Position: Professor, position 9

Disciplines: *Descriptive Geometry*
                 Technical Drawing and Infographics
                 Programming of Production Systems with NC

Thematics:

I. Descriptive Geometry:

I. 1.   Determining the plane. Relative positions of two planes. Position of a line relative to a plane. Visibility in orthogonal projection.

I. 2.   Methods of transforming projections: method of changing projection planes; rotation method; method of folding planes

I. 3.   Representation of geometric bodies

I. 4.   Planar sections in polyhedra and cylindro-conical bodies

I. 5.   Development of geometric bodies surfaces.

I. 6.   Intersection of geometric bodies. Specific cases

I. 7.   Orthogonal isometric axonometry.

II. Technical Drawing and Infographics:

II. 1.   Dimensioning in technical drawing - dimensioning methods.

II. 2.   Representation and dimensioning of threads.

II. 3.   Notation of the material on execution drawings. Surface condition notation. Notation of dimensional and positional tolerances on execution drawings.

II. 4.   Detachable assemblies: threaded assemblies.

II. 5.   Representation of non-detachable assemblies: by riveting; by welding or adhesive bonding.

II. 6.   Representation of gears and gear mechanisms. Representation of shafts. Representation of connections by pins and keyways. Representation of bearings. Representation of sealing elements.

II. 7.   Drawing with AutoCAD (drawing modes, environmental commands, drawing commands, point filters).

II. 8.   Editing in AutoCAD. Dimensioning in AutoCAD. Hatching in AutoCAD.

III.   Programming of Production Systems with NC

III. 1.   CNC machining system. Axes and movements of CNC machines. Elements of a numerical control program. Format for the safe startup line.

III. 2.   Functions from groups 00 and 01: G04 and G09, respectively G00, G01, G02, G03.

III. 3.   Functions from group 02: G17, G18, and G19.

III. 4.   Functions from group 07: G40, G41, and G42. Selection of the machine coordinate system.

III. 5.   Drilling cycles: G73, G81, G82, G83. Threading cycles: G74 and G84.

III. 6.   Turning cycles, Functions G71, G72, and G73.

III. 7.   Finishing cycle, Function G70.

III. 8.   Functions M35 - G84 and Functions M35 - G88 for rigid threading. Functions M98 and M99.

Selective Bibliography

Descriptive Geometry:

1. Moncea,J – Geometrie descriptivă şi desen tehnic, Editura didactică şi pedagogică, Bucureşti,1982.
2. Noveanu, L.; Orban, M. – Geometrie descriptivă, Universitatea Tehnică din Cluj-Napoca, 1992;
3. Raicu, Lucian – Grafic şi visual între clasic şi modern, Editura Paideia, Bucureşti, 2002;
4. Precupeţu, P.; Dale, C. – Probleme de geometrie descriptivă cu aplicaţii în tehnică, Editura Tehnică, Bucureşti, 1987;
5. Drăgan, D.; Mârza, C. – Geometrie descriptivă. Probleme, Editura UTPRES, Cluj-Napoca, 2005;
6. Dumitrescu, C. – Culegere de probleme şi aplicaţii de geometrie descriptivă, Editura Politehnica Timişoara, 2009

Technical Drawing and Infographics:

1. Marin, D; Raicu, L.; Adir, V.; Dobre, D. – *Desen tehnic industrial. Teorie si aplicatii* Editura 57 BREN, Bucuresti, 2010;
2. Ene Al.I. – *Desen tehnic industrial*, Editura SITECH, Craiova, 1995;
3. Duţă A, Popa D.L.,Sass, L, Barbu A.M, Didu A. – *Desen tehnic si Infografica*. Indrumar pentru lucrari practice, Editura Universitaria, 2020;
4. Sass, L, Duta, A., Popa, D. – *Aplicaţii grafice în AutoCAD*, Ed. Sitech, Craiova 2015;
5. I.R.S. Catalogul Standardelor Române ,Editura Tehnică, Bucureşti

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1. Vasilescu, E. – Desen tehnic. Teme. Elemente de introducere în proiectare, UPB, 2004;
2. Ivan, V.N., ş.a, - Sisteme CAD/CAPP/CAM – Teorie si practică, Editura Tehnică, Bucureşti, 2004;
3. Stanimir, Al. – Tehnologii de prelucrare pe strunguri cu comandă numerică, Operare şi Programare, Editura Universitaria Craiova, 2002;
4. Zapciu, M. – Fabricaţia asistată de calculator, Editura Politehnica Press, Bucureşti, 2003.