**Syllabus**

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| **Basic data of the subject** | | | | |
| **Academic unit:** | **Faculty of Engineering and Informatics** | | | |
| **Title of the subject:** | **CAD/CAM** | | | |
| **Level:** | **Master** | | | |
| **Course Status:** | **Core** | | | |
| **Year of studies:** | **II** | | | |
| **Number of hours per week:** | **4** | | | |
| **Value of Credits - ECTS:** | **6** | | | |
| **Time / location:** |  | | | |
| **Course lecturer:** | **Prof.dr. Ibrahim Cunaku** | | | |
| **Contact details:** | **Ibrahim.cunaku@ushaf.net** | | | |
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| **Course Description** | *With the development of production technology, the approach of CAD professionals to CAD applications in CAM software has evolved.* | | | |
| **Objectives of the course:** | *This subject is aimed at students to prepare them to work as professionals and managers of metal, wood and polymer processing operations in CAD / CAM technologies. Most of the learning will consist from gaining "technical-managerial skills" experience in CNC controlled machine programming using available CAD software and CAM software.* | | | |
| **Expected learning outcomes:** | *Upon successful completion of this subject, student will be able to:*   * *create 2D and 3D geometry using the design software module.* * *use the software to convert design geometry to guiding commands for the production process* * *work with CNC machines when manufacturing wood, plastic or metal parts.* | | | |
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| **Contribution to the student load (which must correspond with learning outcomes)** | | | | |
| **Activity** | | **Hour** | **Day/Week** | **In total** |
| Lectures with lab tutorials | | 4 | 15 | 60 |
| Internship | |  |  |  |
| Contacts with teacher / consultations | | 2 | 4 | 8 |
| Field exercises | |  |  |  |
| Midterm, seminars and projects. | | 18 |  | 18 |
| Homework | |  |  |  |
| Self-learning time student (at the library or at home) | | 3 | 15 | 45 |
| Final preparation for the exam | | 15 |  | 15 |
| Time spent on evaluation (tests, quiz and final exam) | | 1 |  | 1 |
| Projects and presentations. | | 1 |  | 1 |
| **Total** | |  |  | **150** |
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| **Teaching methodology:** | Lectures combined with case studies | | | |
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| **Assessment methods:** | Final Exam 50%  Assignment 50% | | | |
| **Literature** | | | | |
| **Basic Literature:** | 1. McMahon, C. and Brown, J., CAD/CAM Principles, Practices and Manufacturing Management, 2nd ed., Addison-Wesley, Harlow, England | | | |
| **Additional Literature:** | 1. *Lee, K., Principles of CAD/CAM/CAE Systems, Addison-Wesley, Reading, Massachusetts* | | | |
| **Ratio between theory and practice** | *60% Theory*  *40% Practical work* | | | |

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| **Designed learning plan** | |
| **Week:** | **Lectures and exercises to be held** |
| **Week one:** | *Introduction to CAD* |
| **Week two:** | *Introduction to CAM* |
| **Week three:** | *Integration of Computer Aided Design (CAD) and Computer Aided Manufacturing (CAM).* |
| **Week four:** | *Integration of Computer Aided Design (CAD) and Computer Aided Manufacturing (CAM).* |
| **Week five:** | *The modern development of prototypes and their methods of processing, learning the use of software.* |
| **Week six:** | *The modern development of prototypes and their methods of processing, learning the use of software.* |
| **Week seven:** | *Converting 2D and 3D CAD drawings.* |
| **Week eight:** | *Converting 2D and 3D CAD drawings.* |
| **Week nine:** | *Processing the information needed for CNC machines.* |
| **Week ten:** | *Processing the information needed for CNC machines.* |
| **Week eleven:** | *Programming with CNC machines.* |
| **Week twelve:** | *Programming with CNC machines.* |
| **Week thirteen:** | *Management of design improvements and operational capacities and capabilities.* |
| **Week fourteen:** | *Management of design improvements and operational capacities and capabilities.* |
| **Week fifteen:** | *Reverse Engineering.* |

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| **Academic policies and rules of conduct** |
| *Regular attendance of lectures and exercises is necessary, as well as active participation with discussion and solution of tasks. Not impeding the progress required for learning using mobile phones turned off or in silent mode.* |