COMPUTER AIDED GRAPHICS
(Specialization ENVIRONMENTAL ENGINEERING, 2th Year of study, 2th Semester)

Credit value (ECTS): 5

Course category: mandatory

Course holder:
Assist. arch. GRECU Codrina, PhD

Discipline objectives (course and practical works)
The Computer Aided Graphics discipline aims to:
• Learning the basic notions necessary to achieve computer-assisted graphical representations, under the AutoCAD interface.
• To use correctly the AutoCAD program and its drawing tools but also the theoretical concepts of technical drawing in the realization of computer graphics applications;
• To acquire the ability to design and represent in AutoCAD detailed projects of some parts or constructions in the field of environmental engineering.

Contents (syllabus)

Course (chapters/subchapters)
1. Introductory notions 1.1 Definition and object of the course. 1.2 AutoCAD - Overview.
2. Create a new drawing in AutoCAD. Utility commands 2.1 Create New Drawing window, AutoCAD graphic screen, using AutoCAD commands 2.2 Commands LIMITS, UNITS, NEW, OPEN, SAVE, SAVE AS, EXIT, CLOSE. Applications.
3. Organizing a work session in AutoCAD 3.1 Coordinate systems 3.2 Image display control: REDRAW commands; REGEN ZOOM; PAN; 3.3 Using drawing aid tools: SNAP commands; GRID; ORTHO; the ObjectSNAP mechanism. 3.4 Applications
4. 2D object drawing commands - Part I 4.1 LINE, MLINE, POINT, CIRCLE, ARC, TRACE, PLINE, ELLIPSE, POLYGON commands. 4.2 Applications
5. Object editing commands - Part I 5.1 ERASE, MOVE, COPY, MIRROR, STRETCH, BREAK, TRIM, EXTEND, OFFSET, FILLET, ARRAY controls. 5.2 Applications
6. Quotation orders and quota editing. 6.1 Object quotation commands 6.2 Quota editing commands 6.3 Applications

Practical works
1. Applications for creating a new drawing in AutoCAD.

2. Applications with the organization of a working session in AutoCAD
3. Applications for drawing commands
4. Applications for editing commands
5. Applications for listing orders
6. Applications for drawing, editing and dimensioning commands.

Bibliography

1. **Anghel A., Prună L., 2005** - *Desen tehnic cu AutoCAD*, Ed. Tehnopress, Iași;
2. Brăduţ M., 2006 - *AutoCAD-ul în trei timpi, ghidul proiectării profesionale - Ediţia a 2 a***,** Editura POLIROM, Iași;
2. Dănilă D., Gaceu L., 2009 - *Grafica asistată de calculator: aplicații 2D***,** Editura Universității Transilvania, Brașov;
3. Harrington David, Burchard Bill; Pitzer, David Place, 2002 - *AutoCAD 2002***,** Editura Teora, București;
4. Marinescu Gh. , 2002 - *Aplicații AutoCAD în construcții*, Ed.CONTEGEDO, Bucureşti;
5. Nichita Gabriela Georgeta, 2006 - *Bazele proiectării asistate de calculator***,** Îndrumător de lucrări, Oradea;
6. Nichita Gabriela Georgeta, 2009 - *Bazele proiectării asistate de calculator***,** Note de curs, Oradea;
7. Opruţa Daniela, 2003 - *Proiectarea asistată de calculator***,** Vol.1, Editura Dacia, Cluj-Napoca;
8. Pop Mircea T., 2004 - *Elemente de teorie și aplicații CAD***,** Editura Universității din Oradea;
9. Simion I., 2008 - *AutoCAD 2008 pentru ingineri***,** Editura Teora, București;
10. Simion I., 2010 - *AutoCAD 2010 pentru ingineri***,** Editura Teora, București.
11. Slonovschi A., ş.a. , 2007 - *Infografică. Îndrumar de laborator*, Ed. PIM, Iaşi;
***** – AutoCAD**

Evaluation

Evaluation form	Evaluation Methods	Percentage of the final grade
Course	Exam	60%
	presence	10%
Practical works	Works and evaluation along the way	30%

Contact

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Contents (syllabus)

Course (chapters/subchapters)
1. 2D object drawing commands - part II 1.1 Controls: DONUT, SOLID, TABLE, PLINE, SKETCH, DIVIDE, MEASURE, SPLINE. 1.2 Applications
2. Information orders 2.1 ID commands; DIST AREA; LIST; MASSPROP. 2.2 Applications
3. Notions of object properties 3.1 Organizing a layered drawing 3.2 Selecting objects 3.3 Modifying object properties; PROPERTIES, MATCHPROPERTIES commands. 3.4 Applications
4. Object editing commands - part II 4.1 Commands: SCALE, ROTATE, CHAMFER, EXPLODE, PEDIT, DDEDIT, DDMODIFY. 4.2 Applications
5. Object hatching commands. 5.1 Hatching commands 5.2 Hatch editing commands. 5.3 Applications
6. Text writing commands. 6.1 Drawing commands 6.2 Editing commands. 6.3 6.3 Applications

Practical works
1. Applications to 2D object drawing commands - Part II (Schemes of reverse osmosis treatment or desalination plants)
2. Applications to information commands (Schemes of reverse osmosis treatment or desalination plants)

3. Notions regarding the organization of the drawing and the properties of the objects 3.1 Applications in organizing a layered drawing
4. Applications in object selection and object object modification; PROPERTIES, MATCHPROPERTIES commands (Schemes of reverse osmosis treatment or desalination plants)
5. Applications with object editing commands - part II (Schemes of some reverse osmosis treatment or desalination plants)
6. Applications with object hatching controls (Schemes of reverse osmosis treatment or desalination plants)
7. Applications with text writing commands (Schemes of some reverse osmosis treatment or desalination plants)

Bibliography

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