977.
Nanu, Gh., Vintilă, D., Mecanică – teorie şi aplicaţii, Editura Universitaria, Craiova, 2003.
Nanu, Gh., Vintilă, D., Mecanică generală, vol. I, vol. II, Editura Sitech, Craiova, 1999.
Băgnaru, D., Vintilă, D., Nanu, Gh., Cătăneanu, A., Grigorie, L., Mecanică – Teorie, Lucrări de laborator, Editura Sitech, Craiova, 2010.

SUBJECT OF STUDY: Organizational behavior, Code:D22IEML215

NUMBER OF CREDITS: 3
YEAR/SEMESTER: 1st year/ 2nd semester
TYPE OF COURSE: Mandatory
OBJECTIVES: The discipline provides the students with the ability to understand: the people behavior; the management processes' organisational environment; the modalities through wich the individuals' behavior, groups dynamics and interaction with the external environment might yield the organisation's performance and efficiency; the significance and specificities of team cooperation in an environment with continuously growing competitiveness; the role of decisions in the organizations' everyday activity with respect to aspects specific to human behaviour; the significance of both distinct and complementary activities – management and leadership – in a performing organization.
CONTENT: Organizational behavior– context and interactions. Individuals within the organization's framework. Groups within the organization's framework. Organization and organisational processes. Organizational management and leadership
TEACHING LANGUAGE: Romanian
EVALUATION: Written evaluation
BIBLIOGRAPHY (selective):

Cismaru Diana – Comunicarea interna in organizatii. Ed Tritonic, Bucuresti, 2008
Marcu Mihaela – Comunicare si structuri organizationale, Ed. Universitaria, Craiova, 2009
Preda Marian – Comportament organizational. Teorii, exercitii si studii de caz. Ed POLIROM, Iasi, 2006
Vlasceanu Mihaela – Organizatii si comportament organizational, Ed POLIROM, Iasi, 2003
http://www.mim.utcluj.ro/uploads/pages/30_Comportamentul_organizational_D19.pdf.
www_RegieLive_ro_COMPORTAMENT_ORGANIZATIONAL.zip\Comportament Organizational - ZIP archive, unpacked size 4.743.232 bytes
http://ro.scribd.com/doc/12194188/comportament-organizational
http://www.apubb.ro/wp-content/uploads/2011/02/curs-Teorii-Organizational-Master.pdf

Subject of study: Physical education II (Sport) (Code D22IEML216)

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

Subject of study: History of technics (Code D22IEML216)

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) II (Code D22IEML220)

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

Second year:

Subject of study: Special mathematics
Code: D22 IEML323

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

Subject of study: Technical drawing and infographics, D22IEML324

NUMBER OF CREDITS: 3
YEAR/SEMESTER: 2nd 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 to represent industrial technical design, to develop the creative skills to prepare project designs. Terms used are under current standards and international standards.
CONTENT:
Representing permanent joints. Riveted joints. Representing welded or soldered joints. Preparation of technical drawings for a welded components of an assembly. Technical representation for gears. Representing feathered joints and straight dovetail joints. Technical representation for shafts. Project theme: preparation of technical drawings for two cylindrical gears fixed on shafts. Representation of bearings and sealing gland. Preparation of project design for gearbox assembly
TEACHING LANGUAGE: Romanian
EVALUATION: Written/oral examination
BIBLIOGRAPHY (selective):
Ene Al.I.- “Desen tehnic industrial”, Editura SITECH, Craiova, 1995;
Marin, D; Raicu, L.; Adir, V.; Dobre, D.- “Desen tehnic industrial. Teorie si aplicatii” Editura 57 BREN, Bucuresti, 1999;
Precupeţu P.; ş.a,- “Desen tehnic industrial pentru construcţia de maşini”, Editura Tehnică, Bucureşti, 1982;
Vasilescu, E.-“Desen tehnic. Teme. Elemente de introducere în proiectare”,Litografiat, IPB,1984;
Vasilescu, E.; ş.a.-“Desen tehnic. Elemente de proiectare”,Editura Tehnicã, Bucureşti,1994;
I.R.S. Catalogul Standardelor Române ,Editura Tehnicã, Bucureşti

Subject of study: Computer Aided Design, Basis , Code: D22IEML325

NUMBER OF CREDITS: 4
YEAR/SEMESTER: 2nd year/1st semester
TYPE OF COURSE: Mandatory
OBJECTIVES: The course offers the general informations and concepts of Computer Aided Design, and the capacity to operate cu AutoCad program an d the capacity to perform design calculus using adequate programs.
CONTENT: AutoCad: 2D drawing and editing. 3d modelling and editing of solids. Design applications programming using AutoLisp. Design elements using AutoCad Mechanical. Design calculus basis with MathCad program.
TEACHING LANGUAGE: Romanian
EVALUATION: Written/oral examination
BIBLIOGRAPHY (selective):
1. Negru Mihai., Bazele Proiectarii Asistate de Calculator, Editura Universitaria 2007;
2. Kris Jamsa., Totul despre Autocad 2008, Editura Teora, Bucuresti, 2008;
3. *** - Technical documentation AutoCad 2012
4. *** - Technical documentation MathCad
5. *** - Technical documentation AutoCad Mechanical

Subject of study: Mechanisms, Code:D22IEML326

NUMBER OF CREDITS: 5
YEAR/SEMESTER: 2nd year/1st semester
TYPE OF COURSE: Mandatory
OBJECTIVES: The course objectives: to familiarize the students with fundamental notions regarding mechanisms and machine elements. Structural calculus methods, kinematics, kinetostatics and dynamics of mechanisms. The basic skills to conceive and design mechanisms is another goal of the course.
CONTENT:
Structural analysis of mechanisms;
Kinematical analysis of planar mechanisms;
Kinetostatical analysis of planar mechanisms;
Dynamic analysis of planar mechanisms.
TEACHING LANGUAGE: Romanian
EVALUATION: Written/oral examination
BIBLIOGRAPHY (selective):
1. Artobolevskii, I., I., Teoria mecanismelor şi a maşinilor (traducere din limba rusá), Editura Tehnica, Bucureşti, 1955.
2. Buculei, M., Bagnaru, D., s.a. Metode de calcul in analiza mecanismelor cu bare, Ed. Scrisul Romanesc, Craiova, 1986.
3. Handra-Luca, V., Stoica, I.,A., Introducere în teoria mecanismelor, vol. II, editura Dacia, 1983.
4. Pelecudi, Chr., ş.a., Mecanisme, E.D.P., Bucureşti, 1985.
5.Popescu, I., Proiectarea mecanismelor plane, Ed. Scrisul Romanesc, Craiova, 1977.
6.Dumitru, N., Mecanisme spaţiale, Ed. Universitaria, Craiova , 1999.
7.DUMITRU BOLCU, DANIELA TARNIŢĂ- Elemente de calcul si modelare a structurilor compozite, Editura Universitaria, Craiova, 2001 ISBN973-8043-38-7
8.DANIELA TARNIŢĂ - Mecanisme acţionate cu arcuri. Metode de analiză şi sinteză dinamică, Editura Universitaria, Craiova, 1998 ISBN:973-9271-29-4
9.IULIAN POPESCU, DANIELA TARNIŢĂ, - Mecanisme. Curs pentru profilul electric, Reprografia Universităţii din Craiova,1997
10.DANIELA TARNIŢĂ - Mecanisme, Calculul şi construcţia mecanismelor acţionate cu elemente elastice, cu aplicaţii în electrotehnică, Reprografia Univ. din Craiova, 1996
11.DANIELA TARNITA, DUMITRU BOLCU, Metode de analiza cinematica a mecanismelor plane,

Editura Didactica si Pedagogica, Bucuresti, 2005, ISBN 973-30-1485-0.

12.DUMITRU BOLCU, DANIELA TARNITA, Metode de analiza cinetostatică a mecanismelor plane, Editura Didactică şi Pedagogică, Bucureşti, 2009,ISBN 973-30-1485-0.

Subject of study: Technical statistics, Code:D22IEML327

NUMBER OF CREDITS: 3
YEAR/SEMESTER: 2nd year/1st semester
TYPE OF COURSE: Mandatory
OBJECTIVES: The course objective is to present and to familiarize the students with the notions and fundamental elements regarding probabilistic theory and statistic calculus. Also, another objective is to teach the students the statistic calculus methodology, with applications in technical and economical domain.
CONTENT:
Notions of probabilistic theory. Random variables; Events; discrete random variables. Discrete repartition laws; Elements of estimative theory. Statistical hypotheses. Verification of statistical hypotheses; Notions of errors theory
Systematization of statistical data;
Primary and derivative statistical indicators;
Central trend indicators;
Variation indicators;
Statistical selection;
Dispersion analysis
Correlation- Regression method; Simple correlation coefficient; Correlation ratio; Regression and multiple correlation;
Chronological series; Methods for trend analysis and determination
TEACHING LANGUAGE: Romanian
EVALUATION: Written/oral examination
BIBLIOGRAPHY (selective):
Baron, T., Biji, E.,-Statistică teoretică şi economică, E.D.P., Bucureşti, 1996.
Bădiţă,M., Baron,T., -Statistica, Editura SYLVI, Bucureşti,1993
Bădiţă,M.,Cristache,S.,-Statistica-Aplicaţii, Editura Mondan, Bucureşti, 1998.
Biji, M., Biji, E.,-Statistica teoretică, E.D.P., Bucureşti,1979
Capanu, I., -Statistica economică, E.D.P., Bucureşti, 1984.
Caius,I.,ş.a. -Matematici clasice şi moderne, Ed.Tehnică, Bucureşti, 1979
Moineagu,C.,ş.a.-Statistica, Ed.Ştiinţifică, Bucureşti, 1976.
Tarniţă, D.,-Statistică aplicată, Editura Universitaria , Craiova, 2003.
Tarniţă, D.,-Statistică. Teorie si aplicatii, Editura Universitaria , Craiova, 2004.
Vasilescu, Gh., ş.a.-Statistica, Ed. Didactică şi Pedagogică, Bucureşti, 1980.
Zanfir, Şt., -Matematici speciale aplicate în economie, Ed.Universitaria, Craiova, 1998.

Subject of study: Operations researches, Code: D22IEML328

NUMBER OF CREDITS: 4
YEAR/SEMESTER: 2nd year / 1st semester
TYPE OF COURSE: Mandatory
OBJECTIVES: The course of this mathematical domain aims to form the capacity to make optimal decisions, based on advanced analytical methods in order to solve complex problems of production, transport and other. The result must be obtaining a maximum profit, performance, efficiency, or a minimum of loss, risk, cost, for some specific situations in the real world.
CONTENT: Solutions for unfolding a production cycle, called basic programs; Special production cycles and their representation by special mathematical models; Determination of some optimal basic programs using duality; Study of some production cycles in which the number of finished products must fall between a superior edge and an inferior edge; The complete optimization of a production cycle; Decentralization of decisions and management at two levels; The transport-allocation type models; Special algorithms; General model of "transport" type; Other problems encountered during a cycle production.
TEACHING LANGUAGE: Romanian
EVALUATION: Written examination
BIBLIOGRAPHY (selective):
Dantzig G.B, Wolfe, P., Decomposition Algoritm for Linear Programming, Econometrica, 9, nr. 4, 1961, Linear Programming and Extension, Princeton Univ. Press, 1957. N.J 1963.
Dragomirescu M., Maliţa M., Programarea pătratică, Ed. Stiinţifică, Bucureşti, 1968.
Stavre, P., Stănescu, M.M., Cercetări Operaţionale, Vol. I, Ed. SITECH, Craiova 2004.
Stavre, P., Stănescu, M.M., Rezolvarea algoritmică a sistemelor de ecuaţii liniare. Aplicaţii, Ed. MatrixRom, Bucureşti, 2007.
Stănescu, M.M., Bolcu, D., Ciucă, I., Cercetări Operaţionale. Programare în numere întregi. Ed. Universitaria, Craiova, 2010.

Subject of study: Physical education (Sport) (Code D22IEML329)

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

Subject of study: Law and economical legislation (Code: D22IEML330)

NUMBER OF CREDITS: 4
YEAR/SEMESTER: 2nd year/1st semester
TYPE OF COURSE: Mandatory
TEACHING LANGUAGE: Romanian
EVALUATION: Written/Oral

Subject of study: Foreign language (English, Francaise, Deutsch IV (Code D22IEML332)

NUMBER OF CREDITS: 3
YEAR/SEMESTER: 2nd year/1st semester

TYPE OF COURSE: optional
TEACHING LANGUAGE: -
EVALUATION: Written/oral examination

Subject of study:Technical physics (Code D22IEML433)

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

Subject of study: Materials technology, Code: D22IEML434

NUMBER OF CREDITS: 5
YEAR/SEMESTER: 2nd year / 2nd semester
TYPE OF COURSE:Mandatory
OBJECTIVES: The course offers the students theoretical and practical concepts regarding the main technology of production and processing technical materials.
CONTENT: Classification of material properties; metal materials; obtaining metallic materials; metal casting; powder metallurgy; plastic deformation of metals; welding of metallic materials; technologies unconventional; NDT materials.
TEACHING LANGUAGE: Romanian
EVALUATION: Written/oral examination
BIBLIOGRAPHY (selective):
Gheorghe, St, Teisanu, C., Tehnologia materialelor, Editura Universitaria din Craiova, 2009.
Amza, Gh. ş.a., „Tehnologia materialelor", Ed.Tehnică, Bucureşti, 1999;
Butnariu, I ş.a. Procese şi tehnologii în metalurgia extractivă, Editura Tehnică Bucureşti, 1995.
Cheşa, I ş.a. Alegerea şi utilizarea oţelurilor, Editura Tehnică, Bucureşti 1084.
Gheorghe Şt, Aliaje sinterizate antifrictiune pe baza de cupru, Editura UNIVERSITARIA, 2002.
Mangra, M. ş.a, Tehnologii si aplicatii in metalurgia pulberilor, Editura Universitaria Craiova, 2002

Subject of study: Strength of materials, Code: D22IEML435

NUMBER OF CREDITS: 6
YEAR/SEMESTER: 2nd year/ 2nd semester
TYPE OF COURSE: fundamental
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. I şi II, Ed. Universitaria, Craiova 2011.
Miritoiu, C, Ilincioiu, D, Rezistenţa Materialelor. Aplicaţii, vol.I, Ed. SITECH, Craiova 2012.

Subject of study: Fluids mechanics, Code : D22IEML436

NUMBER OF CREDITS: 4
YEAR/SEMESTER: 2nd year/2nd semester
TYPE OF COURSE: fundamental
OBJECTIVES: The course offers to the students the theoretical and practical concepts about the fluids flow with application in the mechanical engineering
CONTENT:
The main properties of fluids. The general methods of study used in the mechanics of fluids. The fundamental equations of the mechanics fluids. The kinematics of the fluid. The dynamics of the ideal fluids. The statics of fluids. The dynamics of the viscous fluids under the laminar and turbulent flow. The applied of the mechanics of fluids**.**
TEACHING LANGUAGE: Romanian
EVALUATION: Written/oral examination
BIBLIOGRAPHY (selective):
1.Anton L., The mechanics of fluids and hydraulic machines, The Horizons University Publishing House,Timisoara,1998,
2. M.Buculei, M. Radulescu, Talu M., Mihaela Buculei, The mechanics of fluids and the hydraulics machinery .Vol.I, The Universitaria Publishing House, Craiova, 2011.
3.Constantinescu VN, The dynamics of the viscous fluids under in the laminar regime, The Academy PublishingHouse,Bucharest,1983;
4.Ghe.Dan Ionescu, Introduction into the mechanics of fluids, The Technical Publishing House, Bucharest, 2005
5.Rădulescu V., N. Vasiliu – The fluid of mechanics, Fundamentals and Applications. Collection of problems, The Printech Publishing House, Bucharest, 2004;
6. Talu M., The fluid of mechanics. Theory and applications solved computationally using the finite element method or by numerical simulation. The Universitaria Publishing House, Craiova , 2008
7.Ungureanu V.,The fluid of mechanics and the hydraulic machines, The Transilvania University Publishing House, Brasov, 2008;

Subject of study: Domestin and international trade (Code D22IEMLL437)

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

Subject of study: Management (Code D22TCML438)

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

EVALUATION: Written/oral examination

Subject of study: Physical education (Sport) (Code D22IEML439)

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

Subject of study: Practice (Code D22IEMLL440)

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

Subject of study: Foreign language (English, Francaise, Deutsch IV (Code D22IEML441)

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

Third year of study:

Subject of study: Machine Elements I (Code D22IEML547) + Machine Elements II (Code: D22IEML655)

NUMBER OF CREDITS: 5-1st sem. ; 3 – 2nd sem.
YEAR/SEMESTER: 3th year/1st and 2nd semester
TYPE OF COURSE: Mandatory
OBJECTIVES: Promoting and developing of some concepts, machine elements design procedures and techniques from mechanical and mechatronic systems structure, stimulating and forming the creativity students skills by elaborating original solutions and modern design through facilities brought by CAD/CAM/CAE.
CONTENT: Machine elements design basics; Screw fastening and power screw transmissions; Gears and gear transmissions; Chain drives; Friction wheels transmissions; Belt drives; Continuously variable transmissions; Shafts and axes; Rolling contact bearings; Sliding contact bearings; Couplings; Sealing elements; Threaded joints; Assemblies through sunk and tapered keys; Spline assemblies; Polygonal profiles assemblies; Cotter and knuckle joints; Conical couplings; Assemblies through conical friction elements; Clamp couplings; Fretting and fatigue assemblies; Assemblies through elastic and dumping elements.
TEACHING LANGUAGE: Romanian
EVALUATION: Written examination
BIBLIOGRAPHY (selective):

Catrina, Gh. s. a., Organe de maşini. Îndrumar de proiectarea pentru transmisii mecanice, Editura Universitaria. Craiova, 2012.
Catrina, Gh., Proiectarea transmisiilor prin cuple elicoidale, Facultatea de Mecanică Craiova, 1988.
Crudu, I., Atlas de reductoare, EDP, Bucureşti, 1983.
Dieter Muhs, s.a, Roloff/ Matek Machinenelemente Viewegs Fachbucher der Technic, 2003.
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.
Dumitru, N., Organe de maşini. Angrenaje. Elemente de proiectare, R. Univ. Craiova, Craiova, 1996.
Dumitru, N., Organe de maşini. Transmisii mecanice, R. Univ. Craiova, Craiova,1996.
Ivanov M. N., Organe de maşini, Editura Tehnică „Chişinău", Universitatea Tehnică a Moldovei, 1997.
Robert L. MOTT, Machine Elements in mechanical Design, Prentice Hall, Columbus, Ohio, 1999.

Subject of study: Surfaces generation on machine tools-basis, D22IEML548

NUMBER OF CREDITS: 4
YEAR/SEMESTER: 3rd year/1st semester
TYPE OF COURSE: Mandatory
OBJECTIVES: The course offers the students theoretical and practical concepts of the surfaces generation, physical principles of the cutting process as well as a knowledge of the characteristics phenomena of the cutting processes
CONTENT: Kinematics of cutting process. Physical principles of cutting process (chips formation and types of chips, the importance of chips shape, built-up-edges etc.). Plastic deformations of workpiece material. Forces and power in cutting processes, thermal phenomena in cutting processes. Cutting fluids. Tool wear and tool life. Vibration in cutting process. The quality of machined surfaces.
TEACHING LANGUAGE: Romanian
EVALUATION: Written/oral examination
BIBLIOGRAPHY (selective):

Ciolacu, F.G., Mazilu D., Crăciunoiu N., Aşchiere şi procedee de prelucrare, Reprografia Universităţii din Craiova, 1999.
Ciolacu, F.G.,Crăciunoiu, N., Benga, G.C, Aşchiere şi procedee de prelucrare, Editura Sitech, Craiova, 2008.
Cozmincă, M.,Panait, S., Constantinescu, S., Bazele aşchierii, Editura Instit. Politehnic, Gh. Asachi, Iaşi, 1995
DeGarmo, E.P., Black, J.T., Kohser, R., Materials and Process in Manufacturing, Eight Edition, Pretince Hall, Upper Saddle River, NJ, 1997.
Oprean, A., ş.a., Bazele aşchierii şi generării suprafeţelor, Editura Didactică şi Pedagogică, Bucureşti, 1981;
Popescu I., Teoria aşchierii, Universitatea din Craiova, Facultatea de Mecanică, 1994.

Subject of study: Engineering and product design, Code: D22IEML549

NUMBER OF CREDITS: 5
YEAR/SEMESTER: 3nd year/1st semester
TYPE OF COURSE: Mandatory
OBJECTIVES: The course offers students the theoretical and practical aspects of product design (design, ergonomics, aesthetics).
CONTENT:
Introduction to product design; Specifications of a product design; Methods of generation / selection of concepts; Design and obtaining forms; Product modeling; Detailed design; Operational management of design; Industrial product design; Shape and color of products; Aesthetic evaluation methods products; Technical engineer and creator of beautiful.
TEACHING LANGUAGE: Romanian
EVALUATION: Written/oral examination
BIBLIOGRAPHY (selective):

Dumitru, C., Ingineria produselor. Principii de proiectare, management şi desing, Editura Universitaria, Craiova, 2002;
Creţu, I. - Iniţiere în estetica produselor, Bucureşti, Editura Tehnică, 1973;
Paul, C. - Industrial design, Bucureşti, Editura Merdiane, 1973;
Rognitz, H. - Proiectarea formei, Bucureşti, Editura Tehnică, 1958;
Moldovan, V., Şaramet, G. - Formă şi culoare în construcţia de maşini, Cluj-Napoca, Editura Dacia, 1988;

Ionescu, M. - Tehnologia cercetării aplicative de produs, Bucureşti, Editura Tehnică, 1981;
Proiectarea în plan cu Autocad R14, Roşca A. ş.a., Editura CERTI 1995.

Subject of study: Finance and Credit (Code D22IEML550)

NUMBER OF CREDITS: 5
YEAR/SEMESTER: 3rd year/1st semester
TYPE OF COURSE: Mandatory
TEACHING LANGUAGE: Romanian
EVALUATION: Written/oral examination

Subject of study: Management of Human resources (Code D22IEML551)

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

Subject of study: Accounting, price and cost calculation (Code D22IEML552)

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

Subject of study: Stock exchanges and values (Code D22IEML553)

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

Subject of study: International economic relations (Code D22IEML554)

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

Subject of study: Thermodynamics, Code: D22IEML656

NUMBER OF CREDITS: 4
YEAR/SEMESTER: 3rd year/2ndsemester
TYPE OF COURSE:Mandatory
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):
Bică, M.,Călbureanu M., Termotehnică şi maşini termice, Editura ICMET , Craiova 2002
Dănescu, Al., ş.a., Termotehnică şi maşini termice, EDP Bucureşti 1985
Călbureanu, M., Cernăianu, C., - Îndrumar de laborator de termotehnică, maşini termice şi transfer de căldură - Îndrumar de laborator, Ed. Universitaria, 2008
Ştefănescu,D., ş.a., Termogazodinamică tehnică, ET, Bucureşti 1986
Nagi, M., ş.a., Gazodinamică, echipamente termice, Timişoara, 1999

Subject of study: Mechanical Systems Modelling Basics, Code: D22IEML657

NUMBER OF CREDITS: 3
YEAR/SEMESTER: 3th year/2nd semester
TYPE OF COURSE: Mandatory
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.
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
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Subject of study: Cutting tools, Code: D22IEML658

NUMBER OF CREDITS: 4
YEAR/SEMESTER: 3rd year/2nd semester
TYPE OF COURSE: Mandatory
OBJECTIVES: The course offers the students theoretical and practical basis regarding the cutting tools design, and in the same time, both the knowledge of the dimensional and geometrical elements of the cutting tools. The course presentation is graduated, starting from the single point tool geometry and finishing with the very complex tools from point of view of geometry and dimensional elements.
CONTENT: Tools classiffication. Tool-in-hand system. Position system. Kinematic system. Tool geometry in tool-in-hand system (shape of tool faces, rake angle, relief angle, the wedge angle, tool cutting edge angle, the cutting edge inclination angle). Optimum values of geometric elements of tools. Tool materials. Fixing devices for tools. Tool strenght and rigidity calculations
TEACHING LANGUAGE: Romanian
EVALUATION: Written examination
BIBLIOGRAPHY (selective):

Stoian, A. Proiectarea sculelor aşchietoare, Reprografia Universitatii din craiova, 1994.
Stoian, A., Proiectarea broşelor, Editura Universitaria, Craiova, 2001
Secara, Gh. Proiectarea sculelor aşchietoare, Editura Didactică si Pedagogica, Bucuresti, 1974.
Cozmincă, M.,Panait, S., Constantinescu, S., Bazele aşchierii, Editura Instit. Politehnic, Gh. Asachi, Iaşi, 1995
Oprean, A., ş.a., Bazele aşchierii şi generării suprafeţelor, Editura Didactică şi Pedagogică, Bucureşti, 1981;
Popescu I., Teoria aşchierii, Universitatea din Craiova, Facultatea de Mecanică, 1994

Subject of study: Machinery and manufacturing equipments, Code: D22IEML655

NUMBER OF CREDITS: 4
YEAR/SEMESTER: 3nd year/2nd semester
TYPE OF COURSE: Mandatory
OBJECTIVES: The lesson aims is to familiarize students with the components of kinematic chains, control systems, kinematics, operation and regulation equipment and machining equipments.
CONTENT: General Introduction. Getting concerning processes generating parts. Cutting metals. Elements of the theory of surface generation in advanced manufacturing systems. Elements of the theory of kinematic chains advanced production systems. Features and kinematic analysis of mechanisms of kinematic chains. Characteristic of advanced production devices. Theory of mechanisms of control and drive systems of advanced manufacturing systems. Advanced manufacturing circular and flat surfaces. Production systems by turning, milling, drilling, planing, shaping, grinding, broaching. Advanced production systems toothed surfaces. Advanced production thread. Advanced manufacturing systems to complex surfaces. Production systems by copying and after the program. Kinematics of advanced manufacturing systems.
Advanced production unit. Advanced flexible production systems.
TEACHING LANGUAGE: Romanian
EVALUATION: Written examination
BIBLIOGRAPHY (selective):

Botez, E., Maşini-Unelte. Bazele teoretice ale proiectării. Teoria I, Editura tehnică, Bucureşti, 1977.
Gheghea, I., Plahteanu, B., Mitoşeriu, C., Ghionea, A., Maşini-unelte şi agregate, Editura Didactică şi Pedagogică, Bucureşti, 1983.
Tauru, Gh., **Cernăianu, A**., ş.a., Maşini-unelte. Cinematica, reglarea şi funcţionarea maşinilor-unelte, Reprografia Universităţii "Constantin Brîncuşi" Tîrgu- Jiu, 1998.
Tauru, Gh., **Cernăianu, A.**, ş.a., Maşini-unelte. Îndrumător de laborator pentru uzul studenţilor, Reprografia Universităţii din Craiova, 1996.
Tauru, Gh., **Cernăianu, A.,** Popescu, D., Cernăianu, C., Maşini-Unelte. Îndrumar de Laborator, 342 pag., Editura Universitaria, Craiova, 2002.
Rece, L., Soare, G. Maşini-unelte şi prelucrări mecanice - ghid tehnologic şi îndrumar de laborator - CD, Editura Matrixrom Bucureşti, 2003.
Cernăianu, A., Metode de cercetare a maşinilor-unelte, Curs, Reprografia Universităţii din Craiova, 258 pag., 1998.
Cernăianu, A., Utilaje şi Echipamente de Fabricaţie, Editura Universitaria, ISBN 973-8043-318-7, Craiova, 400 pag., 2004 .
Cernăianu, A., Maşini-Unelte. Elemente de proiectare. Organologie şi cinematică, Editura Universitaria, ISBN 973-742-024-1, Craiova, 540 pag., 2005.
Ghionea, A., Predincea, N., ş.a., Maşini-Unelte. Lucrări practice, Editura AGIR Bucureşti, 2007.
*** note de curs, Anul academic 2012 / 2013.

Subject of study: Tolerance and dimensional control, Code: D22IEML660

NUMBER OF CREDITS: 3
YEAR/SEMESTER: 3nd year/2nd semester
TYPE OF COURSE:Mandatory
OBJECTIVES: The course offers the students theoretical and practical concepts to establish reasonable tolerances in the industry and to engage in performing technical quality control in the manufacture of parts.
CONTENT: General concepts about precision, Tolerances of cylindrical fits, ISO Tolerances and

fits, Accuracy of geometric shape, Surface position precision, Surface roughness, Dimensional chains, Mount Tolerances and fits on the mounting of bearings in shaft and casing, Tolerances and fits of conical parts and assemblies, Tolerances and fits of threads parts and assemblies, Tolerances and fits of cylindrical wheels.
TEACHING LANGUAGE: Romanian
EVALUATION: Written/oral examination
BIBLIOGRAPHY (selective):
David, I., Precizia de fabricaţie şi montaj în construcţia de maşini, Ed.Politehnica Timişoara, 2008.
David, I., Bagiu, L., Toleranţe şi ajustaje, Ed. Printech, Bucureşti, 2000.
David, I., Gubencu, D., Mălaimare, G., Toleranţe şi ajustaje, Ed. Politehnica, Timişoara, 2005.
Chase C., Kenneth, W., Dimensioning and Tolerances Handbook, McGraw Hill Reyorsen Publishing House, New York, USA, 1999.
Dumitraş C., Popescu, I., Bendic, V., Ingineria controlului dimensional si geometric la fabricarea masinilor, Ed. Tehnică, Bucureşti, 1998.
Henzold, G., Geometrical Dimensioning and Tolerancing for Design, Manufacturing and Inspection, Second Edition: A Handbook for Geometrical Product Specification using ISO and ASME standards, Kindle Edition, 2006.
Pascu, I., Stanimir Al., Toleranţe dimensionale şi geometrice, Ed. Universitaria, Craiova, 2009.
Pascu, I., Toleranţe şi ajustaje, Ed. Universitaria, 2007.
Pascu, I., Stanimir Al., Toleranţe şi control dimensional. Îndrumar de laborator, Ed. Universitaria, Craiova, 2012.
Pascu, I., Vătafu, M. - Toleranţe şi control dimensional. Îndrumar de laborator, Ed. Universitaria, Craiova, 2007.

Subject of study: Value and quality management (Code D22IEML661)

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

Subject of study: Practice (Code D22IEML662)

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

Subject of study: Small and medium businesses, Code: D22IEML663

NUMBER OF CREDITS: 3
YEAR/SEMESTER: 3rd year / 2nd semester
TYPE OF COURSE: Mandatory
OBJECTIVES: The course gives students the skills necessary information on starting a business.
CONTENT: Classification of small and medium businesses worldwide; Starting a business from scratch; Business start by buying one already existing; Business start by buying a franchise; ethics and etiquette in business; business plan.
TEACHING LANGUAGE: Romanian
EVALUATION: Written examination
BIBLIOGRAPHY (selective):
Benjamin Graham, Investitorul inteligent, Editura CH Beck, 2010.
Mary Mitchell, Ghidul manierelor elegante in afaceri, Editura Paralela 45, 2009.
Kevin Hogan, Limbajul secret de business, Editura Meteor Press, 2010.
Gheorghe, St., Afaceri mici si mijlocii, note de curs.

Subject of study: Electrotechnics and electrical machinery (Code D22IEML565)

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

Fourth year of study:

Subject of study: Engineering and Production Management I (Code D22IEML771) + Engineering and Production Management II (D22IEML 880)

NUMBER OF CREDITS: 4-1st sem.; 4 – 2nd sem.
YEAR/SEMESTER: 4th year/1st & 2nd semesters
TYPE OF COURSE: Mandatory
OBJECTIVES: The course offers the students knowledge about production processes and systems. They will study the main techniques and methods for production programming. They will develop skills needed to analyse and optimise production processes.
CONTENT: Introducing the concepts of engineering, production and managment. Technological potential of production systems. Introduction to production programming. Production programming for prototypes, series and mass production. Production capacity. Stock control. Methods of production engineering. Management tools used in production processes. Ergonomy in production systems. Design, assembly and usage of production systems. Inovating production processes.
TEACHING LANGUAGE: Romanian
EVALUATION: Written test.
BIBLIOGRAPHY (selective):

Abrudan, I., Candea, D. s.a. „Manual de inginerie economica - Ingineria si managementul sistemelor de productie" („Manual of economic engineering. Production systems engineering and managment"). Editura Dacia, Cluj Napoca, 2002.
Armeanu, A., Nitu, E.L., „Bazele ingineriei si managementului sistemelor de productie" („Introduction to engineering and production system management"). Editura Universitatii din Pitesti, 2003.
Dima, I.C., Man, M. „Managementul activitatii industriale" („Managment of industrial activity"). Editura Academiei Romane, Bucuresti, 1999.
Maynard, H.B., „Manualul inginerului industrial" („Manual of industrial engineering"), vol. 1-4. Bucuresti, 1971.
Moldoveanu, G. „Managementul operational al productiei" („Operational management of production"). Editura Economica, Bucuresti,1996.
Neagu, C., „Modele de programare si conducere a proceselor economice" („Methods of programming and conducting economic processes"), Editura Didactica si Pedagogica R.A., Bucuresti,1995.

Subject of study: Management information systems, Code:D22IEML772

NUMBER OF CREDITS: 3
YEAR/SEMESTER: 4th year / 1st semester
TYPE OF COURSE: Mandatory
OBJECTIVES: Learn the students the structure of databases managed by MS Access, use of relational diagrams. Filter a database with query object, integrate form objects and get reports. Presenting the database structure for the most important systems of a company based on a case study from a producer of automotive transmissions. Attaching coding sequences on events related to the objects of the database interface.
CONTENT: Relational databases, types of relationships, normalization, MS Access 2007 system tables, properties; Different type of queries: select, append, delete, update, tables creation, cross consultation; Forms objects, reports, objects; Decision support for information system at a company which produces mechanical transmissions: system for human resources management; system for product development; system for tools and fixtures management, system for planning and monitoring production; system r payroll information; system for inventory management; events programming, objects hierarchies.
TEACHING LANGUAGE: Romanian
EVALUATION: Written examination, practical test
BIBLIOGRAPHY (selective):

Băduţ M., – Informatics in Management, Ed. Albastră, Cluja Napoca, 2003
Radu, I., ş.a., – Information Management Company Ed. Tribuna Economică, Bucureşti 2001
Radu, I., ş.a., - Informatics and Management , Ed. Universitară Bucureşti, 2005
Johnson, S., - Microsoft Office Access 2007, Teora, Bucuresti 2008
Hoffer, J.,- Modern System Analysis and Design, Prentice Hall, New Jersey 2008
Hernandez, M - Data Base Design , Teora, Bucureşti, 2003
Militaru Gh - Informatic Systems for management, Ed. All, Bucureşti 2004

SUBJECT OF STUDY : Plastic Deformation Technologies, Code:D22IEML773

NIMBER OF CREDITS: 4
YEAR/SEMESTER: 4th year/ 1st semester
TYPE OF COURSE: Mandatory
OBJECTIVES: The main objective of this course is familiarizing the students with the main operations of cold plastic deformation, the analysis of forces, mechanical work, consumed power, organological analysis and kinematics of plastic deformation equipments.
CONTENT: Generalities. Classification of operation for plastic deformation. Used materials. The cutting of materials. Forces. Mechanical work. Power. Analysis of cutting machines. Embossing operations. Tailoring blanks. Types of embossing. Mechanical presses with simple action. Precision embossing. Cropping and perforation of rubber. Cropping with plastic material. P.M. with double action. Materials folding. Elastic recovery from folding. Hydraulic presses. Shaping. Forces. Mechanical work. Power. Stencils. Special shaping. Examples.

Molding processes. Bottlenecking. Expansion. Embossing. Leveling. Volumetric compression processes. Extrusion. Discharging. Mold pressing. Specific cold pressing processes. Assembling by cold pressing. Straightening machines. Mechanization and automation of TTA operations in

operations of plastic deformation. Economical efficiency of processing operations with plastic deformation. Allowed reconfigurability of sustainable development in plastic deformation technologies
LANGUAGE: Romanian
EVALUATION: written examination
BIBLIOGRAPHY (selective):
Popescu, D. , – Maşini pentru prelucrări prin deformare, Ed. SPICON, 1995
Popescu, D. , – Mecanizarea şi automatizrea operaţiilor de transport, transfer şi alimentare în sistemele de producţie, Ed. BREN, 2003
Popescu, D. ,- Tehnologii şi Echipamente de Deformare Plastică, Editura SITECH, Craiova, ISBN 978- 606 -11- 2209-7, 2012

Subject of study: Financial and economic analysis: Code D22IEML774)

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

Subject of study: Products Manufacturing Technology, Code: D22IEML 775

NUMBER OF CREDITS: 5
YEAR/SEMESTER: 4thyear/1st semesters
TYPE OF COURSE: Mandatory
OBJECTIVES: The students assimilation of: the concepts specific to products fabrication technology, the design methodology of tehnological fabrication processes in classical systems production and with CNC and the typical technology for different groups of products. The forming of necessary aptitudes to determine the influence of different factors on the manufacturing precision and the surfaces quality mande in the technological systems, but also their programming and setting.
CONTENT: The manufacturing precision. The basis of technological processes design for metal cutting. The technology for different types of surfaces machining. The fabrication technology of main products groups. General problems concerning the technologies development for manufacturing on semi-automatic and automatic machine. The basis of CNC products systems programming. Elements of the assembly technology.
TEACHING LANGUAGE: Romanian
EVALUATION: Written/oral examination
BIBLIOGRAPHY (selective):
Albu. A., ş.a. - Programarea asistată de calculator a maşinilor-unelte - Editura Tehnică, Bucureşti,1980;
Ciocârdia. C., ş.a. - Bazele elaborării proceselor tehnologice în construcţia de maşini, E.D.P., Bucureşti, 1983;
Drăghici. G., - Conceptia proceselor de prelucrare mecanica, Editura Politehnica, Timisoara, 2005;
Picoş. C., ş.a. - Proiectarea tehnologiilor de prelucrare mecanică prin aşchiere - Editura Universitas, Chişinău, 1992 ;
Popescu. I., ş.a., - Tehnologia fabricării produselor mecanice Vol. 1, 2 Editura MATRIXROM, Bucureşti, 2005;
Stanimir. Al., - Tehnologia construcţiilor de maşini - Bazele proiectării proceselor tehnologice de prelucrare mecanică - curs - Reprografia Universităţii din Craiova, 1998;
Stanimir. Al., - Tehnologii de prelucrare pe strunguri cu comandă numerică - Editura Universitaria, Craiova, 2002;
Stanimir. Al., - Precizia de prelucrare si calitatea suprafetelor aschiate - Editura Universitaria, Craiova, 2005;
Zamfirache, M., - Prelucrari mecanice - Editura Universitaria, Craiova, 2002.

Subject of study: Industrial Logistics, Code D22IEML776

NUMBER CREDITS: 3
YEAR/SEMESTER: 4th year/ Ist semester
TYPE OF COURSE: Mandatory
OBJECTIVES: The main objective of this course is making an analysis in a coherent approach of the logistic system of a factory, the material fluxes, the delivery circuits and storage networks, together with the study of network locations.
CONTENT: Logistic system. Activities, structure and functions. Elaborating the manipulation, storage and intern transport technologies. Concepts of designing the disposal of logistic system components. Forming of the packed load units. Design elements. Forming the pallet loadings units, containerized and transcontainerized. Storages, deposit systems and thechnical organisatoric activities. Functions of logistic storage subsistem.

The coordination of logistic storage subsystems with working subsystems. Mechanization, automation and robotisation of internal transport processes. Mechanical and automated conveyor. Special transport equipment. Road transportation systems. Road, railway maritime and fluvial transportation systems. Optimizing transport itineraries. Time of manufacturing cycle. Aspects of synchronising operations. The distribution of material fluxes within the logistic system. Location problem inside the internal logistic system.

LANGUAGE: Romanian
EVALUATION: written examination
SELECTIVE REFERENCES:
Junemann R.-"Materialfluss und Logistik".Springer-Verlag,Berlin-Heidelberg-New York-London-Paris-Tokyo-Hong Kong,1989.
Krampe H.-"Transport Umschlang Lagerung",V E B Fachbucherlag,Leipzig,1990.
Tabacu S. C.-"Perfecţiunea conducerii sistemului unitar de transport pe baza automatizării în vederea satisfacerii necesităţilor economiei şi populaţiei", I N I D Bucuresti 1986.
Popescu D.- Mecanizarea şi automatizarea operaţiilor de transport, transfer, alimentare în

sistemele de producţie, Ed. BREN, Bucureşti, 2003.
Popescu D.- Elemente de Logistică industrială, Editura Universitaria, Craiova 2009, ISBN 978-606-510-618-5

Subject of study: Management of auxiliary activities, Code: D22IEML777

NUMBER OF CREDITS: 3
YEAR/SEMESTER: 4td year/1st semester
TYPE OF COURSE: specialty, domain
OBJECTIVES: Course objectives are to create a knowledge base about "auxiliary activities", improperly called „auxiliary" since at present have become very important in the operation and functioning of the production. Their complexity complex and total automation, requires detailed knowledge for operation, maintenance and repair properly. For romanian economy is necessary that the maintenance and repair of machineryand equipments, and other activities that make the basic productive activities to be addressed in a new system design that students need to know and master the knowledge offered by this course.
CONTENT: General concepts about auxiliary activities, Application of operational research in the field of maintenance and repair equipment, machinery and industrial installations, Wear of equipment, machinery and industrial installations, Repair and reconditioning methods of spare parts, Organization of systems of revisions and repairs, Reliability, maintainability and availability of equipment, machinery and industrial installations, Supply Management of Provisioning, Storage Management of Storage, Managemet of Transports, Building Maintenance Management, Environmental Management.
TEACHING LANGUAGE: Romanian
EVALUATION: Written/oral examination
BIBLIOGRAPHY (selective):

Pascu, I., Managementul activităţilor auxiliare, Ed. Universitaria, Craiova, 2006.
Borza A., Managementul întreţinerii şi reparării utilajelor, Bucureşti, 2002.
G., Pocinog, Organizarea şi conducerea întreprinderilor, Îndrumar de lucrări practice, Timişoara, 1982.
Bărbulescu, C., Ene, C., Săveanu, D., Băcanu, I., Ghinea, E. - Cartea mecanicului-şef din unităţile industriale, Ed. Tehnică, Bucureşti, 1983.
Radu, C., Stanciu, R., Management industrial, Ed. Bren, Bucureşti, 2001.
Şuteu,V., Şuteu, V., Şuteu M., Tehnologia întreţinerii şi reparării maşinilor şi utilajelor, Ed. Dacia, Cluj-Napoca, 1984.
Cruceru, C., Th., Maghiar, A., Lezeu, V., Stănilă, Tehnologia reparării şi întreţinerii utilajelor electromecanice, E.D.P. Bucureşti, 1982.

SUBJECT OF STUDY: Materials recycling, Cod: D22IEML778

NUMBER OF CREDITS: 3
YEAR/SEMESTER: 4th year/1st semester
TYPE OF COURSE: Optional
OBJECTIVES: The course present to students ways of recovering and recycling of reusable materials with direct implication in technology's design and equipaments for obtaining basic materials, from waste.
CONTENT: Recovering and recycling metallic waste from machine industry. Specific technological process. Recycling of foundry compounds and caste iron and steel waste. Recycling of grinding cattings. Recovering and recycling for textile and glass fibres. Recovering and recycling for waste paper. Recovering and recycling of plastics and polymers from rubber tyre. Recovering and recycling of garbage. Parts' recycling by restoring, disturbance of pieces type : shaft, bushing, gab, gear pinion. Reconditioning of pieces type carcass using HELI-COIL and METALOCK methods.
TEACHING LANGUAGE: Romanian
EVALUATION: Written/oral examination
BIBLIOGRAPHY (selective):

Berinde, V., Recuperarea recondiţionarea si refolosirea pieselor Editura tehnică Bucureşti 1986,
Didu M.,Contributii privind tehnologiile de recuperare a aschiilor de oteluri aliate de la operaţiile de finisare, Teza de doctorat, Craiova, 1995;
Şontea, S.,Mangra, M.,Didu, M.,Văduvoiu, Gh.,s.a. Procesarea materialelor refolosibilie pentru obţinerea unor materii prime Editura UNIVERSITARIA Craiova 1998;
Tică Bebe, Tehnologia reparatiilor si a reconditionărilor, Reprografia Universităţii din Craiova, 1997;
*** Articole din reviste care se refera la reciclarea unor materiale si produse scoase din uz.

Subject of study: Strategic management: Code D22IEML881)

NUMBER OF CREDITS: 4
YEAR/SEMESTER: 4th year/2nd semester
TYPE OF COURSE: Mandatory
TEACHING LANGUAGE: Romanian
EVALUATION: Written/oral examination

Subject of study: Marketing: Code D22IEML882)

NUMBER OF CREDITS: 3
YEAR/SEMESTER: 4th year/2nd semester
TYPE OF COURSE: Mandatory
TEACHING LANGUAGE: Romanian
EVALUATION: Written/oral examination

Subject of study: Maintenance Management, Code: D22IEML883

NUMBER OF CREDITS: 4
YEAR/SEMESTER: 4thYear /2nd semesters
TYPE OF COURSE: Mandatory
OBJECTIVES: Course objectives are to create the basis knowledge about the maintenance and reliability of the technical systems. Also, knowledge about the management techniques of the maintenance activity are presented.
CONTENT: Maintenance. Definition. Classification. Reliability systems. Mathematical approach of reliability. Failure of the technical systems. Total Productive Maintenance. Management methods of the maintenance activity.
EVALUATION: Written examination
BIBLIOGRAPHY (selective):

Teodorescu N., Mentenanţă generală în domeniul ingineriei mecanice, Ed. AGIR, Bucureşti, 2008
Burlacu, G., ş.a, Fiabilitatea, mentenabilitatea şi disponibilitatea sistemelor tehnice, Ed. Matrix Rom, Bucureşti, 2005
Deac Vasile, Managementul mentenanţei industriale, Ed. Eficient, Bucureşti, 2000
Verzea Ion; Gabriel Marc; Richet Daniel, Managementul activitatii de mentenanta, Ed. Polirom, Bucureşti, 1999
Militaru Ctin, Fiabilitatea şi precizia în tehnologia construcţiilor de maşini, Ed. Tehnică, Bucureşti, 1987
Ceauşu Iulian, Memorator mecano-energetic, Tehnic, Economic de organizare, ,Ed. Tehnică, Bucureşti, 1985.

Subject of study: Managerial communication: Code D22IEML884)

NUMBER OF CREDITS: 3
YEAR/SEMESTER: 4th year/2nd semester
TYPE OF COURSE: Mandatory
TEACHING LANGUAGE: Romanian
EVALUATION: Written/oral examination

Subject of study: Technologies and Control equipmets (Code: D22IEMLL886)

NUMBER OF CREDITS: 2
YEAR/SEMESTER: 4th year/2nd semester
TYPE OF Project: Mandatory
TEACHING LANGUAGE: Romanian
EVALUATION: Written/oral examination