ANUL I
1. Mathematical Analysis - D27CEL101
2. Linear Algebra and I Geometry- D27CEL102
3. Computer Programming- D27CEL103
4. Physics – General Elements- D27CEL104
5. Logical Design of Digital Computers- D27CEL105
6. Knowledge, Human Communication and Internet- D27CEL106
7. English 1 - D27CEL107
8. Special Mathematics - D27CEL208
9. Numerical Methods- D27CEL209
10. Introduction to Electrical Engineering- D27CEL210
12. Computer Programming – Programming Technique - Project- D27CEL212
13. Digital Systems Design- D27CEL213
15. English 2- D27CEL215

ANUL II
1. Data Structures and Algorithms- D27CEL319
2. Data Structures and Algorithms - Project- D27CEL320
3. Electronics- D27CEL321
4. Computer Architecture- D27CEL322
5. Systems Theory and Control- D27CEL323
6. Object Oriented Programming- D27CEL324
7. Object Oriented Programming - Project- D27CEL325
8. Project Management- D27CEL326
9. English 1- D27CEL327
10. Algorithm Complexity Analysis - D27CEL428
11. Artificial Intelligence- D27CEL429
13. Assembly Programming Languages- D27CEL431
14. Measurement Techniques- D27CEL432
15. General Economics and Accounting- D27CEL433
16. English 2- D27CEL434
17. Practical Training- D27CEL435

ANUL III
1. Digital Integrated Circuits- D27CEL540
2. Databases- D27CEL541
3. Operating Systems- D27CEL542
4. Data Communication- D27CEL543
5. Computer Structure and Organization- D27CEL544
6. Computer Structure and Organization - Project- D27CEL545
7. Visual Programming Environments - D27CEL546
8. Visual Programming Environments - Project- D27CEL547
9. Computer Networks- D27CEL648
10. Database Design- D27CEL649
11. Database Design - Project- D27CEL650
12. Microprocessors System Design- D27CEL651
13. Distributed Network Application Development- D27CEL652

14. Distributed Network Application Development - Project- D27CEL653
15. Verification and Testing of Computer Systems - D27CEL655
16. Verification and Testing of Computer Systems - Project- D27CEL656
17. I/O Systems- D27CEL657
18. Software Engineering- D27CEL658
19. Software Engineering – Project- D27CEL659
20. Computer Systems Modelling- D27CEL660
21. Practical Training- D27CEL654

ANUL IV
1. Real Time Computing Systems- D27CEL763
2. Real Time Computing Systems – Project- D27CEL764
3. Computer Networks Management- D27CEL765
4. E-Commerce- D27CEL766
5. E-Commerce – Project- D27CEL767
6. Web Applications’ Design- D27CEL768
7. Web Applications’ Design – Project- D27CEL769
8. Data Security- D27CEL771
9. Data Security – Project- D27CEL772
10. Frameworks for Digital Systems Development- D27CEL773
11. Models and Algorithms for Parallel Computing- D27CEL774
12. Models and Algorithms for Parallel Computing – Project- D27CEL775
13. Formal Languages and Automata- D27CEL776
14. Practical Stage for Graduation – Project- D27CEL870
15. Embedded Systems- D27CEL877
16. Embedded Systems – Project- D27CEL878
17. DSP in Communication- D27CEL879
18. High Speed Networks- D27CEL880
19. Information Systems Management- D27CEL881
20. VLSI Environments- D27CEL882
21. Compiler Design- D27CEL883
22. Compiler Design – Project- D27CEL884
23. Algorithms for Information Retrieval- D27CEL885
24. Expert Systems- D27CEL886
25. Graphical Systems- D27CEL887
26. Multimedia Application Development- D27CEL888
MATHEMATICAL ANALYSIS

Number of credits: 4
Semester: I
Type of course: fundamental
Course objectives: The course focuses on the introduction of fundamental notions on differential and integral calculus
Course content: Introduction to differential calculus (Fundamental streams; 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 (Right Riemann integral; improper integrals; Integrals with parameters; Curve-linear integrals; Double and triple integrals; Surface integrals).
Teaching language: English
Evaluation: written exam
Bibliography:
Predoi, M., Balan, T. - Mathematical Analysis Vol I. Differential Calculus; Vol II. Integral Calculus, Ed. Universitară, Craiova, 2005
Predoi, M. - Analiza matematica, Ed. Universitară, Craiova, 1994
Predoi, M., Constantinescu, D., Racila, M. - Teme de calcul diferential, Ed.Sitech, Craiova, 2003
Predoi, M., Constantinescu, D., Racila, M. - Teme de calcul integral, Ed.Sitech, Craiova, 2003

LINEAR ALGEBRA AND GEOMETRY

Number of credits: 5
Semester: I
Type of course: fundamental
Course objectives: The aim of the course is the introduction of 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 allow to fix theoretical knowledge and to create calculus control by applications.
Teaching language: English
Evaluation: written exam / on-going examination
Bibliography:
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

COMPUTER PROGRAMMING

Number of credits: 6
Semester: I
Type of course: fundamental
Course objectives: The course overall objective is to provide the students with the knowledge required and to develop elementary programming skills using modern computer programing languages, C-like, such as C, C++, Java.
Teaching language: English
Evaluation: written exam
Bibliography:

GENERAL ELEMENTS

Number of credits: 4
Semester: I
Type of course: fundamental
Course objectives: The course focuses on the review of fundamental knowledge in general physics and applications.

PHYSICS

Subject: General Elements
Number of credits: 4
Semester: I
Type of course: fundamental
Course objectives: The course focuses on the review of fundamental knowledge in general physics and applications.

TEACHING LANGUAGE: English

EVALUATION: written exam

BIBLIOGRAPHY:

E. Luca si colaboratori - Fizica, Editura Didactica si Pedagogica.

I.M. Popescu si colaboratori - Probleme rezolvate de fizica, Editura Tehnica.

M. Puchin - Fizica, Editura Sitech.

SUBJECT OF STUDY : LOGICAL DESIGN OF DIGITAL COMPUTERS

NUMBER OF CREDITS: 5
SEMMESTER: 1
TYPE OF COURSE: domain

COURSE OBJECTIVES: An introductory course on logical design methodology, forming the basis for future stream of hardware disciplines. It is treated extensively the mathematical foundation linked to analysis and synthesis of digital devices - Boolean algebra, Switching functions and forms, Minimization procedures, Canonical forms of representation


TEACHING LANGUAGE: English

EVALUATION: written exam

BIBLIOGRAPHY:
Oleg Cernian, Logical Design of Digital Computers - Fundamentals, SITECH Craiova, 2005


D. Lewin, D. Protheroe, Design of Logic Systems, Chapman & Hall, 1992


M.A. Harrison, Introduction to Switching and Automata Theory, McGraw Hill, 1965

A.D. Friedman, P.R. Menon, Theory and Design of Switching Circuits, Pitman, 1975

J. Hayes, Introduction to Digital Logic Design, Addison - Wesley, 1994


SUBJECT OF STUDY : KNOWLEDGE, HUMAN COMMUNICATION AND INTERNET

NUMBER OF CREDITS: 4
SEMMESTER: 1

TYPE OF COURSE: complementary

COURSE OBJECTIVES: The course is addressed to the first year students and intent to present an introduction to human knowledge, as a concept and application tools in the real life: reading efficiently, writing correctly, intelligent searching information on the Internet; making different documents, etc.

COURSE CONTENT: 1. A study-tour of communication; 2. Internet and Web Searching; 3. FORUM: Community Standards-General Rules; 4. Efficient Reading; 5. Writing Guidelines for Engineering and Science Students

TEACHING LANGUAGE: English

EVALUATION: written exam

BIBLIOGRAPHY:
Writing Guidelines for Engineering and Science Students; http://owl.english.purdue.edu/internet/resources/genre.html;
http://www.usd.edu/trio/tut/excel/10.html;
Tara Kuther, Ph.D., About.com; Prepare Your Curriculum Vitae; http://gradschool.about.com/cs/curriculumvita/a/vitae.htm
PowerPoint 2002 (XP); http://www.gcflearnfree.org/computer/topic.aspx?id=82
Happy Fun Communication Land; TUTORIAL: A STUDY-TOUR OF COMMUNICATION; http://www.rdillman.com/HFCL/TUTOR/tutor0.html

SUBJECT OF STUDY : ENGLISH 1

NUMBER OF CREDITS: 2
SEMMESTER: 1

TYPE OF COURSE: complementary

COURSE OBJECTIVES: The course focuses on teaching the grammatical structures of the English language as well as on the correct using of them in conversation. Also an emphasis will be placed on activating the four main language skills: listening, reading, speaking and writing

COURSE CONTENT: 1. Network and communication; Asking questions (why questions); If clauses; Thematic vocabulary; 2. Databases; Prefixes and suffixes; Describing computer performances; Expressing results; Comparing and contrasting; 3. Artificial intelligence; Synonyms and antonyms; Past tense simple vs. present perfect; Vocabulary practice; 4. Managed and unmanaged endpoints; 5. The degrees of comparison of adjectives and adverbs; Present perfect simple and continuous in use; Gadgets and devices-describing, comparing; 6. Multimedia; The sequence of tenses; The active vs. the passive voice; Vocabulary is use conversation; Explaining and persuading; 7. Future trends in computing; Means of expressing future time; Oral vs. written presentations; Complex noun phrases and the plural of nouns; Synonymy of sentences; Word order: rules and exceptions.

TEACHING LANGUAGE: English

EVALUATION: Colloquia

BIBLIOGRAPHY:

Vince, M, Advanced Language Practice; Macmillan Publishers, 2003;

SUBJECT OF STUDY : SPECIAL MATHEMATICS

NUMBER OF CREDITS: 5
SEMMESTER: 1

TYPE OF COURSE: fundamental
COURSE OBJECTIVES: The course represents several chapters of mathematics in respect to their utility as instruments of investigation in engineering and specific language of the specific matter. The seminar follows the topics of the course.

COURSE CONTENT: 1. Elements of complex analysis; 2. Ordinary Differential Equations; 3. Elements of Fourier Analysis

TEACHING LANGUAGE: English

EVALUATION: written exam

BIBLIOGRAPHY:
Predoi M., Bălan T. Mathematical Analysis, Ed. Universitară, Craiova, 2005
Bălan T., Dăneţ C., Ecuatii diferentiale, Ed. SITECH, Craiova, 2007
Bălan T., Şterbeţî C., Analiză complexă, Ed. MJM, Craiova, 2003
Bălan T., Şterbeţî C., Analiză Fourier, Ed. SITECH, Craiova, 2001
Bălan T., Matematici Speciale, Reprografia Universităţii din Craiova, 1989

SUBJECT OF STUDY : NUMERICAL METHODS

NUMBER OF CREDITS: 4

SEMESTER: II

TYPE OF COURSE: fundamental

COURSE OBJECTIVES: The course is designed to present the main numerical methods and numerical algorithms. It also aims to enhance the ability of analysing different mathematical models in the engineering field, using the numerical techniques and to solve specific problems by turning the numerical methods into programming languages.


TEACHING LANGUAGE: English

EVALUATION: written exam

BIBLIOGRAPHY:
Ebâncă D., Metode numerice in algebră, Editura Sitech, Craiova, 2005.

SUBJECT OF STUDY : INTRODUCTION TO ELECTRICAL ENGINEERING

NUMBER OF CREDITS: 4

SEMESTER: II

TYPE OF COURSE: domain

COURSE OBJECTIVES: The main objective of this discipline is to provide the students with the most important notions on electromagnetic fields and electric circuits (the most important laws and theorems and techniques to solve common problems in various operating regimes). The lab has the role to help students to get practical abilities correlated to the theoretical notions presented at the course.


TEACHING LANGUAGE: English

EVALUATION: written exam

BIBLIOGRAPHY:

SUBJECT OF STUDY : COMPUTER PROGRAMMING – PROGRAMMING TECHNIQUES

NUMBER OF CREDITS: 4

SEMESTER: II

TYPE OF COURSE: fundamental

COURSE OBJECTIVES: The aim of this course is to introduce students to basic algorithms and techniques of their systematic implementation and evaluation using usual programming languages (eg. C).


TEACHING LANGUAGE: English

EVALUATION: written exam

BIBLIOGRAPHY:
SEMESTER: II
TYPE OF COURSE: fundamental

COURSE OBJECTIVES: The project requires the development of a program for evaluation and experimentation with a subclass of algorithms. The focus will be on development of a clean implementation to allow the systematic testing and evaluation of the given algorithms. Special attention will be also given to readability, documentation, portability and robustness of the program.

COURSE CONTENT:
1. Recursive vs. Iterative programming;
2. Searching and sorting (sequential and binary search, selection and insertion sort);
3. Advanced searching (merge sort, quick sort, ...);
4. List;
5. Stacks and queues;
6. Trees;
7. Greedy method;
8. Graphs: representation and traversal;
9. Dynamic programming;
10. Backtracking;
11. Combinatorial algorithms;
12. Files

TEACHING LANGUAGE: English

EVALUATION: project

BIBLIOGRAPHY:

SUBJECT OF STUDY: DIGITAL SYSTEMS DESIGN

NUMBER OF CREDITS: 6

SEMESTER: II

TYPE OF COURSE: domain

COURSE OBJECTIVES: The fundamental mechanisms of designing and implementing digital devices at MSI level: ULMs, extension methods, structured realization of digital networks, programmable logic devices, sequential machines and networks, specification of sequential machines, state reduction, flip-flops, general synthesis procedure, analysis procedure, ASM charts, implementation of ASMs.

COURSE CONTENT:
1. Combinational Logic Networks (CLN);
2. CLN implementation with Programmable Logic Device (PLD);
3. Introduction to Sequential logic Networks;
4. Simplification of Sequential Logic Networks;
5. Sequential Logic Networks with PLDs;
6. Design of digital systems

TEACHING LANGUAGE: English

EVALUATION: written exam

BIBLIOGRAPHY:
A.D. Friedman, P.R. Menon: Theory and Design of Switching Circuits, Pitman, 1975.

SUBJECT OF STUDY: PHYSICS – ELEMENTS OF MECHANICAL ENGINEERING

NUMBER OF CREDITS: 3

SEMESTER: II

TYPE OF COURSE: fundamental

COURSE OBJECTIVES: It is one of fundamental disciplines. The course focuses on the introduction of basic concepts with respect to the problematics of methods used to build mathematic models for the movement of mechanical systems with constant mass and a finite number of freedom degrees. Their analysis is accompanied by calculation examples and applications that reveals the studied methods.

COURSE CONTENT:
1. Slipping vectors’ theory;
2. Geometry of masses;
3. The Kinematics of material points;
4. The Kinematics of rigid solid bodies and of rigid systems;
5. Dynamics

TEACHING LANGUAGE: English

EVALUATION: written exam

BIBLIOGRAPHY:
Cataneanu, A., Mecanica – Culegere de probleme Ed. Universitaria, Craiova, 20025.
Ispas, V., Aplicatile cinematicii in constructia manipulatoarelor si robotilor industrialii, Ed. Academiei Romane, Bucuresti 19908.
Staicu, St., s.a., Probleme de mecanica teoretica. Mecanica analitica, Universitatea Politehnica Bucuresti, 199611.

SUBJECT OF STUDY: ENGLISH 2

NUMBER OF CREDITS: 2

SEMESTER: II

TYPE OF COURSE: complementary

COURSE OBJECTIVES: The course focuses on teaching the grammatical structures of the English language as well as on the correct using of them in conversation. Also an emphasis will be placed on activating the four main language skills: listening, reading, speaking and writing.

COURSE CONTENT:
1. Network and communication;
2. Asking questions (why questions);
3. If clauses; Thematic vocabulary;
4. 2. Databases; Prefixes and suffixes; Describing computer performances; Expressing results; Comparing and contrasting;
5. Artificial intelligence; Synonyms and antonyms; Past tense simple vs. present perfect; Vocabulary practice;
6. Managed and unmanaged endpoints; 5. The degrees of comparison of adjectives and adverbs; Present
perfect simple and continuous in use; Gadgets and devices-describing, comparing; 6. Multimedia: The sequence of tenses; The active vs. the passive voice; Vocabulary is use conversation; Explaining and persuading; 7. Future trends in computing; Means of expressing future time; Oral vs. written presentations; Complex noun phrases and the plural of nouns; Synonymy of sentences; Word order: rules and exceptions.

TEACHING LANGUAGE: English

EVALUATION: Colloquy

BIBLIOGRAPHY:
Vince, M, Advanced Language Practice; Macmillan Publishers, 2003;

ANUL II

SUBJECT OF STUDY: DATA STRUCTURES AND ALGORITHMS

NUMBER OF CREDITS: 4

SEMESTER: I

TYPE OF COURSE: domain

COURSE OBJECTIVES: The main goal of the discipline is the development of skills regarding the design and implementation of various data structures that allow writing performing programs, improving the skills regarding the representation of static objects as well as working with dynamic objects. Another goal is learning how to control the performance of the program against the ratio of consumed memory/execution Speed.


TEACHING LANGUAGE: English

EVALUATION: written exam

BIBLIOGRAPHY:
Burdescu D.D. - Brezovan M - Algoritmi si structuri de date in C si Pascal (indrumar de laborator), Reprografia Universitatii din Craiova, 1995.
Burdescu D. D., Brezovan Marius, Cosuleschi Mirel - Structuri de date arborescente in C si Pascal (indrumar de laborator), Reprografia Universitatii din Craiova, 2000.
Horowitz Ellis - Fundamentals of Data Structures in PASCAL, Computer Science Press 1983

SUBJECT OF STUDY: DATA STRUCTURES AND ALGORITHMS - PROJECT

NUMBER OF CREDITS: 2

SEMESTER: I

TYPE OF COURSE: domain

COURSE OBJECTIVES: The project has the main goal of covering the knowledge accumulated along the semester. The project finalizes as a practical application

COURSE CONTENT: The following operations have to be implemented:
I) Basic operations: 1. Create the structure with input data read from a text file; 2. Insert a new record; 3. Update any field ; 4. Search a record by the key; 5. Delete a record by the key: 6. Display: a.tree fashion - only the keys; b. complete - there are displayed all data in a table
II) Specific operations: 1. Create a tree using other fields from the structure ; 2. Append data from other file; 3. Present reports on stocks using different criteria; 4. Creation of scenarios for testing the correctness of the implemented operations; 5. Save data into a file

TEACHING LANGUAGE: English

EVALUATION: project

BIBLIOGRAPHY:
Burdescu D.D. - Brezovan M - Algoritmi si structuri de date in C si Pascal (indrumar de laborator), Reprografia Universitatii din Craiova, 1995.
Burdescu D. D., Brezovan Marius, Cosuleschi Mirel - Structuri de date arborescente in C si Pascal (indrumar de laborator), Reprografia Universitatii din Craiova, 2000.
Horowitz Ellis - Fundamentals of Data Structures in PASCAL, Computer Science Press 1983

SUBJECT OF STUDY : ELECTRONICS

NUMBER OF CREDITS: 4

SEMESTER: I

TYPE OF COURSE: domain

COURSE OBJECTIVES: The course covers introduction to analysis, design and simulates building blocks and different analogue IC applications. This course involves laboratory practices and home works on experiment modules and extensive use of industry-standard CAD tools, such as Analog Workbench. Using the knowledge gained through Electronics, students will learn how to measure the characteristics of devices and circuits and the building of basic electronic circuits.


TEACHING LANGUAGE: English
EVALUATION: written exam

BIBLIOGRAPHY

BIBLIOGRAPHY
Bennett, S., Linkens, D.D., Computer Control of Industrial Processes, Peter Peregrinus, 82.

SUBJECT OF STUDY: SYSTEMS THEORY AND CONTROL

NUMBER OF CREDITS: 3
SEMESTER: I
TYPE OF COURSE: domain

COURSE OBJECTIVES: This course deals with the fundamental problems of systems theory, both continuous-time and discrete-time. There are presented theoretical and practical methods regarding analysis, design and implementation of control systems.

COURSE CONTENT: 1. Description and general properties of systems. Introduction: Abstract systems; Oriented systems; 2. Linear time-invariant systems (LTIS); 3. Discrete time systems (DTS); 4. Nonlinear dynamical systems; 5. Control systems; 6. Special topics on systems theory. Time variable linear systems. Distributed parameters systems. Optimal control systems. Stochastic control systems. Intelligent control systems. Fuzzy logic and neural network based control

TEACHING LANGUAGE: English
EVALUATION: written exam

SUBJECT OF STUDY: OBJECT ORIENTED PROGRAMMING

NUMBER OF CREDITS: 4
TYPE OF COURSE: domain

COURSE OBJECTIVES: The objectives of the course are to introduce the main concepts of the object-oriented paradigm, and also to introduce the main characteristics and principles of the C++ language. The objectives for the applications are to allow students to use the Visual C++ integrated framework in order to write small and medium software applications.


TEACHING LANGUAGE: English
EVALUATION: written exam

xxx MCS - 80 Users Manual Santa Clara, INTEL Corporation, 1977
BIBLIOGRAPHY:
Thinking in C++, Bruce Eckel, Prentice Hall, 2000 (electronic free)
The C++ Programming Language, Bjarne Stroustrup, Addison-Wesley, 1997
Effective C++, Scott Meyers, Addison-Wesley, 1996
C++ Primer, Stanley Lippman, Josee Lajoie, Addison-Wesley, 1998
Andrei Alexandrescu, Programarea moderna in C++, Programare generica si modele de proiectare aplicate, Teora, 2002

SUBJECT OF STUDY: OBJECT ORIENTED PROGRAMMING - PROJECT

NUMBER OF CREDITS: 2
SEMESTER: I
TYPE OF COURSE: domain

COURSE OBJECTIVES: The objectives of the course are to introduce the main concepts of the object-oriented paradigm, and also to introduce the main characteristics and principles of the C++ language. The objectives for the applications are to allow students to write software programs using C++ as the first object-oriented language, and also to allow students to use the Visual C++ integrated framework in order to write small and medium software applications.


TEACHING LANGUAGE: English

EVALUATION: project

BIBLIOGRAPHY:
Thinking in C++, Bruce Eckel, Prentice Hall, 2000 (electronic free)
The C++ Programming Language, Bjarne Stroustrup, Addison-Wesley, 1997
Effective C++, Scott Meyers, Addison-Wesley, 1996
C++ Primer, Stanley Lippman, Josee Lajoie, Addison-Wesley, 1998
Andrei Alexandrescu, Programarea moderna in C++, Programare generica si modele de proiectare aplicate, Teora, 2002

SUBJECT OF STUDY: PROJECT MANAGEMENT

NUMBER OF CREDITS: 4
SEMESTER: I
TYPE OF COURSE: complementary

COURSE OBJECTIVES: Introduction of notions from the „body of knowledge” corresponding to Projects Management; Understanding of the differences between „program” and „software program” notions; Presentation of the general concepts „team work” and „team building”; Acquiring of the required managerial knowledge: Introduction of ethic and professional themes in software engineering; familiarization with traditional and modern work practices; Establishing of the required abilities directly related to other specialty disciplines


TEACHING LANGUAGE: English

EVALUATION: written exam

BIBLIOGRAPHY:
Guide to the Project Management Body of Knowledge, 2004 (PMBOK)
Roberson, S. and Robertson, R., Managing Requirements, Addison-Wesley, 1999
Beck, K., Extreme Programming Explained, Addison-Wesley, 1999
Mocanu M., Managementul proiectelor (curs)
Sommerville I., Software Engineering, 7th Ed., Pearson – Addison Wesley, 2004
Erich Gamma, Richard Helm, Ralph Johnson, John Vlissides – Design Patterns: Elements of Reusable Object-Oriented Software, Addison Wesley, 1996
Sinan Si Alhir - Learning UML, O’Reilly, 2003
Tom Pender - UML Bible, John Wiley & Sons, 2003
Joseph Schmuller - Teach Yourself UML in 24 Hours, Sams Publ. 2004

SUBJECT OF STUDY: ENGLISH 1

NUMBER OF CREDITS: 2
SEMESTER: I
TYPE OF COURSE: complementary

COURSE OBJECTIVES: The course focuses on Teaching the grammatical structures of the English language as well as on the correct using of them in conversation. Also an emphasis will be placed on activating the four main language skills: listening, reading, speaking and writing.

COURSE CONTENT: 1. Network and communication; Asking questions (why questions); If clauses; Thematic vocabulary; 2. Databases; Prefixes and suffixes; Describing computer performances; Expressing results; Comparing and contrasting; 3. Artificial intelligence; Synonyms and antonyms; Past tense simple vs. present perfect; Vocabulary practice; 4. Managed and unmanaged endpoints; 5. The degrees of comparison of adjectives and adverbs; Present perfect simple and continuous in use; Gadgets and devices-describing, comparing; 6. Multimedia; The sequence of
tenses; The active vs. the passive voice; Vocabulary is use conversation; Explaining and persuading; 7. Future trends in computing; Means of expressing future time; Oral vs. written presentations; Complex noun phrases and the plural of nouns; Synonymy of sentences; Word order: rules and exceptions.

**TEACHING LANGUAGE:** English

**EVALUATION:** colloquy

**BIBLIOGRAPHY:**
- Data Structures and Algorithms, Cormen, T.; Leiserson, C.; Rivest, R. Prentice Hall, 1994;
- Theory of Complexity, Prentice Hall 1994;
- Artificial Intelligence: A Logical Approach, Benjamin Cummings; Publishing Company 1992;
- Graphics: Principles and Practice – Addison Wesley, 1993

**COURSE OBJECTIVES:** The aim of this course is to introduce students to the concepts and methods of artificial intelligence with a focus on representation and reasoning in classical logic. The course will cover an introduction to logic programming with Prolog. The objectives of the course are: 1. To introduce students to the concepts and methods of artificial intelligence with a focus on representation and reasoning; 2. To introduce students to logic and logic programming with Prolog. The laboratory will allow students to program and experiment with Prolog programs and understand basic reasoning methods. The assignment requires the development.


**TEACHING LANGUAGE:** English

**EVALUATION:** written exam

**BIBLIOGRAPHY:**

**SUBJECT OF STUDY:** ARTIFICIAL INTELLIGENCE

| NUMBER OF CREDITS: 4 |
| SEMESTRE: II |
| TYPE OF COURSE: specialization |

**COURSE OBJECTIVES:** The course is meant to introduce the basic concepts regarding computer graphics, fundamental transformations, and the structure of a graphics engine and the operations that take place in this engine. The laboratory has the purpose of putting into practice the studied information and implement them in C++.


**TEACHING LANGUAGE:** English

**EVALUATION:** written exam

**BIBLIOGRAPHY:**

**SUBJECT OF STUDY:** ASSEMBLY PROGRAMMING LANGUAGES

| NUMBER OF CREDITS: 4 |
| SEMESTRE: II |
| TYPE OF COURSE: fundamental |

**COURSE OBJECTIVES:** The course is meant to introduce the instruction set architecture of Intel 80x86
microprocessors and the basic concepts of assembly language programming. The laboratory will give students the opportunity to practically improve their assembly language programming skills.


**TEACHING LANGUAGE**: English

**ÉVALUATION**: written exam

**BIBLIOGRAPHY**:
- K.A. Lemone, "Assembly Language and Systems Programming for the IBM PC and Compatibles", Little Brown & Company Canada Limited
- D. Somnea, I. Vlădut, "Programarea in Assembler", Ed. Tehnica, 1992
- Gh. Marian, M. Marian, E. Dumitrescu, N. Enescu – Limba de asamblare – ghid

**SUBJECT OF STUDY: MEASUREMENTS TECHNIQUES**

**NUMBER OF CREDITS**: 4

**SEMESTER**: II

**TYPE OF COURSE**: domain

**COURSE OBJECTIVES**: The course presents specific matters related to fundamentals of the numerical techniques used to evaluate the physical quantities and the virtual instrumentation elements.


**TEACHING LANGUAGE**: English

**ÉVALUATION**: written exam

**BIBLIOGRAPHY**:
- F. Coulon, Théorie et traitement des signaux, P.P. Romanes, ´90

**SUBJECT OF STUDY: GENERAL ECONOMICS AND ACCOUNTING**

**NUMBER OF CREDITS**: 3

**SEMESTER**: II

**TYPE OF COURSE**: complementary

**COURSE OBJECTIVES**: The appropriation, by the students of the fundamental notions in the field of accountancy, the knowledge and the understanding of the procedures specific to the accountancy method; The understanding of the terminology specific to the financial-accounting field; The formation of a logical thinking in what concerns the transposition in accountancy language of the main economical-financial operations that generates the activity developed by the economical agents; The understanding of the methodology and the work technique specific to accountancy.


**TEACHING LANGUAGE**: English

**ÉVALUATION**: written exam

**BIBLIOGRAPHY**:
- Sandu Maria (coordonator) – Bazele contabilității, Editura Scrisul Românesc, Craiova, 2005.
- Epuran M., Babai_a V. - Teoria generala a contabilitatii, Editia a IIa, Editura Mitron, 2002.

**SUBJECT OF STUDY: ENGLISH 2**

**NUMBER OF CREDITS**: 2

**SEMESTRE**: II

**TYPE OF COURSE**: complementary

**COURSE OBJECTIVES**: The course focuses on Teaching the grammatical structures of the English language as well as on the correct using of them in conversation. Also an emphasis will be placed on activating the four main language skills: listening, reading, speaking and writing.

**COURSE CONTENT**: 1. Network and communication; Asking questions (why questions); If clauses; Thematic vocabulary; 2. Databases; Prefixes and suffixes; Describing computer performances; Expressing results; Comparing and contrasting; 3. Artificial intelligence; Synonyms and antonyms; Past tense simple vs. present perfect; Vocabulary practice; 4. Managed and unmanaged endpoints; 5. The degrees of comparison of adjectives and adverbs; Present perfect simple and continuous in use; Gadgets and devices-describing, comparing; 6. Multimedia; The sequence of tenses; The active vs. the passive voice; Vocabulary is use conversation; Explaining and persuading; 7. Future trends in computing; Means of expressing future time; Oral vs. written presentations; Complex noun phrases and the plural of nouns; Synonymy of sentences; Word order: rules and exceptions.

**TEACHING LANGUAGE**: English

**ÉVALUATION**: colloquy

**BIBLIOGRAPHY**:
- Vince, M, Advanced Language Practice; Macmillan Publishers, 2003;
SUBJECT OF STUDY: PRACTICAL TRAINING

NUMBER OF CREDITS: 2
SEMESTER: II
TYPE OF COURSE: domain

COURSE OBJECTIVES: Familiarizing the student with the programming algorithms and techniques that are used for the concrete development of a software application. The practice will be done either inside the research centre "Development of Multimedia Applications" of the department of Software Engineering, either inside a software oriented company, with which the faculty has established a contract for realizing the training.

COURSE CONTENT: 1. Introductive elements concerning the object oriented programming; 2. Data structures; 3. Essential elements about the object oriented programming; 4. Advanced notions of object oriented programming; 5. Software applications design using the UML formalism; 6. Project management

TEACHING LANGUAGE: English
EVALUATION: coloquy
BIBLIOGRAPHY: N/A.

ANUL III

SUBJECT OF STUDY: DIGITAL INTEGRATED CIRCUITS

NUMBER OF CREDITS: 4
SEMESTER: I
TYPE OF COURSE: domain

COURSE OBJECTIVES: It is one of the domain disciplines in the study schedule. The aim of the course is the knowledge assimilation that students need in understanding the operation of the basic types of digital integrated circuits as well as the analysis and synthesis of logical combinational and sequential circuits methods. The laboratory hours allow the consolidation of the theoretical notions and the achievement within the practice concerning digital circuits designing and using.


TEACHING LANGUAGE: English
EVALUATION: written exam
BIBLIOGRAPHY:
Filipescu, V., Circuite electronice digitale, Editura UNIVERSITARIA Craiova, 2002;
Filipescu, V., Garaiman, D., Circuite electronice digitale – Indrumar de laborator, Reprografia Universitatii din Craiova, 1997;
Maican, S., Sisteme numerice cu circuite integrate - culegere de probleme, Editura TEHNICA, Buc., 1980;
Millman, J., Grabel, A., Microelectronice, McGraw-Hill, 1991;
Stefan, Gh., Circuite integrate digitale, Editura DENIX, Bucuresti, 1993;
Sztajanov, I., s.a., De la poarta TTL la microprocesor, Seria Electronica aplicata, Editura TEHNICA, Buc., 1987;
Toacse, Gh., Nicula, D., Electronica digitala, Editura TEORA, 1996;

SUBJECT OF STUDY: DATABASES

NUMBER OF CREDITS: 5

SEMESTER: I
TYPE OF COURSE: domain

COURSE OBJECTIVES: The course introduces fundamental topics in the field of databases: users, data models, entity-relationship model, relational model, relational algebra, file and index organization, distributed databases concepts. The labs consolidate the theoretical concepts and create working skills in MS Access 2000 and MS SQL Server 2000.


TEACHING LANGUAGE: English
EVALUATION: written exam
BIBLIOGRAPHY:
Baze de date, Burdescu D., Ionescu A., Stanescu L., Editura Universitaria, Craiova, 2004
Ghid pentru lucrari de laborator la baze de date, Ionescu A., Tipografia Universitati din Craiova, 2004

SUBJECT OF STUDY: OPERATING SYSTEMS

NUMBER OF CREDITS: 5
SEMESTER: I
TYPE OF COURSE: domain

COURSE OBJECTIVES: It is one of the so called "disciplines in domain" from the curricula corresponding to this license domain. In the first Chapters one presents the primary notions and the classifications of operating systems along with the describing of the main architectural types. Afterward one introduces the most important concepts corresponding to the processes and threads management. Then one treats the problematic of memory management and of the most important aspects of the input-output operations. In the end one presents the fundamental notions corresponding to files' management. The laboratory is meant to help the understanding of knowledge on operating with Linux and on working with threads/processes and pipes in Linux. In the second part the students will study some aspects concerning the work with the memory manager, with the I/O system, with file systems and files and with the registry in Windows. At the seminar one toggles with the case studies Windows/Linux corresponding to the notions presented at the course classes.


TEACHING LANGUAGE: English
EVALUATION: written exam
BIBLIOGRAPHY:
Bovet, D., Cesati, M., Understanding the Linux kernel, 2-ned Ed., O'Reilly, 2003

SUBJECT OF STUDY: DATA COMMUNICATION
NUMBER OF CREDITS: 5
SEMESTER: I
TYPE OF COURSE: domain
COURSE OBJECTIVES: It is one of the specialty disciplines. The course focuses on the introduction of basic concepts concerning data communication matters. One presents the communication environment, serial interfaces, and communication protocols at the level Data Link. The course presents the necessary basic skills for the upcoming courses of Computer Networks and Computer Networks Management. The laboratory is meant to consolidate the theoretical knowledge and to create abilities in what is concerning the serial interfaces programming through practical applications, exercises and problems.
COURSE CONTENT: 1. Distributed systems architecture; 2. Electrical interface; 3. Data transmission; 4. Communication protocols at the level at data link; 5. ieee 802.3 csma/cd
TEACHING LANGUAGE: English
EVALUATION: written exam
BIBLIOGRAPHY:
Cooper, E. (1986), Broadband Network Technology, Sytek-Prentice-Hall
Halsall, F. (1988), Data Communications, Computer Networks and OSI, Addison-Wesley
IEEE (1985), Logical Link Control – IEEE 802.2

SUBJECT OF STUDY: COMPUTER STRUCTURE AND ORGANIZATION - PROJECT
NUMBER OF CREDITS: 1
SEMESTER: I
TYPE OF COURSE: domain
COURSE OBJECTIVES: It is envisaged to familiarize students with fundamentals of computer arithmetic, computer organisation, memory and input-output systems, computer system quality evaluation.
COURSE CONTENT: 1. What is verification? ; 2. Verifications tools; 3. The verification plan; 4.Architecting testbenches
TEACHING LANGUAGE: English
EVALUATION: written exam
BIBLIOGRAPHY:

SUBJECT OF STUDY: VISUAL PROGRAMMING ENVIRONMENTS
NUMBER OF CREDITS: 3
SEMESTER: I
TYPE OF COURSE: specialization
COURSE OBJECTIVES: This course introduces the necessary concepts and tools of verification and then it describes a process for planning and carrying out an effective functional verification of a design. It also introduces the concept of coverage models that can be used in a coverage driven verification process.
TEACHING LANGUAGE: English
EVALUATION: written exam
BIBLIOGRAPHY:
SUBJECT OF STUDY: VISUAL PROGRAMMING ENVIRONMENTS - PROJECT

NUMBER OF CREDITS: 1

SEMESTER: I

TYPE OF COURSE: specialization

COURSE OBJECTIVES: This project introduces the necessary concepts and tools of verification and then it describes a process for planning and carrying out an effective functional verification of a design. It also introduces the concept of coverage models that can be used in a coverage driven verification process.

COURSE CONTENT: N/A

TEACHING LANGUAGE: english

EVALUATION: project

BIBLIOGRAPHY:

XILINX Corp. – VHDL Reference Guide
XILINX Corp. – SPARTAN Family Reference Guide

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SUBJECT OF STUDY: COMPUTER NETWORKS

NUMBER OF CREDITS: 5

SEMESTER: II

TYPE OF COURSE: domain

COURSE OBJECTIVES: The main goal of the course „Computer Networks” is to introduce the basic terminology and concepts in networking: these range from simple, limited streams of bits used to ferry data from a sender to a receiver, to various schemes for identifying, addressing, routing, and handling messages as they travel across various types of networking media. Likewise, protocols also play a crucial role in data transmission across a network. The laboratory activities give to the students the real feeling of the network applications.


TEACHING LANGUAGE: English

EVALUATION: written exam

BIBLIOGRAPHY:
Marin Lungu – Retele de Calculatoare si Aplicatiile, Editura Universitaria, 2002
Ed Tittel; Theory and Problems of Computer Networking; McGRAW-HILL, 2002
http://www.packetizer.com
http://msdn.microsoft.com
Cisco Systems; “Technology Brief Introduction to Gigabit Ethernet”
Tim Donaldson: “A Comparative Analysis of High-Speed Switching for Backbone LANs: Fast Ethernet, FDDI, and Fibre Channel; Ancor Communications.

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SUBJECT OF STUDY: DATABASE DESIGN - PROJECT

NUMBER OF CREDITS: 1

SEMESTER: II

TYPE OF COURSE: specialization

COURSE OBJECTIVES: The project assumes the design of a complex database and its implementation using Oracle DBMS. As a result, the students get the practical skills in the field of database design.

COURSE CONTENT: 1. Design the Entity-connection model; 2. Design the associated relational model; 3. The database should include: primary and foreign keys, Update/ delete on cascade rules; 4. Verify the quality of the database using normal forms; 5. Create an index for the database; 6. Implement a series of operations (queries, a function, a procedure) The database and the operations will be implemented in Oracle.

TEACHING LANGUAGE: English

EVALUATION: project

BIBLIOGRAPHY:
Baze de date, Burdescu D., Ionescu A., Stancescu L., Editura Universitaria, Craiova, 2004
Ghid pentru lucrari de laborator la baze de date, Ionescu A., Tipografia Universitati din Craiova, 2004

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SUBJECT OF STUDY: DATABASE DESIGN

NUMBER OF CREDITS: 4

SEMESTER: II

TYPE OF COURSE: specialization

COURSE OBJECTIVES: The course introduces fundamental topics in the field of databases design: the enhanced entity-relationship model, EER-relational mapping, the theory of normalization and transactions processing concepts. The labs consolidate the theoretical concepts and create working skills in Oracle DBMS.


TEACHING LANGUAGE: English

FORMA DE EVALUATION: written exam

BIBLIOGRAPHY:
Baze de date, Burdescu D., Ionescu A., Stancescu L., Editura Universitaria, Craiova, 2004
Ghid pentru lucrari de laborator la baze de date, Ionescu A., Tipografia Universitati din Craiova, 2004

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XILINX Corp. – VHDL Reference Guide
XILINX Corp. – SPARTAN Family Reference Guide

Lance Spitzner; “Configuring Network Interface Cards”, August, 1999
http://www.enteract.com/~lspit/pubs.html
Laura Cohen:"Understanding the World Wide Web"; University of Albany; http://www.albany.edu/library/
COURSE OBJECTIVES: The project will allow students to design and implement distributed applications for computer networks. The project concerns the development of a distributed application according to a given set of specifications. This requires utilization of middleware software technologies for distributed systems that were presented during the lectures and that were experimented in the lab.


TEACHING LANGUAGE: English

EVALUATION: project

BIBLIOGRAPHY:

COURSE OBJECTIVES: The project will allow students to design and implement distributed applications for computer networks. The project concerns the development of a distributed application according to a given set of specifications. This requires utilization of middleware software technologies for distributed systems that were presented during the lectures and that were experimented in the lab.


TEACHING LANGUAGE: English

EVALUATION: project

BIBLIOGRAPHY:
program a peripheral equipment and to design interfaces for various IO systems.


**TEACHING LANGUAGE:** English

**EVALUATION:** written exam

**BIBLIOGRAPHY**:

- Scott Mueller, Craig Zacker: PC - depanare si modernizare, editia a IV-a, Editura Teora 2005
- Constantin Patrascu - Sisteme de intrare-iesire, Universitatea din Craiova 1996
- Constantin Patrascu - Echipamente periferice, Editura Sitech, 2006

**SUBJECT OF STUDY:** SOFTWARE ENGINEERING

**NUMBER OF CREDITS:** 3

**SEMESTER:** II

**TYPE OF COURSE:** domain

**COURSE OBJECTIVES:** The main objective of the course is to introduce students to the concepts and techniques required to build large software systems. The main objective for applications is to provide an opportunity to obtain practical experience applying the techniques on an actual development effort.

**COURSE CONTENT:** 1. Introduction to Software Engineering; 2. Requirements engineering; 3. Development of software systems; 4. Verification and validation of software systems; 5. Evolution of software systems

**TEACHING LANGUAGE:** English

**EVALUATION:** written exam

**BIBLIOGRAPHY**:


**PROJECT**

**NUMBER OF CREDITS:** 2

**SEMESTER:** II

**TYPE OF COURSE:** domain

**COURSE OBJECTIVES:** The main objective of the course is to introduce students to the concepts and techniques required to build large software systems. The main objective for applications is to provide an opportunity to obtain practical experience applying the techniques on an actual development effort.

**COURSE CONTENT:** N/A

**TEACHING LANGUAGE:** English

**EVALUATION:** project

**BIBLIOGRAPHY**:


**SUBJECT OF STUDY:** COMPUTER SYSTEMS MODELLING

**NUMBER OF CREDITS:** 3

**SEMESTER:** II

**TYPE OF COURSE:** domain

**COURSE OBJECTIVES:** 1. Introducing the basic concepts for modeling and discrete simulation; 2. Learning the analytical methods for modeling systems with waiting queues and networks of queues; 3. Introducing of techniques for the modeling, simulation and performances analysis at systems with complex discrete events; 4. Identification of possibilities and limits of mathematic models, their extension through simulation; 5. Using of packages and libraries of specialized programs for modeling and simulation; 6. Developing the abilities for the modeling/simulation of a system through exercises and problems, realization of a small project; 7. Students familiarization with the traditional and modern working practices; 8. Establishing of the required abilities directly related to other specialty disciplines.

**COURSE CONTENT:** 1. Introduction. Dynamic discrete systems (with events); 2. Systemic models for dynamic discrete systems (with events); 3. Operational models for dynamic discrete systems (with events); 4. Simulation of dynamic discrete systems (with events); 5. Specialized instruments (systems of programs) for discrete modeling and simulation

**TEACHING LANGUAGE:** English

**EVALUATION:** written exam

**BIBLIOGRAPHY**:

- Mocanu M., Principii, concepte și instrumente de modelare și simulare în studiul sistemelor dinamice discrete, Ed. Sitech, 2004
- Bertsekas D., Gallager R., Data Networks, Prentice-Hall, 1989
- Dodescu Gh., Simularea sistemelor, Ed. Militara, 1986
- Raduceanu E., Limbaje de simulare, Ed. Militara, 1981
- Mihoc Gh., Ciucu G., Introducere in teoria asteptarii, Ed. Tehnica, 1967
- Mihoc Gh., Ciucu G., Muja A., Modele matematice ale asteptarii, Editura Academiei, Bucuresti, 1973
- Mihoc Gh., Mucu N., Teoria probabilitatilor si statistica matematica, E.D.P., Bucuresti, 1980
- Ho Y.C. (Ed.), Proceedings IEEE 77-1 (Special Issue on Dynamics of Discrete Event Systems), 1989

**PROJECT**

**NUMBER OF CREDITS:** 4

**SEMESTER:** II

**TYPE OF COURSE:** domain
COURSE OBJECTIVES: Familiarizing the student with the programming algorithms and techniques that are used for the concrete development of a software application. The practice will be done either inside the research centre of the department of Computer Engineering, either inside a software oriented company, with which the faculty has established a contract for realizing the training.

COURSE CONTENT: 1. Computer Networks (40 hours); 2. Database Design (40 hours); 3. Operating Systems (40 hours)

TEACHING LANGUAGE: English

BIBLIOGRAPHY: N/A
NUMBER OF CREDITS: 4
SEMESTER: I
TYPE OF COURSE: specialization
COURSE OBJECTIVES: The aim of this course is to introduce students to the basic elements for creation of e-commerce applications, including concepts, techniques, algorithms and technologies. The laboratory work concerns the experimentation with various e-commerce technologies and techniques that are needed for the development of a sample e-commerce application.


TEACHING LANGUAGE: English
EVALUATION: written exam

BIBLIOGRAPHY:
- Maria Fasli, Agent Technology for E-Commerce, Wiley, 2007

SUBJECT OF STUDY: E-COMMERCE-PROJECT

NUMBER OF CREDITS: 1
SEMESTER: I
TYPE OF COURSE: specialization
COURSE OBJECTIVES: The project concerns the development of an e-commerce application starting according to a given set of specifications. This requires utilization of concepts and software technologies that were presented during the lectures and that were experimentally introduced in the lab.


TEACHING LANGUAGE: English
EVALUATION: project

BIBLIOGRAPHY:
- Maria Fasli, Agent Technology for E-Commerce, Wiley, 2007

SUBJECT OF STUDY: WEB APPLICATIONS' DESIGN - PROJECT

NUMBER OF CREDITS: 4
SEMESTER: I
TYPE OF COURSE: specialization
COURSE OBJECTIVES: The course covers aspects related to Web application architecture, Web application modelling, Web engineering, semantic and participative Web. The laboratory sessions and the project themes deal with Java-based Web technologies and frameworks.


TEACHING LANGUAGE: English
EVALUATION: project

BIBLIOGRAPHY:
- Gerti Kappel, Birgit Pröll, Siegfried Reich, Werner Retschitzegger (Eds.): Web engineering: the discipline of systematic development of web applications. Wiley, 2008 (main textbook)

- Maria Fasli, Agent Technology for E-Commerce, Wiley, 2007


- Maria Fasli, Agent Technology for E-Commerce, Wiley, 2007
SUBJECT OF STUDY: DATA SECURITY

NUMBER OF CREDITS: 4

SEMIESTER: I

TYPE OF COURSE: specialization

COURSE OBJECTIVES: The course is meant to introduce concepts of information security. The laboratory will give students the opportunity to practically improve their programming skills from a security point of view and also to apprehend the importance of security in internetworked environments.


TEACHING LANGUAGE: English

EVALUATION: written exam/ practical test

BIBLIOGRAPHY:


SUBJECT OF STUDY: DATA SECURITY - PROJECT

NUMBER OF CREDITS: 1

SEMIESTER: I

TYPE OF COURSE: specialization

COURSE OBJECTIVES: The project is meant to introduce the concepts of information security. The laboratory will give students the opportunity to practically improve their programming skills from a security point of view and also to apprehend the importance of security in internetworked environments.


TEACHING LANGUAGE: English

EVALUATION: project

BIBLIOGRAPHY:


SUBJECT OF STUDY: MODELS AND ALGORITHMS FOR PARALLEL COMPUTING

NUMBER OF CREDITS: 4

SEMIESTER: I

TYPE OF COURSE: specialization

COURSE OBJECTIVES: The students will learn a hardware description language and its usage in order to implement in a FPGA most of the classic logic blocks.


TEACHING LANGUAGE: English

EVALUATION: practical test

BIBLIOGRAPHY:


Skahill K. – VHDL for programmable logic, Addison-Wesley, 1996

XILINX Corp. – VHDL Reference Guide

XILINX Corp. – SPARTAN Family Reference Guide

SUBJECT OF STUDY: FRAMEWORKS FOR DIGITAL SYSTEMS DEVELOPMENT

NUMBER OF CREDITS: 5

SEMIESTER: I

TYPE OF COURSE: specialization

COURSE OBJECTIVES: The students will learn a hardware description language and its usage in order to implement in a FPGA most of the classic logic blocks.


TEACHING LANGUAGE: English

EVALUATION: practical test

BIBLIOGRAPHY:


Skahill K. – VHDL for programmable logic, Addison-Wesley, 1996

XILINX Corp. – VHDL Reference Guide

XILINX Corp. – SPARTAN Family Reference Guide
SUBJECT OF STUDY: MODELS AND ALGORITHMS FOR PARALLEL COMPUTING - PROJECT

NUMBER OF CREDITS: 1
SEMESTER: I
TYPE OF COURSE: specialization

COURSE OBJECTIVES: Basic objectives of this course include, but are not limited, to the following: 1. To introduce the basic models of parallel computing; 2. To enable the student to apply a systematic methodology for designing parallel algorithms; 3. To provide the student basic knowledge for the analysis of parallel algorithms; 4. To enable the student to efficiently use the parallel constructs of parallel programming languages.


TEACHING LANGUAGE: English

EVALUATION

BIBLIOGRAPHY:
[A] V. Kumar, A. Grama, A. Gupta, G. Karypis - Introduction to Parallel Computing Benjamin/Cummings 2003
[D] M.Mocanu, Parallel Processing Algorithms and Languages (textbook, Reprografia Univ. Craiova, 1995)
[H] JaJa J., An Introduction to Parallel Algorithms (Addison Wesley, 1992)
[I] Mocanu et al. - Laboratories for Parallel Computing, Jones and Bartlett, 1994

SUBJECT OF STUDY: PRACTICAL STAGE FOR GRADUATION PROJECT

NUMBER OF CREDITS: 6
SEMESTER: I
TYPE OF COURSE: specialization

COURSE OBJECTIVES

TEACHING LANGUAGE: English

EVALUATION: Colloquy

BIBLIOGRAPHY:

SUBJECT OF STUDY: EMBEDDED SYSTEMS

NUMBER OF CREDITS: 4
SEMESTER: II
TYPE OF COURSE: specialization

COURSE OBJECTIVES: The primary goal of this course is to meet the student with basic information for the design and software development for embedded systems. At the conclusion of the course and laboratory, the student will have the knowledge and skills necessary to develop software for embedded systems, using technical specifications as well as specific methods of design and programming languages.

COURSE CONTENT: 1. Introduction; 2. Specifications ES; 3. Embedded Operating Systems, Middleware and Scheduling

TEACHING LANGUAGE: English

EVALUATION: written exam

BIBLIOGRAPHY:

http://www.agilemodeling.com

SUBJECT OF STUDY: FORMAL LANGUAGES AND AUTOMATA

NUMBER OF CREDITS: 1
**SUBJECT OF STUDY: DSP IN COMMUNICATION**

**NUMBER OF CREDITS: 5**  
**SEMESTER: II**  
**TYPE OF COURSE: specialization**  
**COURSE OBJECTIVES:** The main goal of the discipline is development of skills regarding the architecture of a signal processor, implementation of signal processing algorithms, using of the DSP based equipment in communications.  
**COURSE CONTENT:**  
1. Digital signal processing; 2. Filtering; 3. Transforming signals into the frequency domain; 4. Encoding of Waveforms; 5. Design of DSP systems;  
**TEACHING LANGUAGE:** English  
**EVALUATION:** written exam  
**BIBLIOGRAPHY:**  
Grosu, M., Sisteme de calcul timp-real - note de curs, an IV C/CE  
http://www.agilemodeling.com

**SUBJECT OF STUDY: HIGH SPEED NETWORKS**

**NUMBER OF CREDITS: 5**  
**SEMESTER: II**  
**TYPE OF COURSE: specialization**  
**COURSE OBJECTIVES:** The course will cover topics from current research literature in networking, with emphasis on switching and traffic management. It will also introduce the new developments in modern networking systems, multimedia communications and high speed networks.  
**COURSE CONTENT:**  
**TEACHING LANGUAGE:** English  
**EVALUATION:** written exam  
**BIBLIOGRAPHY:**  
Gallo & Hancock – Computer Comm. And networking Technologies, Thomson Learning,2001  

**SUBJECT OF STUDY: INFORMATION SYSTEMS MANAGEMENT**

**NUMBER OF CREDITS: 4**  
**SEMESTER: II**  
**TYPE OF COURSE: specialization**  
**COURSE OBJECTIVES:** The course toggles with the most significant aspects of the informational technology management and of data security at informational system level. A special attention is payed to the complex storage technologies and to the standards that are widely used today for the informational systems management. One also presents the most relevant aspects concerning the computational techniques and resources management using grid technologies. The laboratory thematic focusses on the workstations and systems management at local level, on the study of various scenarios for data security providing in information systems and on applications for SAN and grid management.  
**COURSE CONTENT:**  
**TEACHING LANGUAGE:** English  
**EVALUATION:** written exam  
**BIBLIOGRAPHY:**  
http://www.microsoft.com/windowsserversystem/storage/sim plesan.mspx (Solutii Microsoft pentru SAN) 2005  
http://www.microsoft.com/downloads/details.aspx?FamilyID=4cd29b01-eed8-45f5-ab1e-e51e1ae7b22&DisplayLang=en (White papers pentru securitate)

ICT Infrastructure Management, ed.. itSMF SUA, 2002  
Security Management, ed.. itSMF SUA, 2002  
Introduction to ITIL, ed. itSMF SUA, 2005  
http://www.disasterrecoveryworld.com/  
http://www.intel.com/design/servers/ipmi/ipmi.htm
The main objective of the course is to introduce the students the specific notions and techniques concerning compilers and compiler design stages. The objective of applications is to enable the students to implement some translators for small languages.
structures, indexing, employed algorithms and evaluation techniques.

COURSE CONTENT: 1. Introduction to informations storage and retrieval systems; 2. Introduction to data structures and algorithms related to information retrieval; 3. Inverted files; 4. Information retrieval using the Boolean model; 5. Index construction; 6. Modifications and enhancements to the basic indexing and search processes; 7. Vector space retrieval; 8. Evaluation in information retrieval

TEACHING LANGUAGE: English

EVALUATION: written exam

BIBLIOGRAPHY:
Hastie, Trevor, Robert Tibshirani, and Jerome H. Friedman. 2001. The Elements of Statistical Learning: Data Mining, Inference, and Prediction. New York: Springer-Verlag

SUBJECT OF STUDY: MULTIMEDIA APPLICATION DEVELOPMENT

NUMBER OF CREDITS: 5
SEMESTER: II
TYPE OF COURSE: specialization

COURSE OBJECTIVES: The course introduces basic concepts in multimedia field: multimedia technologies, multimedia data types (image, sound, video), compression algorithms, specific methods for multimedia data querying and two important multimedia applications: for e-learning and on multimedia databases. The lab presents the working way in some very popular authoring tools (Flash, Fireworks). During the labs and with homeworks the students must design and implement multimedia applications that combine all multimedia data types using the presented authoring tools.


TEACHING LANGUAGE: English

EVALUATION: written exam/practical test

BIBLIOGRAPHY:
Baze de date multimedia-studiu asupra unor metode de regasire a informatiei vizuale, Liana Stanescu, Ed. Universitaria 2004
Multimedia Systems and Content-Based Retrieval, Sagarmay Deb, , Idea Group Publishing, 2004
Multimedia Applications, Ralf Steinmetz, Klara Nahrstedt, Springer, 2004
Macromedia Flash 5, Phillip Kerman, Ed. Teora 2004

Decan,
Prof.dr. ing. Eugen BOBAȘU