## Course Name : Computer Organization and Systems

| Course Code | Course Type | Regular Semester | Lecture (hours/week) | Seminar (hours/week) | Lab. (hours/week) | Credits | ECTS |
|---|---|---|---|---|---|---|---|
| EMS 119 | B | Fall | 3.00 | 1.00 | 0.00 | 3.50 | 5.00 |

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| **Lecturer** | Armand Agolli, Msc |
| **Assistant** | |
| **Course language** | English |
| **Course level** | Bachelor |
| **Description** | Digital transformation is the integration of digital technology into all areas of a business, fundamentally changing the way it operates and delivers value to customers. Digital transformation is imperative for all businesses, from small businesses to corporations. This message comes through loud and clear as the world becomes increasingly digital. What parts of our business strategy need to change? Is it really worth it? The pandemic has brought an urgent need for digital transformation and forced many companies/organizations to accelerate the transformation work. So resistance to this transformation could be very costly in the coming decade! |
| **Objectives** | The objectives of the class will be orienting the mindset of digital transformation following carefully the steps o equipment digitalization, content digitalization and software digitalization. |
| **Core Concepts** | Digitalization of work processes of an entrepreneurship. Digitalization of the equipment and tools of daily work. Digitalization of materials in paper and analogue material of everyday work. Digitalization of computer software and professions on an entrepreneurship. |

## Course Outline

| Week | Topic |
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| **1** | The value of certification in IT. • Major IT technology vendors • International IT certification schemes • Detailed exam formats • Their impact on the IT community |
| **2** | Analysis of IT structure. • Analysis of IT assets • Optimization of IT infrastructure • Standardization of IT infrastructure components • Maintenance of IT equipment • Replacement/Procurement of IT infrastructure |
| **3** | Principles of Digital Transformation • Steps of digital transformation • Creating a shared vision • Creating transparency • Eliminating obstacles • Ensuring execution |
| **4** | Processing Power and Storage Capacity • Information processing devices • Characteristics and applications in IT • Moore's Law • Information recording devices • Characteristics and applications in IT |
| **5** | Network Devices and Security Devices • Network devices • Characteristics and applications in IT • Security devices • Characteristics and applications in IT • Information protection |
| **6** | Digital Marketing Systems • Concepts of digital marketing • Email marketing • Social media marketing • Web marketing • YouTube marketing |
| **7** | Managing Change Resistance • Concept of resistance to change • User education • Understanding the shared vision • "All on board" concept • Ensuring execution of transformation |
| **8** | Midterm Exam |
| **9** | MPS (Managed Print Systems) • Concepts of resource outsourcing • Benefits of managed print systems • Printing/scanning/photocopying infrastructure • MPS management applications • MPS monitoring |

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| **10** | Digital Archives - Digitization of Paper Archives • Concepts of digital archives • Devices and formats for paper digitization • Scanning, indexing, and OCR • Information storage, databases • Modules for managing archival paper information |
| **11** | Digital Archives - Digitization of Audio-Video Archives • Concepts of digital archives • Devices and formats for Audio/Video digitization • Audio-Video recording • Processing and recording of Audio/Video information • Modules for managing Audio/Video archival information |
| **12** | DMS (Document Management Systems) • Concepts of document management systems • Designing the information flow process • Designing the DMS command chain • Designing DMS management modules • Testing/Finalizing DMS systems |
| **13** | ERP - Analysis of Company Management Systems • Analyzing the existing hardware infrastructure • Analyzing company workflows • Analyzing company structure • Analyzing existing company systems • Finalizing the assessment of the current state |
| **14** | ERP - Implementation of Company Management Systems • Implementing the upgraded hardware infrastructure • Implementing the core of the ERP system • Implementing specific modules of the ERP system • Training staff on system usage • Maintaining the ERP system |
| **15** | Year X - Future Technologies • Use of Artificial Intelligence in the IT industry • HPC (High Performance Computing) • Use of blockchain for distributed information processing • Hypotheses on the structure of IT systems in the future • Hypotheses on digital transformation in the future |
| **16** | Final Exam |

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| **Prerequisites** | The student must attend the course at a minimum rate of 75%. |
| **Literature** | • Transformimi Digjital - Armand Agolli - Leksione te pergatitura nga pedagogu i lendes. |
| **References** | • The Digital Transformation Playbook: Rethink Your Business for the Digital Age<br>• Why Digital Transformations Fail: The Surprising Disciplines of How to Take Off and Stay Ahead<br>• The Technology Fallacy: How People Are the Real Key to Digital Transformation<br>• See Sooner, Act Faster: How Vigilant Leaders Thrive in an Era of Digital Turbulence |

## Course Outcome

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|---|---|
| **1** | In the end of the classes the students will be albe to understand IT equipment and methods of alignment of these equipment with the strategies and work processes of the enterprises/institutions. |
| **2** | In the end of the classes the students will be albe to understand Digital Transformation and methods for enhancing the digital environment of the enterprises/institutions. |
| **3** | In the end of the classes the students will be albe to understand archiving systems, DMS, MPS and ERP systems of an enterprise/institution. |

## Course Evaluation

| In-term Studies | Quantity | Percentage |
|---|---|---|
| Midterms | 1 | 20 |
| Quizzes | 0 | 0 |
| Projects | 1 | 20 |
| Term Projects | 0 | 0 |
| Laboratory | 0 | 0 |
| Class Participation | 0 | 0 |
| **Total in-term evaluation percent** | | **40** |
| **Final exam percent** | | **60** |
| **Total** | | **100** |

## ECTS Workload (Based on Student Workload)

| Activities | Quantity | Duration (hours) | Total (hours) |
|---|---|---|---|
| Course duration (Including the exam week: 16x Total hours of the course) | 16 | 4 | 64 |
| Study hours outside the classroom (Preparation, Practice, etc.) | 14 | 3 | 42 |
| Duties | 1 | 12 | 12 |
| Midterms | 1 | 3 | 3 |
| Final Exam | 1 | 4 | 4 |
| Other | 0 | 0 | 0 |
| **Total Work Load** | | | **125** |
| **Total Work Load / 25 (hours)** | | | **5.00** |
| **ECTS** | | | **5.00** |