

ROMANIAN-AMERICAN  
UNIVERSITY



2024-2025

STUDY GUIDE

Study program: BA in

**Computer Science for Economics**



**YOUR CHOICE, YOUR FUTURE,  
CHOOSE TO BE THE BEST!**



## SCHOOL OF COMPUTER SCIENCE FOR BUSINESS MANAGEMENT



### STUDY GUIDE 2024 - 2025

### Bachelor's Study Program: COMPUTER SCIENCE FOR ECONOMICS

**Bucharest, Romania**



## PART I:

### ROMANIAN-AMERICAN UNIVERSITY OVERVIEW

**The Romanian-American University (RAU) is a higher education institution, a legal person of private law and public utility, part of the national system of education, founded in 1991, accredited by law in 2002, receiving the qualification “High confidence rating” from ARACIS (Romanian Agency for Quality Assurance in Higher Education) since 2010, whose mission is to offer high quality education and research, in an intellectually stimulating environment both for students and for the teaching staff. All bachelor and master studies programs, offered by the seven schools of RAU (Computer Science for Business Management; Domestic and International Business, Banking and Finance; Domestic and International Tourism Economics; European Economic Studies; Management-Marketing; Law; Physical Education, Sport and Kinesiotherapy) are accredited and ranked by the national Ministry of Education among the first categories since 2011.**

The **mission** of the Romanian-American University consists in education, teaching, scientific research and innovation, the cultivation of scientific values and of universal culture in general, especially in the fields of economics, law, and sport.

Through its mission, the university means to contribute to:

- the promotion of excellence in education, scientific research, innovation, and technological transfer, as well as of professional, moral and social responsibility and of creativity in the fields of competence.
- the treasuring and promotion of values of national and universal culture and civilization.
- the defense of an academic democratic framework based on university autonomy and respect for the law, on the fundamental human rights and liberties in the state of law.

According to the Charta, the fulfilment of the mission of the Romanian-American University may be achieved through:

- the formation of specialists with superior training in the fundamental fields of science in which the university organizes bachelor, master and doctoral studies programs, which are authorized or accredited according to the law.
- the carrying out of specific fundamental scientific research and applicative activities, through the specialized departments, centers and research laboratories as well as other organization bodies.
- entrepreneurial activities which comprise consultancy programs, specialized assistance, business incubators etc.



- the affirmation of academic/didactic and scientific achievements of community members through participation in reunions, scientific events etc. organized at national and international levels.
- ongoing learning through post-academic studies, trainings etc.
- professional formation through education programs carried out in Romanian or in widely used international languages and mobility programs, in agreement with the law.

## **VISION of RAU**

In promoting a particularly strategic academic management, the Romanian-American University sets for itself as an objective its national and international recognition as an elite university.

## **VALUES of RAU**

- The promotion of excellence.
- Professional, moral, and social responsibility.
- Freedom of thought and speech.
- Creativity and innovation.
- Cooperation and communication.

Through the promotion of value in education, research and innovation, our university will lastingly consolidate its position at a national and international level, being a partner for the community which it is part of, placing at the center of its concerns life improvement and experience enhancement for the main beneficiaries of its activity: students, alumni, teaching staff and administrative personnel.

## **STRATEGIC OBJECTIVES of RAU**

The main general strategic objectives which result from the mission, vision and values of the Romanian-American University are:

O.1. boosting national and international recognition for the quality of its educational and professional formation activities.

O.2. the support and consolidation of research-innovation activities and dissemination of results through measures adapted to individual and collective needs.



O.3. the development of value and partnership with students, alumni, teaching staff and administrative personnel and with other partners and components of the academic community.

O.4. the consolidation of the partnership with representatives of the economic-social environment, employers, and other components of society.

O.5. increase of the degree of internationalization of the university on the academic and administrative layers.

O.6. increase of the quality and effectiveness of academic processes in relation with various categories of relevant public from the internal and external environments.

O.7. the development of entrepreneurial culture and sustainable university vision.

The mission and the objectives assumed by RAU individualize the university within the Romanian National System of Higher Education through **clarity, distinction, and focus**. The general strategy of RAU focuses on **real integration** within the European educational framework and the internationalization of teaching and research activities.

Under the conditions of adopting the educational values of the European and American higher education systems, **scientific research** in RAU becomes a defining condition for its affirmation and existence.

**International experience** constitutes an essential component of student education and teaching staff training. RAU has **accords and memorandums with universities and other prestigious entities from USA, Europe, South America, Australia and Asia**. Numerous inter-academic exchanges for students and faculty are deployed through these partnerships, aiming to permanently adapt and implement values of the higher education systems from USA and Europe, in order to raise the standards of quality and competitiveness of the educational process.

Each year, RAU organizes international summer schools in partnerships with James Madison University (USA), University of Alabama in Huntsville (USA) and other international partners. RAU students benefit from scholarships to study all over the world. The international component of the student life comprises, besides scholarships to study abroad, participation at interactive classes taught by prestigious professors from all over the world, online courses, scientific events, summer schools, international meetings etc. – all these things aiming to increase the horizon of our students through an international approach, a possibility to globally apply what they learn and, also, to obtain different certificates attesting their experience and expertise.



Considered as the best private university in Romania (according to the "University Ranking" study done by the German company Kienbaum Management Consultants in cooperation with the Capital magazine) RAU's international relations are a key component of its development strategy.

Scholarships, quality of education, partnership with the business environment, developing general and specialty competences required by the employers and implicitly the guarantee of a fast insertion on the labour market, represent distinctive characteristics of RAU, which provide a competitive advantage for the university.



An essential condition for fulfilling its assumed mission and objectives regarding teaching, scientific research, and efficient administration, is represented by the existence of a modern campus, meeting all the requirements of the higher education field.

RAU has a vast number of dedicated spaces for: educational activities, scientific research, and administrative offices. All spaces are equipped with technical equipment, computers, didactic materials, software, internet access, intranet space and access to the library.





With a surface of over 34.500 m<sup>2</sup>, the **Campus** comprises: an Aula Magna, amphitheatres, lecture rooms, scientific research labs and centers, IT labs, forensics lab, international negotiations simulation lab, audio lab, library, medical practice, sport and fitness areas, student club, tourism agency, chapel, technical and administrative offices, hostel with 11 floors, cafeteria – restaurant etc.





**Come JOIN US!**

**Your CHOICE, Your FUTURE!**



## PART II:

### PROFESSION PERSPECTIVES

The **School of Computer Science for Business Management** offers to its graduates specialized knowledge, both theoretical and practical, according to the current requirements of the field of **“Economics Informatics”**, their employment being usually done even before graduation. According to continuous analyses, over 90%<sup>1</sup> of the graduates are employed in the field they trained for, in less than one year since graduating. The school offers career guidance, through facilitating meetings between employers and students and other regular events involving business entities and students, for the entire duration of the study program.

The specialized internship is held either inside the RAU own labs, under the supervision of specialists from prestigious partners within the business environment (e.g. Microsoft, IBM, Oracle, UIPath, Bitdefender etc.), or in different companies/entities active in the IT&C field, with which the school cooperates, or in other companies/entities with which the students cooperate, thus ensuring the link between the theoretical and practical abilities that specialists in the fields of economics informatics should acquire.

Graduates of this program can work within companies in the IT sector, as well as within any company/entity needing economics or IT expertise. Their competences cover the following positions:

- information systems analyst.
- computer systems designer.
- analyst programmer.
- programmer.
- client-server and internet/intranet/extranet application developer.
- IT project manager.
- website designer.
- database administrator.
- computer network administrator.
- website administrator.
- developer of decision support systems and expert systems.
- consultant in the field of information technologies.

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<sup>1</sup> Calculated for the last 5 years before the redaction of this document.



They can also work as economists, having the distinctive advantage of mastering a rich informatic tools-set and having specialized abilities to use computer systems.

The general competencies of the graduates are:

- design, implementation, and operation of computer systems/applications.
- performing information system analyzes at micro and macroeconomic level.
- designing and creating websites.
- Internet documentation, development, and operation of e-business applications.
- ability to work in a team.
- research methods and techniques in the field of Economic Informatics.
- collecting, processing, and synthesizing economic data and information.



## PART III:

### EDUCATIONAL PERSPECTIVES

**Graduating the BA study programs from the School of Computer Science for Business Management (CSBM)**, ensures for our graduates the necessary set of knowledge and skills required for integration into the next standard study cycles: master and doctoral programs, both in Romania and abroad. The recommended educational route for our BA graduates is to enroll for master program, with the natural option being one of the MA programs offered by the School of CSBM: “Informatică Economică” (IEM, master program taught in Romanian) or “Computer Science for Business” (CSB, master program taught in English). These study programs ensure the required specific specialization skills for those that wish to deepen their knowledge in the field of economic informatics and to build a solid career with fast promotion perspectives, both within the business environment or in the fields of research and education. Within the Bologna higher education paradigm, implemented at the entire European Union level, the master study programs are considered in fact the standard education required to perfect and deepen the specialization knowledge for the graduates of a bachelor study program. While the BA study program ensures an adequate level of specialized knowledge together with knowledge sets from adjacent fields (for an optimum mandatory level of general knowledge required in the case of a graduate of a bachelor study program), the master study programs ensure exclusively the accumulation of dedicated specialization knowledge. After graduating a master study program, graduates can forward their educational route with enrolment and graduation of a doctoral program in the field.

**A unique and extremely important advantage of graduating a bachelor study program offered by the School of CSBM**, regardless of the fact that it is the “Informatică Economică” or the “Computer Science for Economics”, taught in Romanian or in English, **is represented by the possibility to obtain a double diploma after only one addition study year in the USA.**

**Graduates of the bachelor study programs offered by the School of CSBM have the opportunity to enroll, in the next academic year after graduating from RAU, to Northwood University (USA), in the bachelor study program “Management Information Systems”, and after graduating it they will obtain a second diploma from our USA partner university.** Based on the official Memorandum of Understanding between RAU and NU, for recognition of the disciplines taught at RAU by the NU, our School of CSBM graduates should only take a series of extra-curricular classes during their study program at RAU (approx. 6 courses during the 3 years). By graduating these courses, they will obtain the required number of ECTS points for registering to the 4<sup>th</sup> year of the Northwood University bachelor program. After graduating the 4<sup>th</sup> year at NU’s “Management



Information Systems” bachelor program, our CSBM graduates will obtain their second BA diploma, issued and recognized by the official USA higher education bodies.

The School of CSBM permanently cooperates with its institutional partners from all over the world, in order to design new study opportunities for our students and graduates. Join us and find out all up-to-date information regarding these opportunities.



## **PART IV:**

### **CURRICULUM (SHORT DESCRIPTION OF DISCIPLINES)**

#### **YEAR I. SEMESTER 1 - 14 WEEKS**

##### **MANDATORY DISCIPLINES (D.O)**

###### **1. MICROECONOMICS**

HOURS: 56 OUT OF WHICH 28/COURSE AND 28/SEMINAR

CREDITS FOR GRADUATING: 5

EVALUATION PROCEDURE: EXAM

DISCIPLINE OBJECTIVES: STUDENTS 'ACQUISITION OF THE BASIC CONCEPTS OF ECONOMIC SCIENCE AND THE FUNDAMENTALS OF MODERN ECONOMIC THINKING. ACQUIRING THE ABILITY TO APPLY THE THEORETICAL CONCEPTS IN PRACTICE.

###### **2. ALGORITHMS AND DATA STRUCTURES**

HOURS: 42 OUT OF WHICH 14/COURSE AND 28/SEMINAR

CREDITS FOR GRADUATING: 3

EVALUATION PROCEDURE: EXAM

DISCIPLINE OBJECTIVES: LEARNING THE FUNDAMENTALS OF PROGRAMMING IN GENERAL, AND STRUCTURED PROGRAMMING IN PARTICULAR. DEVELOPING AN ALGORITHMIC THINKING. LEARNING THE CONCEPTS RELATED TO ALGORITHMS AND ALGORITHMS REPRESENTATION. ORGANIZATION OF DATA, DATA STRUCTURES.

###### **3. MATHEMATICS FOR ECONOMICS**

HOURS: 56 OUT OF WHICH 28/COURSE AND 28/LAB

CREDITS FOR GRADUATING: 6

EVALUATION PROCEDURE: EXAM

DISCIPLINE OBJECTIVES: ACQUISITION AND ADEQUATE USE OF THEORETICAL AND APPLICATIVE NOTIONS SPECIFIC TO THE COURSE CONTENT IN THE MODELING OF ECONOMIC-SOCIAL PHENOMENA.

###### **4. ECONOMIC INFORMATICS**

HOURS: 42 OUT OF WHICH 14/COURSE AND 28/LAB

CREDITS FOR GRADUATING: 5

EVALUATION PROCEDURE: EXAM

DISCIPLINE OBJECTIVES: STUDENTS 'ACQUISITION OF THE PRACTICAL WAYS OF USING THE MAIN SOFTWARE APPLICATIONS USED IN THE OFFICE ACTIVITY: TEXT PROCESSORS, TABELAR COMPUTING PROGRAMS, PROGRAMS FOR COMMERCIAL PRESENTATIONS, PROGRAMS FOR BASIC WEB PAGE DESIGN, PROGRAMS FOR MANAGING E-MAIL ACCOUNTS AND MESSAGES.

###### **5. FUNDAMENTALS OF ACCOUNTING**

HOURS: 56 OUT OF WHICH 28/COURSE AND 28/SEMINAR

CREDITS FOR GRADUATING: 5

EVALUATION PROCEDURE: EXAM

DISCIPLINE OBJECTIVES: LEARNING THE BASICS OF ACCOUNTING THEORY, PRINCIPLES AND TECHNIQUES OF ORGANIZING AND FUNCTIONING OF A COMPANY, LEARNING THE REGISTRATION AND PROCESSING OPERATIONS FOR THE ACCOUNTING SYSTEMS.



## **6. COMPUTER ARCHITECTURE AND OPERATING SYSTEMS**

HOURS: 56 OUT OF WHICH 28/COURSE AND 28/LAB

CREDITS FOR GRADUATING: 3

EVALUATION PROCEDURE: EXAM

DISCIPLINE OBJECTIVES: ACQUISITION OF BASIC CONCEPTS REGARDING THE CONSTRUCTION, FUNCTIONING AND OPERATION OF PERSONAL COMPUTERS. TO THIS PURPOSE, WE PRESENT AND COMPARE THE CONSTRUCTIVE AND FUNCTIONAL PRINCIPLES OF PCS AND THE FUNDAMENTAL NOTIONS OF WINDOWS, SOLARIS, LINUX OPERATING SYSTEMS, IN THE DIFFERENT VARIANTS AND VERSIONS AVAILABLE ON THE MARKET. STUDENTS WILL DEVELOP THEIR CAPACITY TO ANALYZE AND SYNTHETIZE THROUGH THE ELABORATION OF PROJECTS PROVIDED IN THE LIST OF INDIVIDUAL WORKS OF THE DISCIPLINE.

## **7. ENGLISH AND COMMUNICATION TECHNIQUES I**

HOURS: 28 OUT OF WHICH 28/SEMINAR

CREDITS FOR GRADUATING: 3

EVALUATION PROCEDURE: VERIFICATION

DISCIPLINE OBJECTIVES: ACQUISITION BY STUDENTS OF COMPETENCES RELATED TO THEORY OF COMMUNICATION IN GENERAL, APPLICABLE TO THE ECONOMIC FIELD. ASSIMILATION OF GRAMMAR STRUCTURES OF THE ENGLISH LANGUAGE. ACHIEVING EFFICIENT, EASY, OPERATIONAL AND CREATIVE COMMUNICATION CAPACITY IN ENGLISH, FOR MANAGEMENT AND ADMINISTRATION ACTIVITIES. DEVELOPING AND USING SPECIFIC NEGOTIATION STYLES.

## **8. SPORT**

HOURS: 28 OUT OF WHICH 28/LAB

CREDITS FOR GRADUATING: 2

EVALUATION PROCEDURE: COLLOQUIUM



## **YEAR I. SEMESTER 2 - 14 WEEKS**

### **MANDATORY DISCIPLINES (D.O)**

#### **1. MACROECONOMICS**

HOURS: 42 OUT OF WHICH 28/COURSE AND 14/SEMINAR

CREDITS FOR GRADUATING: 5

EVALUATION PROCEDURE: EXAM

DISCIPLINE OBJECTIVES: STUDENTS' ACQUISITION OF THE BASIC CONCEPTS OF ECONOMIC SCIENCE AND THE FUNDAMENTALS OF MODERN ECONOMIC THINKING. ACQUIRING THE ABILITY TO APPLY THE THEORY IN PRACTICE – AT MACROECONOMIC LEVEL.

#### **2. FINANCE**

HOURS: 42 OUT OF WHICH 28/COURSE AND 14/SEMINAR

CREDITS FOR GRADUATING: 5

EVALUATION PROCEDURE: EXAM

DISCIPLINE OBJECTIVES: STUDY OF THE MAIN ELEMENTS REGARDING THE PURPOSE OF PUBLIC FINANCES AND COMPANY FINANCES. ACQUISITION OF THEORETICAL AND PRACTICAL ASPECTS REGARDING THE MANAGEMENT OF THE PUBLIC EXPENDITURE SYSTEM AND THE SYSTEM OF PUBLIC FINANCIAL RESOURCES IN ROMANIA.

#### **3. OBJECT ORIENTED PROGRAMMING**

HOURS: 56 OUT OF WHICH 28/COURSE AND 28/LAB

CREDITS FOR GRADUATING: 5

EVALUATION PROCEDURE: EXAM

DISCIPLINE OBJECTIVES:

ACQUIRING THE FUNDAMENTALS OF THE PROGRAMMING ACTIVITY BASED ON OBJECTS ORIENTED PARADIGM. ACQUIRING THE CONCEPTS REGARDING OBJECTS, CLASSES AND THEIR CHARACTERISTICS.

#### **4. COMMUNICATION AND PUBLIC RELATIONS**

HOURS: 28 OUT OF WHICH 28/COURSE

CREDITS FOR GRADUATING: 3

EVALUATION PROCEDURE: EXAM

DISCIPLINE OBJECTIVES: ACQUISITION AND APPROPRIATE USE OF THEORETICAL AND APPLICATIVE NOTIONS SPECIFIC TO THE CONTENT OF THE COURSE IN COMMUNICATION AND PUBLIC RELATIONS.

#### **5. ALGORITHMS AND PROGRAMMING TECHNIQUES**

HOURS: 56 OUT OF WHICH 28/COURSE AND 28/LAB

CREDITS FOR GRADUATING: 6

EVALUATION PROCEDURE: EXAM

DISCIPLINE OBJECTIVES: TO FURTHER DEVELOP THE ALGORITHMIC THINKING, TO GAIN THE ABILITY TO CHOOSE THE APPROPRIATE DATA STRUCTURES, TO DESIGN AND IMPLEMENT EFFICIENT ALGORITHMS AND TO USE APPROPRIATE PROGRAMMING METHODS TO SOLVE DIFFERENT CLASSES OF PROBLEMS.

#### **6. LAW**

HOURS: 28 OUT OF WHICH 28/COURSE

CREDITS FOR GRADUATING: 3

EVALUATION PROCEDURE: EXAM



DISCIPLINE OBJECTIVES: ACQUISITION OF KNOWLEDGE REGARDING THE FUNDAMENTAL ELEMENTS OF ROMANIAN CIVIL LAW, AS WELL AS THOSE OF GENERAL INTEREST REGARDING THE ROMANIAN LEGISLATIVE SYSTEM.

## **7. ENGLISH AND COMMUNICATION TECHNIQUES II**

HOURS: 28 OUT OF WHICH 28/SEMINAR

CREDITS FOR GRADUATING: 3

EVALUATION PROCEDURE: VERIFICATION

DISCIPLINE OBJECTIVES: ACQUISITION BY STUDENTS OF COMPETENCES RELATED TO THEORY OF COMMUNICATION IN GENERAL, APPLICABLE TO THE ECONOMIC FIELD. ASSIMILATION OF THE GRAMMAR STRUCTURES OF THE ENGLISH LANGUAGE, ACHIEVING THE EFFICIENT, EARLY, OPERATIVE AND CREATIVE COMMUNICATION CAPABILITY IN THE ENGLISH LANGUAGE IN THE DEVELOPMENT AND DEVELOPMENTAL ACTIVITIES OF MANAGEMENT AND DEVELOPMENT.

## **8. SPORT**

HOURS: 28 OUT OF WHICH 28/LAB

CREDITS FOR GRADUATING: 2

EVALUATION PROCEDURE: COLLOQUIUM



## YEAR II. SEMESTER 1 - 14 WEEKS

### MANDATORY DISCIPLINES (D.O)

#### 1. SOFTWARE PROGRAMMING I

HOURS: 58 OUT OF WHICH 28/COURSE AND 28/LAB

CREDITS FOR GRADUATING: 4

EVALUATION PROCEDURE: EXAM

DISCIPLINE OBJECTIVES: KNOWLEDGE OF C++ PROGRAMMING POSSIBILITIES, APPLICATION SOFTWARE DEVELOPMENT. ELEMENTS OF C++ LANGUAGE; CONSTANTS, VARIABLES, IDENTIFIERS, MEMORY CLASSES, REPRESENTATIONS, SYMBOLIC CONSTANTS, AVOIDANCE SEQUENCES. OPERATORS, EXPRESSIONS, STANDARD C++ LIBRARIES.

#### 2. DATABASES I

HOURS: 58 OUT OF WHICH 28/COURSE AND 28/LAB

CREDITS FOR GRADUATING: 4

EVALUATION PROCEDURE: EXAM

DISCIPLINE OBJECTIVES: STUDY AND ACQUISITION OF METHODS, TECHNIQUES AND INSTRUMENTS USED IN THE ANALYSIS, DESIGN, IMPLEMENTATION AND OPERATION OF DATABASE COMPUTER APPLICATIONS IN DIFFERENT ECONOMIC-SOCIAL FIELDS. ACQUISITION AND USE OF THE RELATIONAL ACCESS DBMS.

#### 3. STATISTICS

HOURS: 42 OUT OF WHICH 28/COURSE AND 14/SEMINAR

CREDITS FOR GRADUATING: 5

EVALUATION PROCEDURE: EXAM

DISCIPLINE OBJECTIVES: THE COURSE OF THEORETICAL AND ECONOMIC STATISTICS AIMS TO PROVIDE KNOWLEDGE REGARDING THE BASIC CONCEPTS AND TECHNIQUES USED IN OBTAINING, SYSTEMATIZATION, PROCESSING, PRESENTING AND ANALYSIS OF SOCIAL MASS PROCESSES.

#### 4. FUNDAMENTALS OF MARKETING

HOURS: 42 OUT OF WHICH 28/COURSE AND 14/SEMINAR

CREDITS FOR GRADUATING: 5

EVALUATION PROCEDURE: EXAM

DISCIPLINE OBJECTIVES: LEARNING THEORETICAL CONCEPTS REGARDING THE ESSENCE, FUNCTIONS AND PLACE OF MARKETING IN THE ECONOMIC ACTIVITY. KNOWLEDGE OF THE WAYS OF IMPLEMENTING THE MARKETING POLICIES AND STRATEGIES REGARDING THE PRODUCT, PRICE, DISTRIBUTION, PROMOTION IN THE DECISION-MAKING PROCESS OF THE ACTIVITY OF THE ECONOMIC AGENTS.

#### 5. MANAGEMENT

HOURS: 33 OUT OF WHICH 22/COURSE AND 11/SEMINAR

CREDITS FOR GRADUATING: 5

EVALUATION PROCEDURE: EXAM

DISCIPLINE OBJECTIVES: ENSURING THE KNOWLEDGE BY STUDENTS OF THE CONCEPTS AND COMPONENTS SPECIFIC TO MODERN MANAGEMENT. TRAINING AND DEVELOPMENT OF SKILLS, ABILITIES AND MANAGEMENT BEHAVIOR CORRESPONDING TO THE REQUIREMENTS OF A DYNAMIC AND EFFICIENT ACTIVITIES AT COMPANY LEVEL, AS WELL AS FOR THE REQUIREMENTS OF THE MODERN MARKET ECONOMY, WITH A FOCUS ON INNOVATION, CREATIVITY AND ENTREPRENEURSHIP. DEVELOPMENT OF SYSTEMIC THINKING, BASED ON THE FIRM'S APPROACH IN CLOSE INTERDEPENDENCE WITH ITS ECOSYSTEM, IN ORDER TO ENSURE SUSTAINABLE DEVELOPMENT.



## **6. ENGLISH AND COMMERCIAL CORRESPONDENCE I**

HOURS: 28 OUT OF WHICH 28/SEMINAR

CREDITS FOR GRADUATING: 3

EVALUATION PROCEDURE: COLLOQUIUM

DISCIPLINE OBJECTIVES: STUDENTS' ACQUISITION OF ECONOMIC, POLITICAL, BANKING-FINANCIAL, ADMINISTRATIVE, BUSINESS LANGUAGE IN ENGLISH. ASSIMILATION OF GRAMMAR STRUCTURES OF THE ENGLISH LANGUAGE. ACHIEVING EFFICIENT, EASY, OPERATIONAL AND CREATIVE COMMUNICATION CAPACITY IN ENGLISH IN MANAGEMENT ACTIVITIES. ACQUISITION OF FLUENCE, SPONTANEITY, ACCURACY AND AUTONOMY IN ORAL AND WRITTEN BUSINESS COMMUNICATION.

### **OPTIONAL DISCIPLINES (D.A.)**

*(STUDENTS MUST CHOOSE ONE OF THE FOLLOWING DISCIPLINES)*

#### **1. NUMERICAL METHODS**

HOURS: 42 OUT OF WHICH 28/COURSE AND 14/LAB

CREDITS FOR GRADUATING: 4

EVALUATION PROCEDURE: EXAM

DISCIPLINE OBJECTIVES: ACQUISITION OF THEORETICAL KNOWLEDGE AND FORMATION OF PRACTICAL SKILLS IN THE FIELD OF ANALYSIS AND MODELING OF CYBERNETIC-ECONOMIC SYSTEMS AT MICRO AND MACRO ECONOMIC LEVEL.

#### **2. CORPORATE FINANCE**

HOURS: 56 OUT OF WHICH 28/COURSE AND 28/LAB

CREDITS FOR GRADUATING: 4

EVALUATION PROCEDURE: EXAM

DISCIPLINE OBJECTIVES: THE COURSE AIMS TO STUDY THE FINANCIAL ASPECTS- THEORETICAL AND PRACTICAL- NECESSARY TO DECIDE THE APPROPRIATE SOURCES OF FINANCING AND THEIR EFFICIENT ALLOCATION TO ACHIEVE THE MAIN OBJECTIVE OF THE COMPANY, RESPECTIVE THE INCREASE OF ITS VALUE AND THUS MAXIMIZE THE WEALTH OF SHAREHOLDERS.



## YEAR II. SEMESTER 2 - 14 WEEKS

### MANDATORY DISCIPLINES (D.O)

#### 1. SOFTWARE PROGRAMMING II

HOURS: 56 OUT OF WHICH 28/COURSE AND 28/LAB

CREDITS FOR GRADUATING: 5

EVALUATION PROCEDURE: EXAM

DISCIPLINE OBJECTIVES: OBJECT ORIENTED PROGRAMMING IN C++. CONCEPTS OF OBJECT PROGRAMMING. CLASSES. CONSTRUCTION. DESTRUCTOR. HERITAGE. POLYMORPHISMS. TEMPLATE CLASSES. OVERDEFINITION OF OPERATORS AND FUNCTIONS. VIRTUAL FUNCTIONS AND CLASSES. OBJECTS AND CLASSES FOR WORKING WITH FILES. ABSTRACT CLASSES; CLASS LIBRARIES.

#### 2. JAVA - ADVANCED PROGRAMMING ENVIRONMENTS

HOURS: 56 OUT OF WHICH 28/COURSE AND 28/LAB

CREDITS FOR GRADUATING: 5

EVALUATION PROCEDURE: EXAM

DISCIPLINE OBJECTIVES: ENSURES STUDENTS WITH THE OPPORTUNITY TO DEVELOP, INTEGRATE AND MAINTAIN SOME OF THE MOST MODERN AND APPRECIATED TYPES OF PROGRAMS, BASED ON JAVA LANGUAGE, AS WELL AS THE POSSIBILITY OF APPLICATIONS DEVELOPMENT FOR VIRTUALLY ANY CURRENT IT DEVICE, INCLUDING SMARTPHONES OR IOT DEVICES.

#### 3. ECONOMETRICS

HOURS: 56 OUT OF WHICH 28/COURSE AND 28/LAB

CREDITS FOR GRADUATING: 5

EVALUATION PROCEDURE: EXAM

DISCIPLINE OBJECTIVES: CREATING SKILLS FOR ANALYSIS AND FORECASTING THE EVOLUTION OF ECONOMIC VARIABLES AND FOR IDENTIFYING THE DEPENDENCIES BETWEEN THEM.

#### 4. DATA ANALYSIS SYSTEMS

HOURS: 56 OUT OF WHICH 28/COURSE AND 28/LAB

CREDITS FOR GRADUATING: 5

EVALUATION PROCEDURE: EXAM

DISCIPLINE OBJECTIVES: DEVELOPMENT OF CAPACITIES FOR ANALYSIS, SYNTHESIS AND MODELING OF CYBER SYSTEMS IN THE ECONOMY. KNOWLEDGE OF THE CYBER SYSTEMS OF THE CONSUMER, THE PRODUCER, THE NATIONAL ECONOMY, THE BANKS; UNDERSTANDING, USING AND IMPLEMENTING FEEDBACK MECHANISMS IN EXISTING ECONOMIC SYSTEMS; DESIGN AND IMPLEMENTATION OF CYBER MODELS FOR OPTIMIZING CYBER SYSTEMS AT ANY LEVEL OF THE ECONOMY.

#### 5. ENGLISH AND COMMERCIAL CORRESPONDENCE II

HOURS: 28 OUT OF WHICH 28/SEMINAR

CREDITS FOR GRADUATING: 3

EVALUATION PROCEDURE: VERIFICATION

DISCIPLINE OBJECTIVES: STUDENTS' ACQUISITION OF ECONOMIC, POLITICAL, BANKING-FINANCIAL, ADMINISTRATIVE, BUSINESS LANGUAGE IN ENGLISH. ASSIMILATION OF GRAMMAR STRUCTURES OF THE ENGLISH LANGUAGE. ACHIEVING EFFICIENT, EASY, OPERATIONAL AND CREATIVE COMMUNICATION CAPACITY IN ENGLISH IN MANAGEMENT ACTIVITIES. ACQUISITION OF FLUENCE, SPONTANEITY, ACCURACY AND AUTONOMY IN ORAL AND WRITTEN BUSINESS COMMUNICATION.

#### 6. SPECIALIZED INTERNSHIP



HOURS: 90 OUT OF WHICH 90/INTERNSHIP

CREDITS FOR GRADUATING: 3

EVALUATION PROCEDURE: COLLOQUIUM

DISCIPLINE OBJECTIVES: FIXING SPECIALTY KNOWLEDGE, ESPECIALLY FOR THE DISCIPLINES IN THE CURRICULUM FOR THE SECOND. DEVELOPING PRACTICAL SKILLS AND FINDING OUT THE BUSINESS ENVIRONMENT REALITIES.

### **OPTIONAL DISCIPLINES (D.A.)**

*(STUDENTS MUST CHOOSE ONE OF THE FOLLOWING DISCIPLINES)*

#### **1. MACROECONOMIC STATISTICS**

HOURS: 56 OUT OF WHICH 28/COURSE AND 28/SEMINAR

CREDITS FOR GRADUATING: 4

EVALUATION PROCEDURE: EXAM

DISCIPLINE OBJECTIVES: MACROECONOMIC STATISTICS INCLUDES A WIDE RANGE OF KEY STATISTICS FOR THE WHOLE ECONOMY, INDIVIDUAL SECTORS AND THE RELATIONSHIPS BETWEEN THEM. THEY ARE THE BACKBONE FOR ECONOMIC AND FINANCIAL ANALYSIS AND MONITORING OF THE EFFECTS OF THE MONETARY POLICIES AT LARGE SCALE LEVELS.

#### **2. INVESTMENT EFFICIENCY**

HOURS: 42 OUT OF WHICH 28/COURSE AND 14/SEMINAR

CREDITS FOR GRADUATING: 4

EVALUATION PROCEDURE: EXAM

DISCIPLINE OBJECTIVES: STUDENTS WILL LEARN THEORETICAL AND PRACTICAL METHODS AND TECHNIQUES FOR ECONOMIC AND FINANCIAL EVALUATION OF INVESTMENT PROJECTS IN THE MARKET ECONOMY. THE PURPOSE OF THE DISCIPLINE IS THE FORMATION OF A NEW AND LOGICAL THINKING OF THE FUTURE ECONOMISTS AND THE DEVELOPMENT OF STUDENTS' SKILLS IN EVALUATIVE INVESTMENTS IN ORDER TO USE THE METHODS AND MODELS FOR ANALYZING INVESTMENT OPPORTUNITIES AND MAKING INVESTMENT DECISIONS.

#### **3. ETHICS AND ACADEMIC INTEGRITY**

HOURS: 42 OUT OF WHICH 14/COURSE AND 28/SEMINAR

CREDITS FOR GRADUATING: 4

EVALUATION PROCEDURE: VERIFICATION

DISCIPLINE OBJECTIVES: THE COURSE AND THE SEMINAR ARE AIMING TO EQUIP THE STUDENTS WITH THE REQUIRED KNOWLEDGE AND COMPETENCES FOR CONDUCTING RESEARCH ACTIVITIES, BY USING METHODS AND TOOLS SPECIFIC TO THE SOCIAL SCIENCES FIELD, WITH A FOCUS ON ECONOMIC SCIENCES.



## **YEAR III. SEMESTER 1 - 14 WEEKS**

### **MANDATORY DISCIPLINES (D.O)**

#### **1. INFORMATION SYSTEMS DESIGN**

HOURS: 56 OUT OF WHICH 28/COURSE AND 28/LAB

CREDITS FOR GRADUATING: 5

EVALUATION PROCEDURE: EXAM

DISCIPLINE OBJECTIVES: ACQUISITION OF GENERAL CONCEPTS REGARDING DATA AND PROCESSES MODELING, LOGICAL AND PHYSICAL MODELING, DESIGN OF A COMPUTER SYSTEM OR COMPUTER APPLICATION USING SYSTEMIC METHODS. IBM AND SSADM DESIGN METHODOLOGIES ARE STUDIED IN DETAIL.

#### **2. DATABASES II**

HOURS: 56 OUT OF WHICH 28/COURSE AND 28/LAB

CREDITS FOR GRADUATING: 5

EVALUATION PROCEDURE: EXAM

DISCIPLINE OBJECTIVES: ENSURES STUDENTS THE POSSIBILITY OF UNDERSTANDING THE RELATIONAL MODEL, MASTERING THE TECHNIQUES OF DESIGNING THE RELATIONAL DATABASES.

#### **3. OPERATIONAL RESEARCH**

HOURS: 56 OUT OF WHICH 28/COURSE AND 28/SEMINAR

CREDITS FOR GRADUATING: 4

EVALUATION PROCEDURE: EXAM

DISCIPLINE OBJECTIVES: THE COURSE HAS A STRONG APPLICATIVE APPROACH, INTRODUCING METHODS AND MODELS FOR OPTIMIZING REAL WORLDS PROCESSES. APPLICATIONS IN FUNDAMENTING DECISIONS FOR PRODUCTION PROGRAMS, EFFICIENT USE OF RESOURCES, OPERATIONAL PRODUCTION PROGRAMMING, TRANSPORT AND DISTRIBUTION PROBLEMS, ELABORATION OF COMPETITIVE STRATEGIES.

#### **4. SOFTWARE PACKAGES FOR DATA ANALYSIS**

HOURS: 48 OUT OF WHICH 24/COURSE AND 24/LAB

CREDITS FOR GRADUATING: 4

EVALUATION PROCEDURE: EXAM

DISCIPLINE OBJECTIVES: KNOWLEDGE OF THE BASIC NOTIONS REGARDING SOFTWARE PACKAGES AND THEIR MAIN FEATURES, AS WELL AS HOW TO USE PERFORMANT SOFTWARE PRODUCTS IN SOLVING ECONOMIC PROBLEMS. EFFICIENT USE OF SOFTWARE PACKAGES FOR SOLVING ECONOMIC PROBLEMS, APPLYING CONCEPTS, THEORIES, PRINCIPLES AND METHODS OF INVESTIGATING PHENOMENA AND PROCESSES IN THIS FIELD. DEVELOPMENT OF COMPONENTS FOR SPECIALIZED SOFTWARE PACKAGES, THROUGH THEIR OWN PROGRAMMING LANGUAGES.

#### **5. WEB APPLICATIONS PROGRAMMING**

HOURS: 58 OUT OF WHICH 28/COURSE AND 28/LAB

CREDITS FOR GRADUATING: 5

EVALUATION PROCEDURE: EXAM

DISCIPLINE OBJECTIVES: ENSURING THE PREPARATION OF STUDENTS FOR THE DESIGN AND CREATION OF WEB PAGES AS WELL AS THEIR INTEGRATION IN A DYNAMIC CLIENT-SERVER ARCHITECTURE. BASIC WEB CONCEPTS, HTML LANGUAGE, AS THE BASIC LANGUAGE USED FOR BUILDING WEB PAGES; USE OF SCRIPTING TECHNIQUE TO OBTAIN VIDEO/AUDIO EFFECTS.



## **6. BUSINESS ENGLISH COMMUNICATION I**

HOURS: 42 OUT OF WHICH 14/COURSE AND 28/SEMINAR

CREDITS FOR GRADUATING: 3

EVALUATION PROCEDURE: EXAM

DISCIPLINE OBJECTIVES: STUDENTS' ACQUISITION OF ECONOMIC, POLITICAL, BANKING-FINANCIAL, ADMINISTRATIVE, BUSINESS LANGUAGE IN ENGLISH. ASSIMILATION OF GRAMMAR STRUCTURES OF THE ENGLISH LANGUAGE. ACHIEVING EFFICIENT, EASY, OPERATIONAL AND CREATIVE COMMUNICATION CAPACITY IN ENGLISH IN MANAGEMENT ACTIVITIES. ACQUISITION OF FLUENCE, SPONTANEITY, ACCURACY AND AUTONOMY IN ORAL AND WRITTEN BUSINESS COMMUNICATION.

### **OPTIONAL DISCIPLINES (D.A.)**

*(STUDENTS MUST CHOOSE ONE OF THE FOLLOWING DISCIPLINES)*

#### **1. ADVANCED SOFTWARE PROGRAMMING**

HOURS: 42 OUT OF WHICH 28/COURSE AND 14/SEMINAR

CREDITS FOR GRADUATING: 4

EVALUATION PROCEDURE: EXAM

DISCIPLINE OBJECTIVES: ADVANCED PROGRAMMING IN C ++: DESIGN AND IMPLEMENTATION OF DYNAMIC DATA STRUCTURES. DEVELOPING SOFTWARE APPLICATIONS THAT IMPLEMENT DYNAMIC DATA STRUCTURES.

#### **2. INTERNATIONAL BUSINESS MANAGEMENT I**

HOURS: 56 OUT OF WHICH 28/COURSE AND 28/SEMINAR

CREDITS FOR GRADUATING: 4

EVALUATION PROCEDURE: EXAM

DISCIPLINE OBJECTIVES: THE DISCIPLINE IS ADDRESSED PRIMARILY TO THOSE WHO WANT A CAREER IN INTERNATIONAL ECONOMIC RELATIONS. WITH A RICH INTERDISCIPLINARY CONTENT, INTERNATIONAL BUSINESS MANAGEMENT COURSE APPROACHES THE MOST IMPORTANT ASPECTS OF CONDUCTING FOREIGN ECONOMIC ACTIVITIES: FORMS AND ORGANIZATIONAL STRUCTURES OF INTERNATIONAL TRADE, PROMOTING OF FOREIGN AFFAIRS, PREPARATION AND ORGANIZATION OF INTERNATIONAL NEGOTIATIONS AND DEVELOPMENT OF EXPORT-IMPORT OPERATIONS (BASED ON PREPARING GOODS FOR EXPORT, CONTINUING WITH THE EXPEDITION AND ITS EXTERNAL TRANSPORT, THEN THE OPERATION OF INSURANCE ON INTERNATIONAL ROUTES AND ENDING WITH CUSTOMS CLEARANCE).



## **YEAR III. SEMESTER 2 - 14 WEEKS**

### **MANDATORY DISCIPLINES (D.O)**

#### **1. NETWORKING AND INTERNET**

HOURS: 56 OUT OF WHICH 28/COURSE AND 28/LAB

CREDITS FOR GRADUATING: 5

EVALUATION PROCEDURE: EXAM

DISCIPLINE OBJECTIVES: UNDERSTANDING BY STUDENTS OF FUNDAMENTAL CONCEPTS REGARDING COMPUTER NETWORKS AND INTERNET INFRASTRUCTURE.

#### **2. INFORMATICS PROJECT MANAGEMENT**

HOURS: 42 OUT OF WHICH 28/COURSE AND 14/ LABORATOR

CREDITS FOR GRADUATING: 5

EVALUATION PROCEDURE: EXAM

DISCIPLINE OBJECTIVES: ACQUIRING THE METHODOLOGY OF MANAGING IT PROJECTS/CONTRACTS. USING THE MICROSOFT PROJECT SOFTWARE FOR PLANNING AND MONITORING COMPUTER PROJECTS.

#### **3. ECONOMIC PROCESSES MODELLING AND SIMULATION**

HOURS: 56 OUT OF WHICH 28/COURSE AND 28/SEMINAR

CREDITS FOR GRADUATING: 5

EVALUATION PROCEDURE: EXAM

DISCIPLINE OBJECTIVES: THE COURSE, IN CLOSE CORRELATION WITH ECONOMIC-MATHEMATICAL MODELING, ADDRESSES THE PRACTICAL ASPECTS OF SIMULATION OF THE DYNAMICS OF PHENOMENA AND ECONOMIC PROCESSES FOR THE PURPOSE OF FUNDAMENTING DECISIONS AT MICROECONOMIC LEVEL.

#### **4. ADVANCED WEB PROGRAMMING**

HOURS: 56 OUT OF WHICH 28/COURSE AND 28/LAB

CREDITS FOR GRADUATING: 5

EVALUATION PROCEDURE: EXAM

DISCIPLINE OBJECTIVES: THE DISCIPLINE PREPARES STUDENTS FOR THE DESIGN AND IMPLEMENTATION OF WEB PAGES AND APPLICATIONS AS WELL AS THEIR INTEGRATION INTO A DYNAMIC CLIENT-SERVER ARCHITECTURE. STUDY CASES.

#### **5. BUSINESS ENGLISH COMMUNICATION II**

HOURS: 42 OUT OF WHICH 14/COURSE AND 28/SEMINAR

CREDITS FOR GRADUATING: 3

EVALUATION PROCEDURE: EXAM

DISCIPLINE OBJECTIVES: STUDENTS' ACQUISITION OF ECONOMIC, POLITICAL, BANKING-FINANCIAL, ADMINISTRATIVE, BUSINESS LANGUAGE IN ENGLISH. ASSIMILATION OF GRAMMAR STRUCTURES OF THE ENGLISH LANGUAGE. ACHIEVING EFFICIENT, EASY, OPERATIONAL AND CREATIVE COMMUNICATION CAPACITY IN ENGLISH IN MANAGEMENT ACTIVITIES. ACQUISITION OF FLUENCE, SPONTANEOUSNESS, ACCURACY AND AUTONOMY IN ORAL AND WRITTEN COMMUNICATION IN BUSINESS.

#### **6. BACHELOR PROJECT PREPARATION**

HOURS: 28 OUT OF WHICH 28/PROJECTS

CREDITS FOR GRADUATING: 3

EVALUATION PROCEDURE: VERIFICATION

DISCIPLINE OBJECTIVES: THE DISCIPLINE'S MAIN OBJECTIVE IS THE GUIDANCE AND SUPPORT OF STUDENTS FOR THE ELABORATION OF THEIR BACHELOR THESIS. STUDENTS HAVE THE OPPORTUNITY TO CARRY OUT



MORE DOCUMENTATION WORK ON THE INTERNET, IN THE UNIVERSITY LABS, IN ORDER TO DESIGN, DEVELOP AND TEST THEIR SOFTWARE FOR THE BACHELOR EXAM.

### **OPTIONAL DISCIPLINES (D.A.)**

*(STUDENTS MUST CHOOSE ONE OF THE FOLLOWING DISCIPLINES)*

#### **1. ORACLE DBMS - SQL**

HOURS: 56 OUT OF WHICH 28/COURSE AND 28/LAB

CREDITS FOR GRADUATING: 4

EVALUATION PROCEDURE: EXAM

DISCIPLINE OBJECTIVES: PROVIDES STUDENTS THE NECESSARY TRAINING REQUIRED FOR DESIGNING AND DEVELOPING SOFTWARE APPLICATIONS USING ORACLE DBMS. STUDENTS COMPREHEND AND MANAGE THE DATABASE STORAGE STRUCTURES AND SCHEMA OBJECTS, RUN DATA DEFINITION LANGUAGE (DDL) STATEMENTS THAT CREATE AND MANAGE SCHEMA OBJECTS, RUN DATA MANIPULATION LANGUAGE STATEMENTS (DML), ADMINISTER USER ACCOUNTS AND SECURITY, BACKUP AND RECOVER ORACLE DATABASES.

#### **2. INTERNATIONAL BUSINESS MANAGEMENT II**

HOURS: 56 OUT OF WHICH 28/COURSE AND 28/SEMINAR

CREDITS FOR GRADUATING: 4

EVALUATION PROCEDURE: EXAM

DISCIPLINE OBJECTIVES: THE DISCIPLINE IS ADDRESSED PRIMARILY TO THOSE WHO WANT A CAREER IN INTERNATIONAL ECONOMIC RELATIONS. WITH A RICH INTERDISCIPLINARY CONTENT, INTERNATIONAL BUSINESS MANAGEMENT COURSE APPROACHES THE MOST IMPORTANT ASPECTS OF CONDUCTING FOREIGN ECONOMIC ACTIVITIES. THE DISCIPLINE PURPOSE IS ALSO THE DEVELOPMENT OF PRACTICAL APPLICATIONS, CASE STUDIES IN CONCLUDING CONTRACTS FOR EXPORT IMPORT, THE ISSUE OF INTERNATIONAL PAYMENTS, COMPOUND AND COMPLEX COMMERCIAL TRANSACTIONS, AND THE MECHANISM OF THE AUCTIONS.