

UNIVERSITY OF CRAIOVA
DEPARTMENT AUTOMATION, ELECTRONICS AND
MECHATRONICS
SPECIALIZATION: MULTIMEDIA SYSTEMS
ENGINEERING

1-ST YEAR

1. Mathematical analysis D281SML101
2. Linear algebra, analytic and differential geometry D281SML102
3. Physics D281SML103
4. Materials chemistry D281SML104
5. Computer programming and programming languages D281SML105
6. Documents processing D281SML106
7. English 1 D281SML107
8. Numerical calculus and mathematical statistics D281SML201
9. Special mathematics D281SML202
10. Bases of electrotechnics D281SML203
11. Systems Engineering Programs D281SML204
12. Mechanics D281SML205
13. Computer Aided Graphics D281SML206
14. English 2 D281SML207
15. Physical education 1 D281SML208

2-ND YEAR

1. Linear electronic circuits D281SML301
2. Numeric devices analysis and synthesis D281SML302
3. Systems theory D281SML303
4. Data bases D281SML304
5. Data bases - project D281SML305
6. Object-oriented programming D281SML306
7. Marketing and Management D281SML307
8. English 3 D281SML308
9. 2D graphics D281SML401
10. 2D graphics - project D281SML402
11. Algorithms and data structures D281SML403
12. JAVA applications D281SML404
13. Computer architecture D281SML405
14. Digital electronics D281SML406
15. Cognitive psychology D281SML407
16. English 4 D281SML408
17. Internship D281SML409

3-RD YEAR

1. Real Time Systems D281SML501
2. Audio-video basics D281SML502
3. 3D graphics and animation D281SML503
4. 3D graphics and animation - project D281SML504
5. Radio and TV Journalism D281SML305
6. Measurement systems and instrumentation D281SML506
7. Microcontrollers and Microprocessors D281SML507
8. Microcontrollers and Microprocessors - project D281SML508
9. Automated systems D281SML601
10. Electronic structures for multimedia D281SML602
11. Digital signal processing D281SML603
12. Information Data D281SML604
13. Software for multimedia systems D281SML605
14. Software for multimedia systems - project D281SML606
15. Project management D281SML607
16. Internship D281SML608

4-TH YEAR

1. Multimedia technologies in e-learning D281SML701
 2. Multimedia technologies in e-learning – proiect D281SML702
 3. Internet applications D281SML703
 4. Audio and visual equipment D281SML704
 5. Human-machine interfaces D281SML705
- PACKAGE A**
6. Communication systems D281SML706a
 7. Processing and image recognition D281SML707a
 8. Design, aesthetics and audiovisual semiotics D281SML708a
- PACKAGE B**
6. Parallel processing and distributed multimedia systems p281SML706b
 7. Programmable controllers D281SML707b
 8. Computer aided design of control systems D281SML708b
 9. Computer Networks D281SML801
 10. Drafting of the Bachelor Degree Project D281SML802
- PACKAGE A**
11. Web Technologies D281SML803a
 12. Security and encryption techniques D281SML804a
 13. Information legal protection D281SML805a
 14. TV and multimedia technologies and techniques D281SML806a
 15. Virtual reality D281SML807
- PACKAGE B**
11. Applications of digital signal processing for speech, music and telecommunications D281SML803b
 12. Analyzing and decision techniques D281SML804b
 13. Methods and algorithms for multimedia information encoding D281SML805b
 14. Virtual Instrumentation D281SML806b
 15. Multimedia systems modeling D281SML807b

1-ST YEAR

SUBJECT: MATHEMATICAL ANALYSIS

NUMBER OF CREDIT POINTS: 6

SEMESTER: I

TYPE OF COURSE : core course

COURSE OBJECTIVES: The course aims at introducing the basic notions related to differential and integral calculus. The tutorial classes are designed in order to improve the theoretical knowledge and to develop accounting skills by means of practical applications, exercises and problems.

COURSE CONTENT: Fundamental series, complete metric spaces Contraction principle; Numerical series; Series of powers, developments in series; Limits and continuity for functions with several variables; Partial derivatives and differentiability; Local extremes for functions with several variables; Implicit defined functions; Conditioned extremes). Introduction to integral calculus.

TEACHING LANGUAGE: Romanian

EVALUATION: written examination

BIBLIOGRAPHY:

Predoi, M. , Balan, T. - Mathematical Analysis Vol I. Differential Calculus; Vol II. Integral Calculus

Predoi, M. - Analiza matematica, Ed. Universitaria, Craiova, 1994

Predoi, M. , Racilă, M. , Constantinescu, D. - Teme de calcul diferențial, Ed.Sitech, Craiova, 2003

Predoi, M. , Racilă, M. , Constantinescu, D. - Teme de calcul integral, Ed.Sitech, Craiova, 2003.

SUBJECT: LINEAR ALGEBRA AND ANALYTICAL AND DIFFERENTIAL GEOMETRY

NUMBER OF CREDIT POINTS: 6

SEMESTER: I

TYPE OF COURSE: core course

COURSE OBJECTIVES: The the course aims at introducing the fundamental notions of linear algebra, analytic and differential geometry: vector spaces, linear mappings, quadratic forms, Euclidian spaces, geometric vectors, the straight line, the plane, conics and quadric surfaces, curves and surfaces. Tutorial classes are designed to improve theoretical knowledge and to create calculus control by applications, exercises and problems.

COURSE CONTENT: Vector Spaces; Linear Mappings; Bilinear Forms. Quadratic Forms; Euclidian Spaces; Geometric Vectors; Straight Line and Plane; Conics and Quadric Surfaces; Curves in Plane and in Space; Surfaces

TEACHING LANGUAGE: Romanian

EVALUATION: written examination

BIBLIOGRAPHY:

Vladimirescu, I., Munteanu, F., Algebră liniară, geometrie analitică și geometrie diferențială, Ed. Universitaria, Craiova, 2007

Vladimirescu, I., Matematici aplicate, Repr. Univ. Craiova, 1987

Vladimirescu, I., Popescu, M., Algebră liniară și geometrie analitică, Ed. Univ. Craiova 1994

Vladimirescu, I., Popescu, M., Alg. liniară, geom. n-dimensională, Ed. Radical, Craiova 1996

Radu, C., Algebră liniară, geometrie analitică și diferențială, Ed. ALL, București, 1998.

SUBJECT: PHYSICS

NUMBER OF CREDIT POINTS: 3

SEMESTER: I

TYPE OF COURSE: core course

COURSE OBJECTIVES: The course focuses on the review of fundamental knowledge in physics: Elements about Analytical Mechanics, Thermodynamics, Optics and Quantum Physics. The tutorial and the lab classes have the role to help students with their knowledge and to get practical abilities, exercises and problems.

COURSE CONTENT: Elements of Mathematics Physics; Analytical Mechanics; Electrodynamics; Elements of Optics; Elements Of Quantum Physics

TEACHING LANGUAGE: Romanian

EVALUATION: written examination

BIBLIOGRAPHY:

Florea Uliu, Curs de fizica pentru facultatea de electrotehnica, vol.1 si 2, Repr. Univ. Craiova 1982, 1986;

Gh. Ciobanu, O. Gherman, L. Saliu, Fizica moleculara, termodinamica si statistica, Ed. Did. si Pedagogica, Bucuresti, 1983;

Culegere de probleme pentru Facultatea de electrotehnica, Repr. Univ. Craiova, 1991;

N. Pometescu, Fizica, Ed. Sitech, 2000;

Lucrari practice de fizica, Reprografia Universitatii din Craiova, 1990.

SUBJECT : MATERIALS CHEMISTRY

NUMBER OF CREDIT POINTS: 3

SEMESTER: I

TYPE OF COURSE: CORE COURSE

COURSE OBJECTIVES: The aim of course is introduction in basic notions about atom's structure, chemical connections, substances properties, electrochemistry, materials corrosion, insulating materials.

COURSE CONTENT: Knowledge about atom's structure; Chemical connections; Substances; Chemical equilibrium, Electrochemistry; Metal corrosion and metal and alloys protection against corrosion; Insulation material Chemistry

TEACHING LANGUAGE: Romanian

EVALUATION: written examination

BIBLIOGRAPHY:

Lippard S.J. – Principles of bioinorganic chemistry. Universitz Science Books, 1994;

Atkins P.W., Beran J.A. – General chemistry (2rd edn.), Freeman & Co, New York, 1992;

Marcu Gh. – Chimia compușilor coordinativi, Ed. Academiei Române, București, 1984;

Brezeanu M & colab. – Chimia metalelor, Editura Academiei Române, București, 1990;

Spînu C. – Chimie bioanorganică, Editura Universitaria, Craiova, 2003.

SUBJECT: COMPUTER PROGRAMMING AND PROGRAMMING LANGUAGES

NUMBER OF CREDIT POINTS: 6

SEMESTER: I

TYPE OF COURSE: CORE COURSE

COURSE OBJECTIVES: The course overall objective is to provide the students with the knowledge required and to develop elementary programming skills using computer programming languages C, Matlab, LabView. Basic concepts for procedural languages based on data flows are covered

COURSE CONTENT: Introduction in system architecture; Basic knowledge for programming; Programming languages; Representing data in computers; C language; Instructions; Structured Data Types; Pointers; Functions; Processing; I/O; Advanced Programming; Matlab; LabView.

TEACHING LANGUAGE: Romanian

EVALUATION: written examination

BIBLIOGRAPHY:

Plum T., Learning to program in C, Prentice Hall, 1983;
Auslander D.,Tham C., Real-time software for control: program examinationples in C, Prentice Hall, 1990;
Schild H., Using Turbo C, Borland, Osborne / McGraw Hill, 1988;
Holzner S., Borland C++ Programming, Brady Books, New York, 1992;
Somnea D., Turturea D., Introducere în C++, Programarea orientată pe obiecte, Ed. Tehnică, București, 1993.

SUBJECT : DOCUMENT PROCESSING

NUMBER OF CREDIT POINTS : 4

SEMESTER: I

TYPE OF COURSE: complementary

COURSE OBJECTIVES: Basic knowledge regarding document processing

COURSE CONTENT: Using Word; Text/Picture processing; Aligning and formating; Pages formating; Microsoft Draw; Using Excel; Spreadsheet applications; Cell data; Formulas and fuctions;Tabulating functions; Graphics and Diagrams; Creating slides; Updateing already existing content; Drawing, moving, resizing objects; Special effects and graphics added in slides; Coloring facilies; Creating notes for presentations and speeches.

TEACHING LANGUAGE: Romanian

EVALUATION: oral examination

BIBLIOGRAPHY:

Mihaela Georgescu, Gianina Rizescu, Windows, MS Word si MS Excel FARA Probleme, Editura Istru, Galati, 2000;
Peter Norton, Ghid complet pentru Windows98, Editura Teora, Bucuresti, 1999;
Sue Plumley, Windows 95 - nimic mai simplu, Editura Teora, Bucuresti, 1996;
Charlie Russel, Sharon Crawford, Microsoft Windows NT Server 4.0 : ghid de referinta, Editura Teora, Bucuresti, 1998.

SUBJECT : ENGLISH 1

NUMBER OF CREDIT POINTS: 2

SEMESTER: I

TYPE OF COURSE: complementary

COURSE OBJECTIVES: The course focuses on the teaching of fundamental vocabulary and structural paradigms for sciences. Also it tries to get the knowhow for employment documents drafting: application letters, CVs, letters of recommendation or the correct drafting of the application form.

COURSE CONTENT: The Inventor of the Modern Computer; Derivation; Vacuum Tubes; The Noun;Computer Architecture; The Article and Other Determiners;The Invention of the Internet; The Adjective. The Comparison Degree;Internet Connection; The Cardinal and Ordinal Numeral;Floppy; The Pronoun; E-mail; The Adverb. Comparison Degrees;Browsing the Web; The Preposition;Downloading; The Verb. General Notions;Operating Systems; Present Tenses;Internet Ethics; Past Tenses;Robotics; Future Tenses;Robot Tasks; The

Active Voice; The Passive Voice;The History of Robotics; IF Clauses;Domains of Use for Robots; Reported Speech;The Three Laws of Robotics; Word Order;Cybernetics; Artificial Intelligence;Computer Viruses; Letter of Intent;The Symptoms of Internet Addiction;Letter of Application (I);Letter of Application (II); Language register: Formal Style;National Aeronautics and Space Administration; Are You Cut Out To Be An Astronaut?;Man and Machine;A Menace to Humanity.

TEACHING LANGUAGE: Romanian

EVALUATION: oral examination

BIBLIOGRAPHY:

Munteanu, S.C., Read Science! UTPress, Cluj- Napoca, 2004;
Munteanu, S.C., Students' English Grammar, UTPress, Cluj- Napoca, 2001;
Mercea, R., Application File, UTPres, Cluj-Napoca, 2003;
Thomson, A.J. & Martinet, A.V., A Practical English Grammar, Exercises 1&2, OUP, Oxford, 1995;
Vizental, Adriana - Strategies of Teaching and Testing English as a Foreign Language, Editura Polirom, 2008.

SUBJECT : NUMERICAL CALCULUS AND MATHEMATICAL STATISTIC

NUMBER OF CREDIT POINTS: 4

SEMESTER: II

TYPE OF COURSE: core course

COURSE OBJECTIVES: The course aims at introducing the main numerical methods and numerical algorithms for linear and nonlinear Algebra, function approximation, differential and integral calculus, numerical solution of partial differential equations and mathematical and statistical elements.

The purpose of the course is to to develop students' ability to analyze various mathematical models appearing in the research, design, engineering, and using numerical techniques to solve specific problems using programming languages transposition of numerical methods studied.

COURSE CONTENT: Numerical methods in algebra; Approximation of functions; Numerical methods for the evaluation of the integrals; Numerical methods for solving differential equations and partial differential; Elements of probability and mathematical statistics.

TEACHING LANGUAGE: Romanian

EVALUATION: written examination

BIBLIOGRAPHY:

Burden R. L., Faires J. D., Numerical Analysis, Brooks Cole Ed., 2004;
C de Boor, A practical guide to splines, 2nd ed. Springer, NewYork, 2000;
Ciarlet P.G., Introduction à l'Analyse Numérique et l'Optimisation, Ed. Masson, Paris, 1990;
Chatelin F., Spectral approximation of linear operators, Academic Press, New York, 1983;
Demidovici B., Maron I., Éléments de Calcul Numérique, Ed. Mir Moscou, 1973.

SUBJECT : SPECIAL MATHEMATICS

NUMBER OF CREDIT POINTS: 6

SEMESTER: II

TYPE OF COURSE: core course

COURSE OBJECTIVES: The course aims to introduce a minimum package of basic concepts: complex analysis, ordinary differential equations or partial, Fourier analysis, Laplace, Fourier vector fields. The course foccuses on the clear definition of concepts, the introduction of the main results, fundamental applied fields, algorithms solving, connections with other research areas.

COURSE CONTENT: Complex analysis, ordinary differential equations, Fourier analysis - Fourier series, Laplace Transform and Laplace discrete Fourier transform, linear partial differential equations of second order, vector fields, scalar potential, vector potential.

TEACHING LANGUAGE: Romanian

EVALUATION: written examination

BIBLIOGRAPHY:

T. Balan, Matematici Speciale - course, 1998;
C. Niculescu, Matematici Speciale - course, 1988;
B. Crstici, Matematici Speciale - curs, 1981;
George Popescu, Matematici Speciale (electronical course);
Probleme rezolvate, exemple (electronical course).

SUBJECT : BASES OF ELECTROTECHNICS

NUMBER OF CREDIT POINTS: 6

SEMESTER: II

TYPE OF COURSE: field related

COURSE OBJECTIVES: The course aims to introduce the basic concepts for the study of electrical circuits regimes, presenting the main theorems and methods of computation applied in the analysis of linear and nonlinear circuits.

COURSE CONTENT: Electric circuits and circuit elements; linear circuits cc; cc nonlinear circuits; sinusoidal electrical circuits; circuits in sinusoidal phase; three-phase electrical circuits; Cuadripol and electrical filters; periodic non-sinusoidal regime of the circuits; electrical circuits transitional regime, circuits with distributed parameters.

TEACHING LANGUAGE: Romanian

EVALUATION: written examination

BIBLIOGRAPHY:

D. Topan, Circuits electriques, Editura Universitaria, 1996;
D. Topan, L.Mandache, Metode de analiză în circuite electrice complexe, Ed. Universitaria, 2002;
D. Topan, L.Mandache, Chestiuni speciale de analiza circuitelor electrice, Ed. Universitaria, 2007;
M. Iordache, L. Dumitriu, Teoria circuitelor electrice, Ed. Matrix Rom, 2007;
M. Preda, P.Cristea, Bazele electrotehnicii, vol.2, EDP, 1980.

SUBJECT : SYSTEMS ENGINEERING PROGRAM

NUMBER OF CREDIT POINTS: 5

SEMESTER: II

TYPE OF COURSE: field related

COURSE OBJECTIVES: The course aims at introducing the basic concepts of software engineering problems and the features and concepts introduced by C++ in this area. There are presented particular aspects regarding the description and optimization algorithms used in software engineering methods and special algorithms: lists, stacks, queues, trees, sorting algorithms, search and selection, Backtracking search techniques, dynamic programming, etc.

COURSE CONTENT: Techniques using files, organizing complex data structures, algorithms, data sorting algorithms, search and selection; Backtracking search techniques, dynamic programming, Greedy method in optimization algorithms, Generating combinations, arrangements and permutations.

TEACHING LANGUAGE: Romanian

EVALUATION: written examination

BIBLIOGRAPHY:

Buricea Mihail, Gestiunea fişierelor în Turbo Pascal, Reprografia Universitatii din Craiova, 1994;
Buricea Mihail, Programarea în Limbajul C/C++ de la teorie la practica, Editura SITECH, 2003;
Buricea Mihail - Programarea Orientata pe Obiecte în C++, Editura SITECH, 2006;

Burdescu Dan Dumitru - Analiza Complexității Algoritmilor, Editura Albatros, 1998;

Knuth Donald, Arta Programării Calculatoarelor : Algoritmi Fundamentali, Teora, 1999.

SUBJECT : MECHANICS

NUMBER OF CREDIT POINTS: 4

SEMESTER: II

TYPE OF COURSE: field related

COURSE OBJECTIVES: The course aims at introducing the basic concepts regarding the issue of mathematical models building methods of mechanical systems' motion with constant mass and a finite number of freedom degrees. Their analysis is accompanied by examinationples of computing applications that illustrate the methods studied.

COURSE CONTENT: Theory vectors slippery; Mass geometry; Kinematics material point; Kinematics of rigid solid and rigid systems; Dynamics.

TEACHING LANGUAGE: Romanian

EVALUATION: written examination

BIBLIOGRAPHY:

Bagnaru, D., Cataneanu, A., Mecanică-Mecanisme, Editura Sitech, Craiova, 1997;
Buculei, M., Mecanică, vol. I, II, Reprografia Universitatii din Craiova, 1980;
Cătăneanu, A., Mecanică, vol. I,II, Editura Universitaria, Craiova, 2000, 2001;
Cătăneanu, A., Mecanică –Culegere de probleme Ed. Universitaria, Craiova, 2002;
Ceauşu, V, Enescu, N., Ceauşu, F., Culegere de probleme, Mecanică, vol. I. Statică şi cinematică, Ed. Printech, Bucureşti, 1997.

SUBJECT : COMPUTER AIDED GRAPHICS

NUMBER OF CREDIT POINTS: 3

SEMESTER: II

TYPE OF COURSE: core course

COURSE OBJECTIVES: The course goal is to introduce the fundamental concepts of Computer Aided Graphics: theoretical concepts of graphics technology, general aspects of computer graphics, two-dimensional and three-dimensional modeling in AutoCAD.

COURSE CONTENT: General concepts of drawing, General aspects of computer graphics (Computer Graphics), Modeling two-dimensional, three-dimensional modeling.

TEACHING LANGUAGE: Romanian

EVALUATION: oral examination

BIBLIOGRAPHY:

Gherghina, G., Popa D., Calbureanu M., Tudor M., Grafică asistată de calculator, Reprografia Universităţii din Craiova, 1999;
Gherghina, G., Popa, D., Calbureanu, M., Tudor, M., Grafică asistată de calculator. Două modalități de abordare, Reprografia Universităţii din Craiova, 2000.;
Popa, Grafică asistată de calculator, Ed. Sitech, 2003, 154 pag., ISBN 973-657-444-X;
Popa, D., Sass, L., Gherghina, G., Duta, A., Stănescu, G., Grafică asistată de calculator - de la 2D la 3D, 247 pag., Ed. Sitech, 2007;
Sass, L., Desen geometric, 280 pag., Ed. Tehnica-Info, Chişinău, 2002.

SUBJECT : ENGLISH LANGAUGE 2

NUMBER OF CREDIT POINTS: 2

SEMESTER: II

TYPE OF COURSE: complementary

COURSE OBJECTIVES: The seminar scope is to establish fundamental vocabulary and structural paradigms specific conversational sciences. The seminar also aims to develop skills necessary to achieve the necessary documentation for employment: covering letter, CV in English, letters of recommendation or a correctly completed application form.

COURSE CONTENT: The Inventor of the Modern Computer; Derivation; Vacuum Tubes; The Noun; Computer Architecture; The Article and Other determiners; The Invention of the Internet; The adjectives. The Comparison Degree; Internet Connection; The Cardinal and Ordinal numbers; Floppy; The pronoun; E-mail The Adverb. Comparison Degrees; Browsing the Web; The preposition; Downloading; The Verb. General Notions; Operating Systems; Present tenses; Internet Ethics; Past tenses; Robotics; Future tenses; Robot Tasks; The Active Voice; The Passive Voice; The History of Robotics; IF Clauses; Domains of Use for Robots; Reported Speech; The Three Laws of Robotics; Word Order; Cybernetics; Artificial Intelligence; Computer Viruses; Letter of Intent; The Symptoms of Internet Addiction; Letter of Application (I) Letter of Application (II) Register Language: Formal Style; National Aeronautics and Space Administration; Are You Cut Out to Be An Astronaut?; Man and Machine, A Menace to Humanity.

TEACHING LANGUAGE: Romanian

EVALUATION: oral examination

BIBLIOGRAPHY:

Munteanu, S.C., Read Science! UTPress, Cluj- Napoca, 2004;

Munteanu, S.C., Students' English Grammar, UTPress, Cluj- Napoca, 2001;

Mercea, R., Application File, UTPres, Cluj-Napoca, 2003;

Thomson, A.J. & Martinet, A.V., A Practical English Grammar, Exercises 1&2, OUP, Oxford, 1995;

Vizental, Adriana - Strategies of Teaching and Testing English as a Foreign Language, Editura Polirom, 2008.

SUBJECT : PHYSICAL EDUCATION 1

NUMBER OF CREDIT POINTS: 2

SEMESTER: II

TYPE OF COURSE: complementary

TUTORIAL OBJECTIVES: information is missing

COURSE CONTENT: information is missing

TEACHING LANGUAGE: Romanian

EVALUATION: oral examination

BIBLIOGRAPHY:

Information is missing

2-ND YEAR

SUBJECT : LINEAR ELECTRONIC CIRCUITS

NUMBER OF CREDIT POINTS: 6

SEMESTER: I

TYPE OF COURSE: field related

COURSE OBJECTIVES: The course aims to provide theoretical knowledge about the most important electronic devices and circuits linear and introduce the basic concepts of problem analysis and design of analog electronic systems.

COURSE CONTENT: Semiconductor diodes; bipolar transistors; unipolar transistors; amplifiers; active filters; linear voltage regulators; harmonic oscillators.

TEACHING LANGUAGE: Romanian

EVALUATION: written examination

BIBLIOGRAPHY:

Niculescu E., Purcaru D.M., Dispozitive și circuite electronice. Vol. I. Ed. Universitaria, 2002;

Niculescu E., Purcaru D.M., Maria, M., Electronică. Simulări, analize și experimente, Ed. Reprograph, Craiova, 2006;

Spânulescu, I., Dispozitive semiconductoare și circuite integrate analogice, Ed. Victor, București, 1998;

Gray, P.E., Meyer, C.R., Circuite integrate analogice. Analiză și proiectare, Ed. Tehnică, București, 1997;

P. Allen, D. Holberg, CMOS Analog Circuit Design, 2nd Ed., Oxford 2002.

SUBJECT : DIGITAL DEVICES ANALYSIS AND SYNTHESIS

NUMBER OF CREDIT POINTS: 5

SEMESTER: I

TYPE OF COURSE: field related

COURSE OBJECTIVES: The goal of the course is to introduce the basic concepts of: number systems, switching algebra, MSI and LSI integrated circuits, flip-flops, counters and registers, analysis and synthesis of synchronous and asynchronous sequential circuits.

COURSE CONTENT: Number Systems; Binary Arithmetic; Geometric representation of binary numbers; Switching Algebra; Analysis and synthesis of switching functions; special properties of switching functions. Hazard circuielor switching; Families lcs; Integrated Circuits MSI; LSI Integrated circuits; integrated BIST; counters; registers series and parallel; synchronous sequential circuit analysis, synthesis ROMs sequential circuits; synchronous sequential circuits synthesis D and JK flip-flops.

TEACHING LANGUAGE: Romanian

EVALUATION: written examination

BIBLIOGRAPHY:

Blakeslee, Th., Proiectarea cu circuite logice MSI și LSI standard, Ed. Tehnică, București, 1988;

Huțanu, C., Circuite logice și comenzi secvențiale, Ed. Junimea, Iași, 1983;

Maican, S., Sisteme numerice cu circuite integrate, Culegere de probleme, Ed. Tehnică, București 1980.

SUBJECT : SYSTEMS THEORY

NUMBER OF CREDIT POINTS: 5

SEMESTER: I

TYPE OF COURSE: field related

COURSE OBJECTIVES: The course aims to introduce basic systemic concepts (theory input / output and theory based on the notion of state) and their description of the characteristics. The course creates openness to dynamic approach, and the ability of using tools automation and mechatronics working, being a first step towards an interdisciplinary approach to engineering problems.

COURSE CONTENT: Signals and systems with continuous time (analog) Introduction to signals and systems. Examinationples diverse. Periodic signals, non-periodic impulse, linear systems and properties. Transfer function. Responding to signals (free and forced). Systems of order 1 and 2, internal stability and output input linear systems, stability characteristics frecvență.Criterii frecvențial; connection with feedback. Stability and the Nyquist criterion; Connections elementary systems, series and parallel connections, properties and stability, quality of response systems, for systems of order 1 and 2, signals and discrete-time systems, structural properties, equation of state of continuous time systems (analog).

TEACHING LANGUAGE: Romanian

EVALUATION: written examination

BIBLIOGRAPHY:

- V. Ionescu, Conducerea structurală a sistemelor liniare (Cap.1,2), Editura Tehnică, București, 1987;
- VI. Răsvan, Teoria stabilității (Cap. 2), Editura științifică și enciclopedică, București, 1987;
- M. Voicu, Introducere în automatizată, Editura Polirom, Iași, 2002;
- J.R. Leigh, Applied control theory, Peter Peregrinus IEE, London, 1987;
- J.L. Shearer, B.T.Kulakowski, J.F. Gardner, Dynamic modeling and control of engineering systems, Prentice Hall, 1997.

- Ipate, F.E. s. a., "Dezvoltarea aplicatiilor de BD in Oracle si Forms", Editura ALL, Bucuresti, 2000;
- Hernandez, M.J., "Database Design: a Hands-on Guide to Relational Database Design", 402 pag., Pearson Education, Inc. Publishing Adisson Wesley Professional, 0201752840, New York, USA, 2003;
- Lowers, T., Atwood, T., Gennick, J., "PL/SQL", 715 pp., Pearson Education, Inc. – Sams Publishing, New York, USA, 2001;
- Welling, L., "Thomson, L., PHP and MYSQL web Development", 813 pp., Pearson Education, Inc. – Sams Publishing, 067232525X, New York, USA, 2004.

SUBJECT : DATABASES**NUMBER OF CREDIT POINTS: 3****SEMESTER: I****TYPE OF COURSE:** field related**COURSE OBJECTIVES:** The course aims at introducing the basic concepts related to the methodology of database design and acquisition of knowledge on the use of a database management system (DBMS).**COURSE CONTENT:** Introduction to databases, relational model, relational database design (analysis of requirements specifications, design methods, normalization and denormalising database), SQL, Systems Management, RDBMS Relational Databases. Management elements of BD (types of users, create a database, court administration, storage structures and database schema objects, memory management and database resources, presenting concepts Backup Database Recovery Manager, etc..) Database Security and users' concurrent data access and preservation of their consistency, distributed databases.**TEACHING LANGUAGE:** Romanian**EVALUATION:** written examination**BIBLIOGRAPHY:**

- Connolly, T., Begg, C., Strachan, A., "Database Systems – A Practical Approach to Design, Implementation and Management", 1041 pp., Addison Wesley Longman Limited, London, UK, 2003;
- Ipate, F.E. s. a., "Dezvoltarea aplicatiilor de BD in Oracle si Forms", Editura ALL, Bucuresti, 2000;
- Hernandez, M.J., "Database Design: a Hands-on Guide to Relational Database Design", 402 pag., Pearson Education, Inc. Publishing Adisson Wesley Professional, 0201752840, New York, USA, 2003;
- Lowers, T., Atwood, T., Gennick, J., "PL/SQL", 715 pp., Pearson Education, Inc. – Sams Publishing, New York, USA, 2001;
- Welling, L., "Thomson, L., PHP and MYSQL web Development", 813 pp., Pearson Education, Inc. – Sams Publishing, 067232525X, New York, USA, 2004.

SUBJECT : DATABASES - PROJECT**NUMBER OF CREDIT POINTS: 1****SEMESTER: I****TYPE OF COURSE:** field related**COURSE OBJECTIVES:** if requited.**COURSE CONTENT:** if requited**TEACHING LANGUAGE:** Romanian**EVALUATION:** project**BIBLIOGRAPHY:**

- Connolly, T., Begg, C., Strachan, A., "Database Systems – A Practical Approach to Design, Implementation and Management", 1041 pp., Addison Wesley Longman Limited, London, UK, 2003;

SUBJECT : OBJECT ORIENTED PROGRAMMING**NUMBER OF CREDIT POINTS: 6****SEMESTER: I****TYPE OF COURSE:** core course**COURSE OBJECTIVES:** The course purpose is to introduce the basic concepts of object-oriented programming problems, and language features and concepts introduced by C + +. Are then presented syntactic details of C + +.**COURSE CONTENT:** Programming paradigms and methods of program design, C++ and object-oriented programming, defining and using classes in C++, use pointers and references. Preliminary Elements Function, type constructor and destructor functions, composition of objects, inheritance mechanism. Constructing class hierarchies, functions and friend classes. Nested classes, operator overloading, virtual functions, The "stream" I/E in C + +.**TEACHING LANGUAGE:** Romanian**EVALUATION:** written examination**BIBLIOGRAPHY:**

- Holzner, S., Borland C++ Programming, Brady Books, New York, 1992;
- Ionita, A. D., Modelarea UML in ingineria sistemelor de programe, Ed. ALL, 2002;
- Ionita, A. D., Saru.D., Sisteme de programe orientate pe obiecte, 328 pag. Ed. ALL, 2000;
- Jamsa, K., Klander, L., Totul despre C si C++, Ed. Teora, 2000;
- Oprea, M., Programare orientata pe obiecte. Exemple in limbajul C++, Ed. Matrixrom, 2004.

SUBJECT : MARKETING ȘI MANAGEMENT**NUMBER OF CREDIT POINTS: 2****SEMESTER: I****TYPE OF COURSE:** complementary**COURSE OBJECTIVES:** The course objective is to introduce the basic concepts on the issue of the marketing process so that, following training activities, students to acquire useful knowledge about market developments, product policies, promotional activities, pricing and distribution (focusing on the IT).**COURSE CONTENT:** Getting Started on the issues of marketing; organization and its external environment; market research and market strategy; product policy; promotional policies; promotion and advertising; Pricing; Distribution policy.**TEACHING LANGUAGE:** Romanian**EVALUATION:** oral examination**BIBLIOGRAPHY:**

- Belch, G.E., Belch, M.A., "Introduction to Advertising & Promotion: An Integrated Marketing Communications Perspective", Richard Irwin, 1993;

Berkowitz, E., Kerin R., Rudelius W., "Marketing", 2nd Edition, Homewood, Illinois: Richard D. Irwin, 1989;
 Berndt, R., Hermanns, A., "Handbuch Marketing-Kommunikation", Wiesbaden, 1993;
 Kotler, P., Armstrong, G., "Principles of marketing", 650 pp., Pearson Education, Inc., Upper Saddle River, New Jersey, Prentice Hall, ISBN: 0-13-041814-5, 2004;
 Kotler, P., Armstrong, G., Saunders, J., Wong, V., "Principiile marketingului" – ediție europeană, 1136 pag., Editura Teora, București, ISBN: 973-601-399-5, 1999.

SUBJECT : ENGLISH 3

NUMBER OF CREDIT POINTS: 2

SEMESTER: I

TYPE OF COURSE: complementary

TUTORIAL OBJECTIVES: The seminar scope is to establish fundamental vocabulary and structural paradigms specific conversational sciences. The seminar also aims to develop skills necessary to achieve the necessary documentation for employment: covering letter, CV in English, letters of recommendation or a correctly completed application form

COURSE CONTENT: The Inventor of the Modern Computer; Derivation; Vacuum Tubes; The Noun; Computer Architecture; The Article and Other Determiners; The Invention of the Internet; The Adjective. The Comparison Degree; Internet Connection; The Cardinal and Ordinal Numeral; Floppy; The Pronoun; E-mail; The Adverb. Comparison Degrees; Browsing the Web; The Preposition; Downloading; The Verb. General Notions; Operating Systems; Present Tenses; Internet Ethics; Past Tenses; Robotics; Future Tenses; Robot Tasks; The Active Voice; The Passive Voice; The History of Robotics; IF Clauses; Domains of Use for Robots; Reported Speech; The Three Laws of Robotics; Word Order; Cybernetics; Artificial Intelligence; Computer Viruses; Letter of Intent; The Symptoms of Internet Addiction; Letter of Application (I); Letter of Application (II); Language register: Formal Style; National Aeronautics and Space Administration; Are You Cut Out To Be An Astronaut?; Man and Machine; A Menace to Humanity.

TEACHING LANGUAGE: Romanian

EVALUATION: oral examination

BIBLIOGRAPHY:

Munteanu, S.C., Read Science! UTPress, Cluj- Napoca, 2004;
 Munteanu, S.C., Students' English Grammar, UTPress, Cluj- Napoca, 2001;
 Mercea, R., Application File, UTPres, Cluj-Napoca, 2003;
 Thomson, A.J. & Martinet, A.V., A Practical English Grammar, Exercises 1&2, OUP, Oxford, 1995;
 Vizental, Adriana - Strategies of Teaching and Testing English as a Foreign Language, Editura Polirom, 2008.

SUBJECT : GRAPHICS I (2D)

NUMBER OF CREDIT POINTS: 4

SEMESTER: II

TYPE OF COURSE: specialty

COURSE OBJECTIVES: The course aims to introduce basic concepts of computer graphics, fundamental changes and a graphics engine structure and operations that take place within it.

COURSE CONTENT: Mathematical foundations for computer graphics; Geometric patterns; Geometric transformations; The processing chain modeling / simulation; Visualization processing chain.

TEACHING LANGUAGE: Romanian

EVALUATION: written examination

BIBLIOGRAPHY:

Dorian Dogaru – Grafica pe calculator. Elemente de geometrie computațională – vol.1., Editura didactică și pedagogică, București, 1995
 James Foley, Andries van Dam, Steven Feiner, John Hughes – Computer Graphics: Principles and Practice – Addison Wesley, 1993;
 Alan Watt – 3D Computer Graphics - Addison Wesley, 2000;
 James Foley, Andries van Dam, Steven Feiner, John Hughes, Richard Philips – Introduction to Computer Graphics – Addison Wesley, 1993.

SUBJECT : GRAPHICS I (2D) - PROJECT

NUMBER OF CREDIT POINTS: 1

SEMESTER: II

TYPE OF COURSE: specialty

COURSE OBJECTIVES: if required

CONTENT: if required

TEACHING LANGUAGE: Romanian

EVALUATION: project

BIBLIOGRAPHY:

If required

SUBJECT : ALGORITHMS AND DATA STRUCTURES

NUMBER OF CREDIT POINTS: 4

SEMESTER: II

TYPE OF COURSE: field related

COURSE OBJECTIVES: Course scope is to develop skills related to the design of data structures that allow writing performance programs, training habits representation of static objects and dynamic objects processing and control capacity relative to program performance report memory consumption / speed execution.

COURSE CONTENT: Information trees; ordered trees; optimal search trees, balanced trees, MultiCam trees, Trees B type structures graph.

TEACHING LANGUAGE: Romanian

EVALUATION: written examination

BIBLIOGRAPHY:

Burdescu D.D. - Algoritmi si structuri de date, Ed. Mirton, 1992;
 Burdescu D.D. - Structuri de date arborescente, Ed. Mirton, 1993;
 Burdescu D. D. - Structuri de date arborescente (curs); Reprografia Universitatii din Craiova, 1993;
 Burdescu D.D. ,Brezovan M - Algoritmi si structuri de date in C si Pascal (indrumar de laborator), Reprografia Universitatii din Craiova, 1995.

SUBJECT : JAVA APPLICATION

NUMBER OF CREDIT POINTS: 4

SEMESTER: II

TYPE OF COURSE: core course

COURSE OBJECTIVES: The course aims at introducing the basic concepts of the Java programming language. The laboratory is designed to allow students less complex application development / medium-oriented programming techniques and graphics / graphic interface.

COURSE CONTENT: Introduction to Java. Java and Web; Java Applets; Java applications and kit; Objects, methods, classes; Working with Java Objects; Data Types, modifiers and expressions, classes, interfaces and Java packages; Strings and program control instructions; Working with exceptions, individual executions and execution in parallel Java packages standard 2D graphics and graphics

processing, animation and graphics; User interfaces GUI - concept and design; User interface construction.

TEACHING LANGUAGE: Romanian

EVALUATION: written examination

BIBLIOGRAPHY:

Thinking in Java, ed.3 rev.4 – Bruce Eckel – ISBN 9780131872486, Editura: Prentice Hall PTR;

JAVA : 1001 secrete pentru programatori / Mark C. Chan, Steven W. Griffith, Anthony F., Editura Teora, ISBN 973-20-0169-0;

JAVA, ghid practic pentru programatori avansati - Joshua Bloch, Editura Teora, ISBN: 973-20-0406-1;

Servicii WEB cu Java. XML, SOAP, WSDL si UDDI - Steve Graham, Editura Teora, ISBN 973-20-0470-3;

The JAVATM Tutorial, A Practical Guide for Programmers, www.java.sun.com.

SUBJECT : COMPUTER ARCHITECTURE

NUMBER OF CREDIT POINTS: 4

SEMESTER: II

TYPE OF COURSE: field related

COURSE OBJECTIVES: Understanding the way a computer works as a system, beyond programme operating, peripherics use and the software and hardware technology. Understanding the way data and programmes are encoded and manipulated within a calculus system, and also the main ways of programme execution.

COURSE CONTENT: Data Storage: Storage of bits. Bistable logic gates and circuits, data storage: other storage techniques. Hexadecimal notation, the main memory. Bits. Main memory organization. Byte ordered; Encryption used to store information. Representing symbols. Representation of numerical values. Other forms of data representation, Binary numeral system: Assembly in binary. Representing fractions in the binary system. Storing integers: excess notation; Notation two's complement Add numbers represented in two's complement. Overcoming higher; Storing fractional numbers. Floating point notation. Rounding errors, communication errors: parity bits. Error-correcting codes; Errors in communication: Aspects of practical application, handling data: central processing unit. Register. Interface CPU / Memory. Instructions into machine code; storage programs. Instructions as strings of bits. A typical machine language. Implementation of programs, other architectures. CISC and RISC architectures. Principles of modern computer design, parallel processing: the instruction parallelism, parallel processing: process-level parallelism, arithmetic and logical instructions. Logic operations. Rotation operations and bitwise shift. Arithmetic operations; Communication between computers and peripheral devices. Control. Communication between the central unit and controllers. Serial and parallel communication; Process. CPU organization. Execution of instructions; cache; shift registers. Combiners. Arithmetic logic units; Buses synchronous; Asynchronous Pipelines; Arbitration bus; The bus operations, an examinationple of microarchitecture. Data path. The sequencing of the time path of the data. Memory operations; Microinstruction. Microinstruction control. The sequencer control. Microinstruction address determination to be made; Examinationple ISA: IJVM. Stacks. The IJVM memory; Set IJVM INSTRUCTIONS.

TEACHING LANGUAGE: Romanian

EVALUATION: written examination

BIBLIOGRAPHY:

J. Glen Brookshear - Introducere în informatică, Ed. Teora, 1998;

Andrew S. Tanenbaum - Structured Computer Organization, Prentice Hall, 1999;

Richard Y. Kain - Advanced Computer Architecture, Prentice Hall, 1996;

Sajjan G. Shiva - Computer Design and Architecture, Third Edition, 2000;

William Stallings - Computer Organization and Architecture, Prentice Hall, 2000.

SUBJECT : DIGITAL ELECTRONICS

NUMBER OF CREDIT POINTS: 4

SEMESTER: II

TYPE OF COURSE: field related

COURSE OBJECTIVES: The course aims to present, analyze and use digital integrated circuits. Give a complete and accurate support for the design of a digital system in which concern: the electrical interface, static and transient parameters, using high-speed circuits and electromagnetic compatibility of digital systems.

COURSE CONTENT: Introduction; Families digital integrated circuits made in bipolar technology; Families digital integrated circuits made unipolar technology; Interface circuits; Bistable circuits; Semiconductor memories and programmable logic areas; Electromagnetic compatibility (EC) in digital integrated circuit design; Interconnecting transmission lines and high-speed digital integrated circuits.

TEACHING LANGUAGE: Romanian

EVALUATION: written examination

BIBLIOGRAPHY:

Nicola, S., Circuite Integrate Numerice, partea I , Reprografia Universității din Craiova, 2000;

Nicola, S., Circuite Integrate Numerice. Aplicații în mecatronică, Ed.Universitaria , Craiova, 2005;

Wakerly, J. F., Circuite digitale; Principiile și practicile folosite în proiectare, Editura Teora, 2002;

Rabaey, J.M., Digital Integrated Circuits - A Design Perspective, Prentice Hall, 1996;

Hodges, D., Jackson, H.G., Analysis and Design of Digital Integrated Circuits, McGraw Hill, 2nd ed., 1988.

SUBJECT : COGNITIVE PSYCHOLOGY

NUMBER OF CREDIT POINTS: 2

SEMESTER: II

TYPE OF COURSE: complementary

COURSE OBJECTIVES: Introducing knowledge about cognitive psychology understood as a detailed study of human cognitive system and of its subsystems, of the specific language and methodology, about the cognitive approach of one's personality correlated to one's psychosocial environment. The latter refers to a broader way of rethinking the new concepts and of integrating some already known psychological theories by the students.

COURSE CONTENT: Cognitive sciences and cognitive psychology; human psychic as an informational system; primary and secondary processing of information; attention; learning and memory neurobiology; language mechanisms; categorization as an operation of integrating information conceptually; human cognitive system architecture; personality and its neuro-physiological bases; the operational structure of behaviour

TEACHING LANGUAGE: Romanian

EVALUATION: oral examination

BIBLIOGRAPHY:

Arseni, G., Golu, M., Dănăilă, L., 1983, Psihoneurologie, București, Ed. Academiei;

Anderson, J.R., 1983, The Architecture of Cognition, Cambridge, M.A.;

Botez, M.I., (red). 1986, Neurologie clinică și neurologia comportamentului, București, Editura Medicală;

Delacour, J., 2001, Introducere în neuroștiințele cognitive, Iași, Ed. Polirom;

Gazzaniga, M. S., (ed.), 1995, The cognitive neurosciences, Cambridge, MA: MIT Press.

SUBJECT : ENGLISH 4

NUMBER OF CREDIT POINTS: 2

SEMESTER: II

TYPE OF COURSE: complementary

The course focuses on the teaching of fundamental vocabulary and structural paradigms for sciences. Also it tries to get the knowhow for employment documents drafting: application letters, CVs, letters of recommendation or the correct drafting of the application form.

COURSE CONTENT: The Inventor of the Modern Computer; Derivation; Vacuum Tubes; The Noun; Computer Architecture; The Article and Other determiners; The Invention of the Internet; The adjectives. The Comparison Degree; Internet Connection; The Cardinal and Ordinal numbers; Floppy; The pronoun; E-mail The Adverb. Comparison Degrees; Browsing the Web; The preposition; Downloading; The Verb. General Notions; Operating Systems; Present Tenses; Internet Ethics; Past Tenses; Robotics; Future Tenses; Robot Tasks; The Active Voice; The Passive Voice; The History of Robotics; IF Clauses; Domains of Use for Robots; Reported Speech; The Three Laws of Robotics; Word Order; Cybernetics; Artificial Intelligence; Computer Viruses; Letter of Intent; The Symptoms of Internet Addiction; Letter of Application (I); Letter of Application (II); Language register: Formal Style; National Aeronautics and Space Administration; Are You Cut Out To Be An Astronaut?; Man and Machine; A Menace to Humanity.

TEACHING LANGUAGE: Romanian

EVALUATION: oral examination

BIBLIOGRAPHY:

Munteanu, S.C., Read Science! UTPress, Cluj- Napoca, 2004;

Munteanu, S.C., Students' English Grammar, UTPress, Cluj- Napoca, 2001;

Mercea, R., Application File, UTPres, Cluj-Napoca, 2003;

Thomson, A.J. & Martinet, A.V., A Practical English Grammar, Exercises 1&2, OUP, Oxford, 1995;

Vizental, Adriana - Strategies of Teaching and Testing English as a Foreign Language, Editura Polirom, 2008.

SUBJECT : INTERSHIP 1

NUMBER OF CREDIT POINTS: 5

SEMESTER: II

TYPE OF COURSE: field related

COURSE OBJECTIVES: preparing the future engineers by ensuring their knowledge about programming skills. They deal with basic concepts used in programming. The internship is meant to improve the knowledge and the understanding of the phenomena and to enable practical applications.

COURSE CONTENT: The user interface in MATLAB. Aplicații. Programarea in MATLAB. Applications. MATLAB data types. Aplicații. Matematica in MATLAB. Applications. (Matrices and linear algebra; Polynomials and interpolation; Mathematical Functions, Differential Equations). Graphics in MATLAB. PPLICATIONS. (Two-dimensional graphics, three-dimensional graphics, examinationples of graphs in MATLAB). Defining dynamic systems in MATLAB. Applications. (Definition of linear systems, nonlinear systems

definition, specializing in systems analysis functions). LabVIEW user interface. Applications. (Virtual instrument, front panel window, window diagram). Programming in MATLAB. Applications. (Data flow oriented programming, creating graphical user interface, creating a chart (LabVIEW software). LabVIEW data types. Applications. (Numerical data, logical data, character data / string; structural panels; Clusters.). Mathematics in LabVIEW. applications. (Examinationples of implementation of computer programs). graphics in MATLAB. applications. (two-dimensional graphics: graphs and charts sites).

TEACHING LANGUAGE: Romanian

EVALUATION: oral examination

BIBLIOGRAPHY:

Selișteanu, D., Ionete, C., Petre, E., Popescu, D., Șendrescu, D., Ghid de programare în LabVIEW. Aplicații pentru prelucrarea semnalelor, Tipografia Universității din Craiova, 2003.

Selișteanu, D., Ionete C., Petre E., Popescu D., Șendrescu D., Aplicații LabVIEW pentru achiziția și generarea datelor, Editura SITECH, Craiova, 2004.

*** LabVIEW User Guide, National Instruments, SUA, 1996.

*** MATLAB User Guide.

Cottet, F., Ciobanu, O., Bazele Programării în LabVIEW, MATRIX ROM, București, 1998.

3-RD YEAR

SUBJECT : REAL-TIME SYSTEMS

NUMBER OF CREDIT POINTS: 6

SEMESTER: I

TYPE OF COURSE: field related

COURSE OBJECTIVES: The course aims at introducing the basic concepts of real-time issues management processes in the following areas: programming in assembly language for real-time applications, opportunities for achieving and implementing a real-time executive, organizing applications for driving under an executive order real time.

CONTENT: Microprocessor system architecture for industrial processes; Programming Languages for real-time applications; Real-time operating systems; Interacțiunea tasks competing for an executive leadership organization in real-time industrial processes, organization management applications under the command of a real-time executive.

TEACHING LANGUAGE: Romanian

EVALUATION: written examination

BIBLIOGRAPHY:

Yeung B.C., 8086/8088 Assembly Language Programming, John Wiley & Sons, 1988;

Buhr R.J.A., Baileley D.L., An Introduction to Real-Time Systems, Prentice Hall, 1998;

Musca Gh., Programare in limbaj de asamblare, Ed. Teora, 1998;

Munteanu F., Muscă Gh., Programarea calculatoarelor de proces, Reprografia I.P., Bucuresti, 1989;

Lungu V., Procesoare Intel. Programarea in limbaje de asamblare, Ed. Teora, 2000.

SUBJECT : AUDIO-VIDEO BASICS

NUMBER OF CREDIT POINTS: 4

SEMESTER: I

TYPE OF COURSE: specialty

COURSE OBJECTIVES: The course provides students with the basic terminology, history and principles of multimedia

applications. The audio section describes various audio, digital recording and audio post. The video section describes techniques for video and film subtitling, digital cameras, video installation, AV editing and conversion between different video formats (analog and digital).

COURSE CONTENT: Introduction; Sound in multimedia systems; Multimedia systems image; Interface on the PC - Video Card; Supports multimedia data storage.

TEACHING LANGUAGE: Romanian

EVALUATION: written examination

BIBLIOGRAPHY:

Ilie C.B., „Sisteme de Comunicatii”. Ed ULBS 2002;
L. Festila, E. Simion, C. Miron, Amplificatoare audio si sisteme muzicale. Ed. Dacia , Cluj-Napoca , 1990;
L. Stanciu, Echipamente audio HI-Fi, Editura Matrix Rom, Bucuresti 1998;
M. Basoiu, DCC, Casetofoane digitale, Editura Tehnica, Bucuresti, 1998.

SUBJECT : 3D GRAPHICS AND ANIMATION

NUMBER OF CREDIT POINTS: 4

SEMESTER: I

TYPE OF COURSE: specialty

COURSE OBJECTIVES: The course aims at introducing the concept of graphics processing system. It presents general concepts and examinationples used by the graphics processing bibloiteci - OpenGL and DirectX.

COURSE CONTENT: Direct3D rendering chain; Drawing in Direct3D; Colors; Lights; Textures; Combination (blending); Tables (Meshes).

TEACHING LANGUAGE: Romanian

EVALUATION: written examinationin

BIBLIOGRAPHY:

Frank D. Luna - Introduction to 3D Game Programming with DirectX 9.0 - Wordware Publishing, Inc., Plano - Texas, 2003;
Tomas Möller, and Eric Haines. Real-TimeRendering. 2nd ed. Natick, Mass.: A K Peters, Ltd., 2002
Wendy Jones - An Introduction to 3D Computer Graphics - Course Technology PTR, 2004.

SUBJECT : 3D GRAPHICS AND ANIMATION-PROJECT

NUMBER OF CREDIT POINTS: 1

SEMESTER: I

TYPE OF COURSE: specialty

COURSE OBJECTIVES: If required

COURSE CONTENT: If required

TEACHING LANGUAGE: Romanian

EVALUATION: project

BIBLIOGRAPHY:

If required

SUBJECT : RADIO- TV - JOURNALISM

NUMBER OF CREDIT POINTS: 4

SEMESTER: I

TYPE OF COURSE: specialty

COURSE OBJECTIVES: Study modes of communication, the notion of semiotics, mass culture, the specific radio and TV communications. Initiation of shooting modes, the camera movements. Reporting. Table mounting grids programe.Manipularea the media.

COURSE CONTENT: Communication-Semiology. The mass media media.Societatea. Characteristics of mass communication; Characteristics of media products. Socio-cultural functions of the media. General concepts of journalism; Reportage. Elements of journalistic writing text;

Message characteristics televizat. Cantitatea message. Its coverage and penetration of televizat. Viteza message transmission (movement) Force audio-visual impact of the message. Elements of film language; Units coated image. Methods of filming.

TEACHING LANGUAGE: Romanian

EVALUATION: oral examination

BIBLIOGRAPHY:

Haas, Michael H., Uwe Frigge, Gert Zimmer, Radio management- Manualul jurnalistului de radio, Editura Polirom, Iași, 2001;
Joanescu, Irene, Radioul modern, Tratatrea informației și principalele genuri informative, Editura All, București, 1999;
Bakenhuss, Norbert, Radioul local - Ghid practice pentru jurnaliști, Editura Polirom, Iași, 1998;
Bertrand, Claude-Jean, O introducere în presa scrisă și vorbită, Traducere coordonată de Mirela Lazăr, Editura Polirom, Iași, 2001;
Grosu Popescu, Eugenia, Jurnalism radio-Specificul radiofonic, Editura Teora, București, 1998.

SUBJECT : INSTRUMENTATION AND MEASURING SYSTEMS

NUMBER OF CREDIT POINTS: 5

SEMESTER: I

TYPE OF COURSE: field related

COURSE OBJECTIVES: The course aims at presenting basic knowledge of measurement systems (structure, electronic blocks specific performance), the structure and operation of electronics measurement and visualization, general characteristics, operating principles and applications of sensors and transducers.

COURSE CONTENT: Introduction; Electronic circuits specific measurement systems; Electronic measurement and visualization devices; Sensors and transducers; Multisensor systems.

TEACHING LANGUAGE: Romanian

EVALUATION: written examination

BIBLIOGRAPHY:

Purcaru D., Măsurări electronice, Editura Universitaria, Craiova, 2004;
Purcaru D.M., Senzori și traductoare. Vol. I, Editura Reprograph, Craiova, 2001;
Purcaru D., Măsurări și traductoare. Suport electronic pentru curs, seminar și laborator (electronics.ucv.ro/dpurcaru), 2007;
Ionescu G., ș.a, Traductoare pentru automatizări industriale. Vol. I și II, Editura Tehnică, București, 1985, 1996;
Țăulescu M., Instrumentație și tehnici electrice de măsurare, Reprografia Universității din Craiova, 1997.

SUBJECT : MICROCONTROLLERS AND MICROPROCESSORS

NUMBER OF CREDIT POINTS: 5

SEMESTER: I

TYPE OF COURSE: field related

COURSE OBJECTIVES: The course provides knowledge of microprocessor architecture and operation 16/32 bit with emphasis on Intel 80x86 family. Knowledge of modern architecture PC / controller, the bus system PC-104/ISA and PC-104+/PCI AND interfaces for them. Knowledge architecture and peripheral resources specific to families representative of 8 and 16-bit microcontrollers and knowledge development environments (software and hardware) used for the development of microcontroller applications. It seeks to develop capacity for selecting a

microcontroller (computing power, resources and other criteria) for a specific application.

COURSE CONTENT: Introduction to Intel architecture 80x86; The instruction 80x86; System architecture; System buses, and ISA PC-104, PC-104 system buses + and PCI; Introduction; family AVR (Atmel) 16LX family (Fujitsu Microelectronics).

TEACHING LANGUAGE: Romanian

EVALUATION: written examination

BIBLIOGRAPHY:

Nicola, S. Microcontrolere. Aplicații in mecatronica, Ed. Universitaria Craiova, 2005;

Popa, M. Microprocesoare si microcontrolere, Editura Politehnica Timișoara, 1997;

Athanasiu, I, A. Panoiu, A. Microprocesoarele 8086, 286, 386, Editura Teora, București 1993;

Kuhnel, K., AVR RISC Microcontroller Handbook, Butterworth-Heinemann, 1998;

Barnett., Cox., O'Cull, Embedded C Programming and the Atmel AVR, Thomson Delmar Learning, 2001.

SUBJECT : MICROCONTROLLERS AND MICROPROCESSORS-PROJECT

NUMBER OF CREDIT POINTS: 1

SEMESTER: II

TYPE OF COURSE: field related

COURSE OBJECTIVES: to create a development system with ATtiny 2313 AVR microcontroller application thus proving the complete functionality of hardware implementation.

COURSE CONTENT: Designing an interface I/O ISA/PC-104, Design a memory module ISA/PC-104; Decoding logic circuit implemented with a CPLD; Input-output TTL and non TTL galvanic isolation; Concrete design data (values, types of circuits) are imposed custom level student. Full size is required and all external components used; Implementation of a ATtiny 2313 AVR microcontroller development team level 2 students. Perform including ISP programmer. The scheme is general, but it is custom (of team) application that will demonstrate the full functionality of hardware implementation.

TEACHING LANGUAGE: Romanian

EVALUATION: project

BIBLIOGRAPHY:

Nicola, S. Microcontrolere. Aplicații in mecatronica, Ed. Universitaria Craiova, 2005;

Popa, M. Microprocesoare si microcontrolere, Editura Politehnica Timișoara, 1997;

Athanasiu, I, A. Panoiu, A. Microprocesoarele 8086, 286, 386, Editura Teora, București 1993;

Kuhnel, K., AVR RISC Microcontroller Handbook, Butterworth-Heinemann, 1998;

Barnett., Cox., O'Cull, Embedded C Programming and the Atmel AVR, Thomson Delmar Learning, 2001.

SUBJECT : AUTOMATIC SYSTEMS

NUMBER OF CREDIT POINTS: 5

SEMESTER: II

TYPE OF COURSE: field related

COURSE OBJECTIVES: The course deals with the fundamental problems of automatic control systems both continuous and discrete. There are presented theoretical and practical methods for analyzing, designing and implementing control systems.

COURSE CONTENT: Systems based on fuzzy set theory (fuzzy); Adaptive automatic control systems; Automatic control of stochastic systems; Automatic control systems

Sintza discrete time; Continuous automatic adjustment ssistemelor synthesis; Steady state analysis of control systems; The problem formulation automation; Automatic control systems design; Realization of operational amplifiers continuous linear control laws; General on the implementation of laws regulating structure of creating a industrial controller; Signals unified automation equipment; Automation equipment classification; Functions equipment automation; Achieving automation equipment; Auto unconventional structure; Quality indicators and performance requirements for automatic systems; Examinationple analysis of a src described by a schema automation: system of a fluid flow control; Standardized laws regulating continue straight; Symbolization automatic control systems; Conventional control systems (src) general structure of a control system; Automatic control structures and laws.

TEACHING LANGUAGE: Romanian

EVALUATION: written examination

BIBLIOGRAPHY:

Marin, C., Structuri și legi de reglare automată, Editura Universitaria Craiova, ISBN: 973-8043-96-8, 2000, Craiova, 2000, 276 pg;

Marin, C., Sisteme neconvenționale de reglare automată, Editura SITECH Craiova, 2004, ISBN 973-657-793-7, Craiova, 2004, 184 pg;

Marin, C., Ingineria reglării automate-Elemente de analiză și sinteză, Editura SITECH Craiova, 2004, ISBN 973-657-765-1, Craiova, 2004, 156 pg;

Marin, C., Petre, E., Popescu, D., C. Ionete, D. Selișteanu, Sisteme de reglare automată, Lucrări practice II, ISBN:973-9346-09-4, Editura SITECH Craiova, 1998, Craiova, 1998, 280 pg;

Marin, C., Petre, E., Popescu, D., Ionete, C., Selișteanu, D., Sisteme de reglare automată, Lucrări practice I, ISBN: 973-9346-09-4, Editura SITECH Craiova, 1997, Craiova, 1997, 257 pg.

SUBJECT : ELECTRONIC STRUCTURE FOR MULTIMEDIA

NUMBER OF CREDIT POINTS: 4

SEMESTER: II

TYPE OF COURSE: specialty

COURSE OBJECTIVES: The course aims to introduce the concepts of functional structures characterization and implementation of mixed-signal systems.

COURSE CONTENT: Functional blocks of the electronic structures of signal and data processing; Data converters; Power management in multimedia systems; Sensors capture images and screens; Aspects of the implementation and testing of mixed-signal systems.

TEACHING LANGUAGE: Romanian

EVALUATION: written examination

BIBLIOGRAPHY:

P. R. Gray, P. J. Hurst, S. H. Lewis, and R. G. Meyer, Analysis and Design of Analog Integrated Circuits, 4th edition, John Wiley & Sons, 2001;

P. R. Gray, R. C. Mayer, Circuite integrate analogice. Analiza si proiectare. Ed Tehnica, Bucuresti, 1997;

K. M. Daugherty, Analog-to-Digital Conversion: A Practical Approach, McGraw-Hill, 1995;

B. Razavi, Principles of Data Conversion System Design, IEEE Press, 1995;

R. J. Baker, CMOS Mixed-Signal Circuit Design, Vol. 2, IEEE Press, 2003.

SUBJECT : DIGITAL SIGNAL PROCESSING

NUMBER OF CREDIT POINTS: 4

SEMESTER: II

TYPE OF COURSE: field related

COURSE OBJECTIVES: The course aims to introduce the basic concepts of digital signal processing problems. It aims to create skills for the design and analysis of digital filters properties, how to implement digital filters and signal spectral estimation. The course deals also with problems of truncation and finite word length.

COURSE CONTENT: Problems of signal processing; Digital filters; Discrete systems and Z transformation; Design digital filters; Spectral estimation signal; Digital signal processors.

TEACHING LANGUAGE: Romanian

EVALUATION: written examination

BIBLIOGRAPHY:

Oppenheim A.V., Shafer R.W., Buck J.R., Discrete-Time Signal Processing (Second Edition), Prentice-Hall, 1999;

Lathi B.P., Signal Processing and Linear Systems, Berkeley Cambridge Press, 1998;

Haddad, R.A., Parsons T.W., Digital Signal Processing – Theory, Applications and Hardware, Computer Science Press, 1991;

Marin, C., Sisteme discrete in timp, Ed. Universitaria, Craiova, 2005;

Marin C., Popescu D., Teoria sistemelor si reglare automata, Ed. Sitech, Craiova, 2007.

SUBJECT : DATA TRANSMISSION

NUMBER OF CREDIT POINTS: 4

SEMESTER: II

TYPE OF COURSE: specialty

COURSE OBJECTIVES: The course helps to prepare the future engineers by ensuring their knowledge about information transmission theory, and the design and realization of data transmission systems.

COURSE CONTENT: Introduction to information transmission; Communication channels; Signals used for data transmission; Information transmission using sinusoidal carrier; Digital transmission of information; Control errors in data transmission; Data compression; Data transmission systems management processes.

TEACHING LANGUAGE: Romanian

EVALUATION: written examination

BIBLIOGRAPHY:

Held G., Data Compression. Techniques and Applications. Hardware and software, Ed. John Wiley&Sons 1985;

Held G., Comunicații de date, Editura Teora, București, 1998;

Iancu E., Teoria transmisiei datelor, Editura Universitaria, Craiova, 2004;

Iancu E., Transmisii de date , îndrumar de laborator 1995, Reprografia Universității din Craiova;

Proakis J., Communication Systems Engineering, Prentice Hall International Editions, 1994.

SUBJECT : MULTIMEDIA SOFTWARE SYSTEMS

NUMBER OF CREDIT POINTS: 3

SEMESTER: II

TYPE OF COURSE: specialty

COURSE OBJECTIVES: The scope of the course is to describe the defining characteristics, methods, techniques and / or standards for the representation of media used by software dedicated multimedia systems: text, static images, dynamic images, animation, audio, video.

CONTENT: Introduction; The elements of multimedia project dedicated software; Internet and Web; Multimedia Projects: HTML vs. Dreamweaver application.

TEACHING LANGUAGE: Romanian

EVALUATION: written examination

BIBLIOGRAPHY:

D. Danciu – Aplicații Multimedia, Ed. Universitaria, 2006;

D. Danciu – Aplicații Multimedia. Îndrumar de laborator, Tipografia Universității din Craiova, 2003;

A. S. Tanenbaum – Rețele de calculatoare, Ediția a 3-a, Ed. Agora Tg. Mureș, 1997;

T. Vaughan – Multimedia. Ghid practic, Ed. Teora, 2002;

J.C. Teague – DHTML și CSS, Ed. Teora, 2002.

SUBJECT : MULTIMEDIA SOFTWARE SYSTEMS - PROJECT

NUMBER OF CREDIT POINTS: 1

SEMESTER: II

TYPE OF COURSE: specialty

COURSE OBJECTIVES: The project tests the skills acquired by students in course and laboratory classes.

COURSE CONTENT: • Creating a multimedia project using HTML, cascading style sheets CSS and dedicated software: Macromedia Dreamweaver.

TEACHING LANGUAGE: Romanian

EVALUATION: project

BIBLIOGRAPHY:

D. Danciu – Aplicații Multimedia, Ed. Universitaria, 2006;

D. Danciu – Aplicații Multimedia. Îndrumar de laborator, Tipografia Universității din Craiova, 2003;

A. S. Tanenbaum – Rețele de calculatoare, Ediția a 3-a, Ed. Agora Tg. Mureș, 1997;

T. Vaughan – Multimedia. Ghid practic, Ed. Teora, 2002;

J.C. Teague – DHTML și CSS, Ed. Teora, 2002.

SUBJECT : PROJECT MANAGEMENT

NUMBER OF CREDIT POINTS: 4

SEMESTER: II

TYPE OF COURSE: field related

COURSE OBJECTIVES: getting the students familiar with the aspects linked to the management and control of project-organised activities.

COURSE CONTENT: Project life cycle; Project proposal; Alternative organizational project management work environment project manager project Manager role and responsibilities; Analysis of proposals for projects; Conflict management; Team assembly project, planning network diagrams; Specialty software project management.

TEACHING LANGUAGE: Romanian

EVALUATION: checking

BIBLIOGRAPHY:

Maican C., Vinatoru M., Canureci G. "Managementul Proiectelor-Îndrumar de laborator", EUC, 2006;

Carl S. Chatfield, PMP, Tim D. Johnson, MCP, "Microsoft Project 2000";

Jack R. Meredith, Samuel J. Mantel. "Project Management : A Managerial Approach", 5th ed., Wiley, 2002;

Johnson, James. "The Chaos Report." West Yarmouth, MA: The Standish Group, 2000;

Kan, Stephen H. "Metrics and Models in Software Quality Engineering" . 2nd ed. Boston, MA: Addison-Wesley Professional, 2002.

SUBJECT : INTERSHIP 2

NUMBER OF CREDIT POINTS: 5

SEMESTER: II

TYPE OF COURSE: field related

COURSE OBJECTIVES: The course aims to support future automation engineers, thus technology knowledge. The internship is aimed to improve the knowledge and understanding of the phenomena and to enable practical applications.

COURSE CONTENT: Study processes in the food industry, energy, construction machinery, materials, constructs, etc. (Ford, Elpreco, Termo Işalniţa, Termo Rovinari, Termo Turceni, Craiova Brewery, Regia Autonomă Apele Române); Software packages and hardware systems used in the automotive industry - leading embedded systems in real time. (Ford, Dacia-Renault Piteşti, Hella, Continental Sibiu, Siemens etc); Industrial Process Management (Dacia-Renault, Elpreco, Ford); Systems for automatic temperature, pressure, flow, etc. (Termo Işalniţa, Termo Rovinari, Termo Turceni); Flexible manufacturing lines. Construction and operation. (Ford, Elpreco, Fabrica de bere Craiova); PLCs. Programming and operating industrial implementations. (Craiova Brewery, Elpreco, Ford, Siemens, Continental Sibiu); Industrial robots. Operation, programming, maintenance. (Ford, Dacia-Renault); Distributed Systems for control of industrial processes. (Termo Işalniţa, Termo Rovinari, Termo Turceni, Ford); Graphical interfaces, virtual instrumentation and acquisition systems used in process control (Procontrol, Labview etc). (Termo Işalniţa, Termo Rovinari, Termo Turceni, Dacia-Renault); Industrial Computer Networks. (Ford, Dacia-Renault, Termo Işalniţa, Termo Rovinari, Termo Turceni etc.).

TEACHING LANGUAGE: Romanian

EVALUATION: oral examination

BIBLIOGRAPHY:

- Ionete, C., Selişteanu, D., Echipamente de Automatizare şi Protecţie, Reprografia Universităţii din Craiova, 2000;
- Jurca, T., Stoiciu, D., Instrumentaţie de măsurare. Structuri şi circuite, Ed. de Vest, Timişoara, 1996;
- McGhee, J., Kulesza, W., Henderson, I.A., Korczynski, M.J., Measurement Data Handling Theoretical Technique, Technical University of Lodz, ACGM. Lodart, Lodz, Polonia, 2001.
- Selişteanu, D., Ionete C., Petre E., Popescu D., Şendrescu D., Aplicaţii LabVIEW pentru achiziţia şi generarea datelor, Editura SITECH, Craiova, 2004;
- Selişteanu, D., Ionete, C., Petre, E., Popescu, D., Şendrescu, D., Ghid de programare în LabVIEW. Aplicaţii pentru prelucrarea semnalelor, Tipografia Universităţii din Craiova, 2003.

4-TH YEAR

SUBJECT : MULTIMEDIA TECHNOLOGIES IN E-LEARNING

NUMBER OF CREDIT POINTS: 4

SEMESTER: I

TYPE OF COURSE: specialty

COURSE OBJECTIVES: The scope of the course is to introduce basic concepts and the use of interactive multimedia technology in e-learning.

COURSE CONTENT: Introduction of e-learning and interactive multimedia; Fundamental theories of design education; The use of multimedia technologies in education; Design and usability in e-learning educational games; Simulations and virtual experiments; Standards and specifications in e-learning platforms for e-learning (Learning Management Systems) online testing, adaptive hypermedia systems for e-learning, E-learning 2.0. Virtual communities; Mobile multimedia and e-learning; Virtual labs.

TEACHING LANGUAGE: Romanian

EVALUATION: written examination

BIBLIOGRAPHY:

- S. Mishra, R. Sharma: "Interactive Multimedia in Education and Training". Idea Group, 2005;
- Z. Ma: "Web-based Intelligent E-learning Systems". Information Science Publishing, 2006;
- M. Brut: "Instrumente pentru e-learning". Polirom, 2006;
- A. Adascalitei: "Instruire asistata de calculator", Polirom, 2007;
- C. Aldrich: "Learning by doing: A comprehensive guide to simulations, computer games, and pedagogy in e-learning and other educational experiences". Pfeiffer: San Francisco, 2005.

SUBJECT : MULTIMEDIA TECHNOLOGIES IN E-LEARNING - PROJECT

NUMBER OF CREDIT POINTS: 1

SEMESTER: I

TYPE OF COURSE: specialty

COURSE OBJECTIVES: The project aims to develop practical experience in the design and implementation of multimedia applications in e-learning.

COURSE CONTENT: • Making a website for e-learning in Flash which should include interactive and multimedia elements to be implemented using Adobe Flash CS Professional. The project is designed in teams and the topics of the course module for each team are assigned at the beginning of the semester.

TEACHING LANGUAGE: Romanian

EVALUATION: project

BIBLIOGRAPHY:

- S. Mishra, R. Sharma: "Interactive Multimedia in Education and Training". Idea Group, 2005;
- Z. Ma: "Web-based Intelligent E-learning Systems". Information Science Publishing, 2006;
- M. Brut: "Instrumente pentru e-learning". Polirom, 2006;
- A. Adascalitei: "Instruire asistata de calculator", Polirom, 2007;
- C. Aldrich: "Learning by doing: A comprehensive guide to simulations, computer games, and pedagogy in e-learning and other educational experiences". Pfeiffer: San Francisco, 2005.

SUBJECT : INTERNET APPLICATIONS

NUMBER OF CREDIT POINTS: 5

SEMESTER: I

TYPE OF COURSE: specialty

COURSE OBJECTIVES: The course aims at introducing the basic concepts of electronic applications. The tutorial and laboratory classes are designed to secure the theoretical

knowledge and practical realization of electronic applications in various fields.

COURSE CONTENT: Introduction; Setting up liaison; Structural diagrams; Generation prototypes and specificity dedicated software applications.

TEACHING LANGUAGE: Romanian

EVALUATION: written examination

BIBLIOGRAPHY:

Application Design www.Axure.com;
Realtime e-Application Life - Realtime Solutions Group;
www.developeguidance.com;
www.netbeans.org;
www.carettasoftware.com.

SUBJECT : AUDIO AND VISUAL EQUIPMENT

NUMBER OF CREDIT POINTS: 4

SEMESTER: I

TYPE OF COURSE: specialty

COURSE OBJECTIVES: The course aims to familiarize the students with the equipment and multimedia applications and acquire the use and configuration of the main multimedia equipment. Developing multimedia web pages, using various multimedia programs, building multimedia presentations.

COURSE CONTENT: Informational aspects of audio and video data in multimedia Standards multimedia applications. News in multimedia audio technologies, video data compression, data storage equipment multimedia Experimental Analysis of sound cards, video adapters and MPEG video projector, using cameras connected to the PC and the TV Tuner application type, camcorder-presentation features facilities; movements that can be performed with the camera and the camera videocaptoare angulation, the panoramic, traveling, zooming, transtrovul, ambient atmosphere and background lines in the frame and frame accuracy, photographic techniques, white balance and color temperature, exposure, photographic composition, the light in the photo, the flash as fill light, histogram, white balance and color temperature, volume and color Lini surfaces, use formatting graphics applications, computer animation.

TEACHING LANGUAGE: Romanian

EVALUATION: oral examination

BIBLIOGRAPHY:

L. Festila, E. Simion, C. Miron, Amplificatoare audio și sisteme muzicale. Ed. Dacia , Cluj-Napoca , 1990
L. Stanciu, Echipamente audio HI-Fi, Editura Matrix Rom, Bucuresti 1998;
M. Basoiu, DCC, Casetofoane digitale, Editura Tehnica, Bucuresti, 1998;
S. Naicu, Videocasetofoane si videocamere, Editura Teora, Bucuresti, 1995 digitale, Ed. Matrix, București, 2001;
Vlaicu A., Prelucrarea digitală a imaginilor, Ed. Albatros, Cluj-Napoca, 1997.

SUBJECT : HUMAN-MACHINE INTERFACES

NUMBER OF CREDIT POINTS: 4

SEMESTER: I

TYPE OF COURSE: specialty

COURSE OBJECTIVES: The course aims at clarifying concepts on the usefulness and adaptability of software user requirements. The project required this course is designed to train students to use the instrument of open programming, while exploring user requirements.

COURSE CONTENT: Usefulness and adaptability of software to the user; User-oriented design; Interfaces utilizator. Arhitecturi Software; Special user requirements;

The models of conceptual; Design models intrare. Principles; The prototip. Constraints and layers prototyping of user type the system of calculation tools; Heuristic evaluation. User Testing of products; Systems design experimentation and checking the produsului. Analiza experiments Research: predictivă. Informația evolving visual type; Type touch user interfaces. Interfaces with zoom capabilities and interfaces transparently.

TEACHING LANGUAGE: Romanian

EVALUATION: oral examination

BIBLIOGRAPHY:

Norman, D. A. The Design of Everyday Things. New York, NY: Doubleday, 1990. ISBN: 0385267746;
Nielsen, J. Usability Engineering. Burlington, MA: Academic Press, 1994. ISBN: 0125184069;
Mullet, K., and D. Sano. Designing Visual Interfaces: Communication oriented techniques. Upper Saddle River, NJ: Prentice Hall, 1994. ISBN: 0133033899;
Baecker, R. M., et al. Readings in Human-Computer Interaction: Toward the Year 2000. San Francisco, CA: Morgan Kaufmann, 1995. ISBN: 1558602461;
Shneiderman, B. Designing the User Interface: Strategies for Effective Human-Computer Interaction. 4th ed. Reading, MA: Addison-Wesley, 2004. ISBN: 0321197860.

PACKAGE A

SUBJECT : COMMUNICATION SYSTEMS

NUMBER OF CREDIT POINTS: 4

SEMESTER: I

TYPE OF COURSE: field related

COURSE OBJECTIVES: The course introduces the main features, elements and functions of mobile telecommunications networks. Within the first part of the course there are presented some basic knowledge on radio wave propagation, methods of designing mobile radio networks taking into account the geometry of the network and traffic interference, multiple access algorithms, methods used for outgoing calls and to ensure communication quality in cellular RCM etc. The second part of the course is devoted to a brief analysis of representative mobile communication systems GSM, DECT, TETRA, UMTS.

COURSE CONTENT: General concepts on communication systems; The evolution of mobile communication; Mobile radio channels; Loss prediction models for cover construction areas (Okumura, Ibrahim-Parsons, Lee etc.); Cellular mobile communication networks; Geometric analysis of cellular networks, dimensions of the user (cluster); Multiple access techniques applications in mobile communication networks; Procedures used for outgoing calls and to ensure the quality of communication in cellular RCM; The transfer of communication link: The embodiment of transfers; criteria for determining the transfer moment; CMI transfer generation systems; software transfer; the imperceptible transfer; Communication security: protection against unauthorized network access, authentication algorithms, protection of user identity; Protection of transmitted information; classification algorithms; GSM System. Global parameters. General aspects of GSM; GSM system architecture. Functional architecture. Architecture of protocols; The GPRS. Comparison with GSM. circuit switching Vs. packet switching. Architecture and Services.

TEACHING LANGUAGE: Romanian

EVALUATION: written examination

BIBLIOGRAPHY:

- I. Marghescu, Șt. Nicolaescu, N. Coțanis, "Comunicații mobile terestre", Editura Tehnică, 1999;
- A. Mateescu, I. Bănică, E. Borcoci, I. Marghescu, T. Rădulescu, C. Negrescu, S. Zoican, Roxana; Zoican, I. Dragu, "Sisteme și rețele GSM", Ed. Tehnică, București, 1999;
- R. Zoican, "Sisteme celulare de telecomunicații", MATRIX ROM, 2003;
- R. Zoican, S. Zoican, D. Constantinescu, A. Constantin, E. Popovici, "Comunicații mobile-Îndrumar de laborator", tipografia U.P.B., 1999;
- W.C. Lee, "Mobile Communications Design Fundamentals", John Wiley & Sons, 1993.

SUBJECT : RECOGNITION AND IMAGE PROCESSING

NUMBER OF CREDIT POINTS: 4

SEMESTER: I

TYPE OF COURSE: specialty

COURSE OBJECTIVES: The course aims to introduce basic concepts and skills needed to create acquisition, processing and image recognition.

COURSE CONTENT: Introduction to image acquisition and processing; Image analysis; Image restoration; Increase image quality; Image recognition; Applications acquisition; Processing and image recognition.

TEACHING LANGUAGE: Romanian

EVALUATION: written examination

BIBLIOGRAPHY:

- Computer Imaging: Digital Image Analysis and Processing , Scott E Umbaugh, The CRC Press, Boca Raton, FL, January 2005, 659 pg., CVIPtools CD-ROM with book, ISBN: 0-84-932919-1;
- Computer Vision and Image Processing: A Practical Approach Using CVIPtools , S. E Umbaugh, Prentice Hall PTR, Upper Saddle, NJ, 1998, 504 pages, includes CD-ROM with software, ISBN 0-13- 264599-8;
- Machine Vision : Theory, Algorithms, Practicalities, E. R. Davies, Elsevier, 2005;
- Achizitia, prelucrarea si recunoasterea imaginilor, Cojocaru, D, 2003, Editura Universitaria, ISBN 973-8043-146-6;
- Fuzzy Techniques in Computer Vision, Tănăsie, R. T., Cojocaru, D., 2006, Editura Universitaria, ISBN 973-742-428-X, 978-973-742-428- 0.

SUBJECT : DESIGN, AESTHETICS AND BROADCASTING SEMIOTICS

NUMBER OF CREDIT POINTS: 4

SEMESTER: I

TYPE OF COURSE: specialty

COURSE OBJECTIVES: The course presents the basics of verbal and visual cinema and television communication specific.

COURSE CONTENT: Introduction to the art of broadcasting. Cinematography in the context of other arts, Film morphology, film types of plans; The components of the the movie theater; Frame lines and their importance in photo-film composition; Setting composition; Color - language element; Film thinking. The action plan; Movies and television mounting methods; Fundamentals of film and television mounting; Cinematographic grammar. Cinematographic punctuation.

TEACHING LANGUAGE: Romanian

EVALUATION: written examination

BIBLIOGRAPHY:

- L. Bratu – Drumul spre artă al cineamatorului, Ed. Meridiane, București, 1990;

- N. Stanciu ș.a. – Tehnica imaginii în televiziune și cinematografie, Ed. Tehnică, București, 1971;
- C. Manoilă – Arta imaginii color video – TV, Ed. Militară;
- M. Bălășescu – Manual de producție de televiziune, Ed. Polirom, Iași, 2003.

PACKAGE B

SUBJECT : PARALLEL AND DISTRIBUTED PROCESSING SYSTEM IN MULTIMEDIA

NUMBER OF CREDIT POINTS: 4

SEMESTER: I

TYPE OF COURSE: field related

COURSE OBJECTIVES: The course aims to familiarize students with the requirements for distributed industrial process management , knowledge of computer programming structures and process, methods of control, optimization and management for industrial processes, architecture and management structure for distributed SCADA systems, SCADA systems for proper applications of thermo and distribution and transportation of hydroelectric energy.

COURSE CONTENT: Parallel processing in distributed systems; computer organization for parallel and distributed the calculation; Parallel processing in automated systems ; Selecting iPower SCADA System SCADA equipment for electricity distribution; Communication in distributed systems; Distributed management systems in power plants; SCADA systems in hydropower plants; SCADA systems in nuclear plants.

TEACHING LANGUAGE: Romanian

EVALUATION: written examination

BIBLIOGRAPHY:

- Vinătoru M., Conducerea automată a proceselor industriale, vol I, Ed. Universitaria, Craiova 2001;
- Vinătoru M., Conducerea automată a proceselor industriale, vol II, Ed. Universitaria, Craiova 2007;
- Houpis, C. H., Lamont, G. B., Digital control systems -Theory, Hardware, Software, Mc. Graw- Hill, 1992;
- Sângeorzan D., Echipamente de reglare numerică , Ed. militară , București , 1990;
- Călin S., ș.a., Optimizări în automatizări industriale , Editura tehnică , București 1979.

SUBJECT : PROGRAMMABLE CONTROLLERS

NUMBER OF CREDIT POINTS: 4

SEMESTER: I

TYPE OF COURSE: field related

COURSE OBJECTIVES: The course aims to introduce the basic concepts of PLC programming and issues regarding PLC management processes.

COURSE CONTENT: Introduction to control systems, Programmable logic structures, Principles of process control programs with AP, AP Special Functions, Driving robots with AP, AP Interfacing led process, Interconnection of AP, selection, installation and commissioning of AP.

TEACHING LANGUAGE: Romanian

EVALUATION: written examination

BIBLIOGRAPHY:

- Popescu Dorin, Automate Programabile, Ed. Sitech, Craiova, 2001;
- Boranguiu Th., Dobrescu R., Automate Programabile, Ed. Academiei, 1986;
- Ivănescu M., Roboți industriali, Ed. Universitaria, 1994;
- Webb J.W., Reis A., Programmable Logic Controllers – Principles and Applications, Prentice Hall, 1999;
- Popescu Dorin, s.a., Automate Programabile, Reprografia Universității din Craiova, 1996.

SUBJECT : COMPUTER AIDED DESIGN OF CONTROL SYSTEMS**NUMBER OF CREDIT POINTS: 4****SEMESTER: I****TYPE OF COURSE:** specialty

COURSE OBJECTIVES: The course contributes to the development of future automation engineers, thus providing knowledge of control systems computer-aided design. There are introduced basic concepts of specialty software packages for systems analysis and synthesis, procedures and design standards process management systems.

COURSE CONTENT: Software packages used in computer-aided design of control systems, creating and manipulating models of dynamic systems, methods, computer aided design of control systems, problems of numerical algorithms management implementation, computer aided control systems - Case studies.

TEACHING LANGUAGE: Romanian

EVALUATION: written examination

BIBLIOGRAPHY:

- Åström, K.J., Wittenmark, B., Computer-Controlled Systems: Theory and Design, Prentice-Hall, 1990;
- Ionete, C., Selișteanu D., Petrișor A., Proiectarea sistemică asistată de calculator în MATLAB, Reprografia Universității din Craiova, 1995;
- Leonard, N.E., Levine, W.S, Using MATLAB to analyze and design Control Systems, Addison-Wesley Publ., SUA, 1995;
- Marchand, P., Graphics and GUIs with MATLAB, CRC Press, SUA, 1999;
- Marin, C., Popescu, D., Petre, E., Ionete, C., Selișteanu, D., Sisteme de Reglare Automată. Lucrări Practice II, Ed. Sitech, Craiova, 1998.

SUBJECT : COMPUTER NETWORKS**NUMBER OF CREDIT POINTS: 4****SEMESTER: II****TYPE OF COURSE:** specialty

COURSE OBJECTIVES: The course at training future engineers, providing them with knowledge of computer networks. There are introduced basic concepts used in networks design and implementation.

COURSE CONTENT: Computer architecture. General information; Local computer networks (LAN); The transmission environment in local area networks; Interconnection of local networks; Access methods to the physical environment; the Ethernet Network; Addressing and routing algorithms for network; Internet and Intranet networks.

TEACHING LANGUAGE: Romanian

EVALUATION: written examination

BIBLIOGRAPHY:

- Held G., Data Compression. Techniques and Applications. Hardware and software, Ed. John Wiley&Sons 1985;
- Held G., Comunicații de date, Editura Teora, București, 1998;
- Iancu E., Teoria transmisiei datelor, Editura Universitaria, Craiova, 2004;
- Iancu E., Transmisii de date , îndrumar de laborator 1995, Reprografia Universității din Craiova;
- Odom Wendell, Primii pasi in retele de calculatoare, Ed. Corint, Bucuresti 2004.

SUBJECT : DRAFTING OF THE BACHELOR DEGREE PROJECT**NUMBER OF CREDIT POINTS: 10****SEMESTER: II**

TYPE OF COURSE: field related

COURSE OBJECTIVES: if needed

CONTENT: if needed

TEACHING LANGUAGE: Romanian

EVALUATION: oral examination

BIBLIOGRAPHY:

if needed.

PACKAGE A**SUBJECT : WEB TECHNOLOGIES****NUMBER OF CREDIT POINTS: 4****SEMESTER: II****TYPE OF COURSE:** de domeniu

COURSE OBJECTIVES: The course aims to introduce the fundamentals of web programming using various technologies (HTML, JavaScript, PHP, Perl).

COURSE CONTENT: Introduction to Web programming, HTML, Introduction to CSS templates, PHP, Using XML in the context of Web, Perl, Javascript, XML language, Web dynamic and sending data to a web server.

TEACHING LANGUAGE: Romanian

EVALUATION: written examination

BIBLIOGRAPHY:

- E. Hall, "Internet Core Protocols: The Definitive Guide", O'Reilly, 2000, ISBN : 1-56592-572-6;
- D. Flanagan, "JavaScript: The Definitive Guide", O'Reilly, 4th edition, 2004, ISBN: 0-596-00048-0;
- B. Kennedy, C. Musciano, "HTML & XHTML: The Definitive Guide", O'Reilly, 5th edition, 2002, ISBN: 0-596-00382-X;
- R. Schwartz, T. Phoenix, B De Foy, "Learning Perl", O'Reilly, 5th edition, 2008, ISBN: 0-596-52010-7;
- P. Hudson, "PHP in a nutshell", O'Reilly, 2005, ISBN: 0-596-10067-1..

SUBJECT : SECURITY AND ENCRYPTION TECHNIQUES**NUMBER OF CREDIT POINTS: 3****SEMESTER: II****TYPE OF COURSE:** specialty

COURSE OBJECTIVES: The course aims to introduce the fundamental concepts related to: knowledge of general problems concerning data protection and security, arithmetic-logic concepts and models used in cryptographic techniques, secret key cryptography, public key cryptography, hash functions (hash) used criptografie, digital signatures , authentication protocols.

COURSE CONTENT: General information; Arithmetic-logical concepts and models used in cryptographic techniques; Secret Key Cryptograph; Detailing symmetric cryptography techniques; Public key cryptography; Hash functions (hash) used in cryptography; Digital signatures; Authentication protocols; Security in TCP / IP; Application-layer protocols and secured applications; Computer viruses, Conclusions.

TEACHING LANGUAGE: Romanian

EVALUATION: written examination

BIBLIOGRAPHY:

- W Stallings, Cryptography and Network Security, second ed., Prentice-Hall, 1999;
- Cormen T. Leiserson C. Rivest R introducere în algoritmi. Computer press Agora, 1999;
- Jursic A. Menezes A. Elliptic curves and Cryptography <http://www.certicom.com/research/wecrypt.html> WhitePaper;
- Patriciu V.V. Criptografie și securitatea rețelilor de calculatoare. Ed. Tehnică, 1994;
- *** Resurse Web plecând de la (<http://WilliamStallings.com/Security2e.html>).

SUBJECT : INFORMATION LEGAL PROTECTION**NUMBER OF CREDIT POINTS: 3****SEMESTER: II****TYPE OF COURSE:** specialty**COURSE OBJECTIVES:** Introduces the basics for understanding the necessity of a legislative framework for both users and designers that work in information technology. It aims at presenting a legislative framework and its implications.**COURSE CONTENT:** The legal and juridical act. Contracting related terms; Intellectual property rights, copyright, related rights; References to multimedia. Mark, trademark law, software protection. Privacy electronics, broadcasting law. The copyright; anvil audio or video recordings as evidence of criminal.**TEACHING LANGUAGE:** Romanian**EVALUATION:** oral examination**BIBLIOGRAPHY:**

Gazette du Palais- Recueil septmbre-octobre 2000, pp.2135,2141,2187, 2188-2190;

Law on the Press, April 1, 1862;

Patent law (64/1991);

Industrial Designs Act (129/1992);

Topographies of Integrated Circuits Protection Act (16/1995).

SUBJECT :TV AND MULTIMEDIA TECHNOLOGIES AND TECHNIQUES**NUMBER OF CREDIT POINTS: 3****SEMESTER: II****TYPE OF COURSE:** specialty**COURSE OBJECTIVES:** Cursul urmărește asimilarea de către studenți a cunoștințelor teoretice și practice legate de transmiterea la distanță, recepția, procesarea imaginilor, precum și studiul echipamentelor aferente.**COURSE CONTENT:** Introduction to Television; Television systems in black and white; Colored television systems; Video capture and playback devices; Studio Equipment; Transmission of television signals; TV broadcast reception transmitted by geostationary satellites: the area covered by the satellite; solar eclipse of the satellite; satellite coordinates; allocated frequency ranges for TV and radio programs broadcast via satellite.**TEACHING LANGUAGE:** Romanian**EVALUATION:** checking**BIBLIOGRAPHY:**

Basoiu, M., Constantinescu, C., Tubul cinescop. Principii, funcționare, depanare, Ed. Teora, 1999;

Damachi, E., s.a., "Televiziune", EDP, Bucuresti, 1983;

Filipescu, V.F., Sisteme de televiziune, Note de curs, în curs de publicare in 2009;

Fisher, W., Digital television – A practical Guide for Engineers, Ed. Springer, 2007;

Mitrofan, Gh., "Introducere în televiziune", Ed. Teora, 1993.

SUBJECT : REALITATE VIRTUALĂ**NUMBER OF CREDIT POINTS: 4****SEMESTER: II****TYPE OF COURSE:** specialty**COURSE OBJECTIVES:** The course aims to introduce the basic theoretical concepts using computer realization of virtual scenes.**COURSE CONTENT:** Introduction to virtual reality; Basic concepts of VRML programming language; Nodes; Prototypes and events processing; Other programming

languages describing the the virtual reality; Virtual reality applications.

TEACHING LANGUAGE: Romanian**EVALUATION:** oral examination**BIBLIOGRAPHY:**

Ionescu F., Grafica in realitatea virtuala, Ed. Tehnica, 2000; Diehl S., Distributed Virtual Worlds, Ed. Springer Verlag, 2001;

Pesce, VRML and Java, ViewSource, Netscape Communications, 1999.

PACKAGE B**SUBJECT : APPLICATIONS OF DIGITAL SIGNAL PROCESSING FOR SPEECH, MUSIC AND TELECOMMUNICATIONS****NUMBER OF CREDIT POINTS: 3****SEMESTER: II****TYPE OF COURSE:** specialty**COURSE OBJECTIVES:** Informatie lipsa.**COURSE CONTENT:** Informatie lipsa.**TEACHING LANGUAGE:** Romanian**EVALUATION:** written examination**BIBLIOGRAPHY:**

Informatie lipsa.

SUBJECT : ANALYZING AND DECISION TECHNIQUES**NUMBER OF CREDIT POINTS: 3****SEMESTER: II****TYPE OF COURSE:** specialty**COURSE OBJECTIVES:** The course focuses mainly on the representation and manipulation of uncertain knowledge aiming at modeling and reasoning the decision making and diagnosis process. Contributes to the formation of future engineers, thus providing knowledge in the defects detection and localization of (DLD). There are introduced basic concepts used in the design and implementation DLD filters.**COURSE CONTENT:** Fault detection in automated systems; Analytical methods for fault detection; Introduction to decision making issues; Techniques for decision modeling under conditions of uncertainty; Descriptive techniques of uncertain reasoning modeling.**TEACHING LANGUAGE:** Romanian**EVALUATION:** written examination**BIBLIOGRAPHY:**

Drăgan, V., A. Halanay (1994) Stabilizarea sistemelor liniare, Editura ALL, București;

Frank, P. M. (1990) Fault Diagnosis in Dynamic System Using Analytical and Knowledge Based Redundancy - A survey and some new results, Automatica, vol.26, no.3, pag.459 - 474;

Iancu, E., M. Vinatoru (1999) - Detectia și localizarea defectelor în sistemele dinamice, Editura Sitech Craiova;

Iancu, E., M. Vinatoru (2003) Metode analitice pentru detectia și localizarea defectelor. Studii de caz, Editura Universitaria, Craiova, 2003, I.S.B.N. 973-8043-407-6;

Ionescu, V., A. Varga (1994) Teoria sistemelor. Sinteza robustă. Metode numerice de calcul, Editura ALL, București.

SUBJECT : METHODS AND ALGORITHMS FOR MULTIMEDIA INFORMATION ENCODING**NUMBER OF CREDIT POINTS: 3****SEMESTER: II**

TYPE OF COURSE: specialty

COURSE OBJECTIVES: Informatie lipsa.

COURSE CONTENT: Informatie lipsa.

TEACHING LANGUAGE: Romanian

EVALUATION: oral examination

BIBLIOGRAPHY:

Informatie lipsa.

SUBJECT : VIRTUAL INSTRUMENTATION

NUMBER OF CREDIT POINTS: 3

SEMESTER: II

TYPE OF COURSE: specialty

COURSE OBJECTIVES: The course contributes to the development of future automation engineers by providing knowledge of virtual instrumentation. The basic concept is the design of virtual instruments for signals analysis and synthesis, signal filtering, management processes.

COURSE CONTENT: Analysis and synthesis of periodic signals in the time domain; Synthesis of periodic signals; Signals analysis; Discretization of continuous systems; The frequency response of the discretized systems; Numerical filters. Finite Impulse Response Filters – FIR; Numerical filters. Infinite impulse response filters – IIR; The implementation of regulating standardized laws in LabVIEW; Development and implementation of common fixed parts in LabVIEW; Implementing a virtual SRA using acquisition board AT-MIO-16H9 National Instruments.

TEACHING LANGUAGE: Romanian

EVALUATION: oral examination

BIBLIOGRAPHY:

Iancu, E., Teoria transmisiei datelor, Ed. Universitaria, Craiova, 2004;

Marin, C., Popescu, D., Petre, E., Selișteanu, D., Ionete, C., Sisteme de Reglare Automată. Lucrări Practice I, Ed. Sitech, Craiova, 1997;

Marin C., Ingineria reglării automate. Elemente de analiză și sinteză, Ed. SITECH, Craiova, 2004;

Oppenheim, A.V., Schafer, R.W., Discrete-Time Signal Processing, Second Edition, Prentice Hall International, 1999;

Selișteanu, D., Ionete, C., Petre, E., Popescu, D., Șendrescu, D., Ghid de programare în LabVIEW. Aplicații pentru prelucrarea semnalelor, Tipografia Univ. din Craiova, 2003.

SUBJECT : MULTIMEDIA SYSTEMS MODELING

NUMBER OF CREDIT POINTS: 4

SEMESTER: II

TYPE OF COURSE: specialty

COURSE OBJECTIVES: Informatie lipsa.

CONTENT: Informatie lipsa.

TEACHING LANGUAGE: Romanian

EVALUATION: oral examination

BIBLIOGRAPHY:

Informatie lipsa.

SUBJECT : WRITTEN EXAMINATIONINATION DE DIPLOMĂ

NUMBER OF CREDIT POINTS: 10

SEMESTER: II

TYPE OF COURSE: field related

EVALUATION: written examinationination