



**DISCIPLINE FACULTATIVE**  
**An universitar 2015 - 2016**

|             | ANUL I      |                              |                |                              | ANUL II     |                              |  |                              |
|-------------|-------------|------------------------------|----------------|------------------------------|-------------|------------------------------|--|------------------------------|
|             | SEMESTRUL 1 |                              | SEMESTRUL 2    |                              | SEMESTRUL 3 |                              | SEMESTRUL 4                              |                              |
| 1.          |             |                              | Volunteering   |                              |             |                              | Social responsibility and civic activism |                              |
|             |             |                              | L430.15.02.F1. | 2   C   0   0   28   0   DC  |             |                              | L430.15.04.F1.                           | 2   E   28   28   0   0   DC |
| 2.          |             |                              |                |                              |             |                              | Volunteering                             |                              |
|             |             |                              |                |                              |             |                              | L430.15.04.F2.                           | 2   C   0   0   28   0   DC  |
| 3.          |             |                              |                |                              |             |                              |  |                              |
|             |             |                              |                |                              |             |                              |  |                              |
| total/sem.  | ore: 0      | VPI: 0                       | ore: 28        | VPI: 0                       | ore: 0      | VPI: 0                       | ore: 84                                  | VPI: 0                       |
|             | credite: 0  | evaluări:                    | credite: 2     | evaluări:                    | credite: 0  | evaluări:                    | credite: 4                               | evaluări:                    |
| total/săpt. | ore: 0      |                              | ore: 2         |                              | ore: 0      |                              | ore: 6                                   |                              |
|             | din care:   | 0   0   0   0   (c, s, l, p) | din care:      | 0   0   2   0   (c, s, l, p) | din care:   | 0   0   0   0   (c, s, l, p) | din care:                                | 2   2   2   0   (c, s, l, p) |

| Legenda  |    |    |    |    |   |   |    |     |  |
|--|----|----|----|----|---|---|----|-----|--|
| Nume disciplina  |    |    |    |    |   |   |    |     |  |
| Cod  | nc | FE | c  | s  | l | p | CF | VPI |  |
| <p><b>Cod</b> = cod disciplina<br/> <b>nc</b> = nr.credite transferabile<br/> <b>FE</b> = forma de evaluare<br/> <b>FE</b> ∈ {E, D, C, P-E, P-D}<br/> <b>E</b>=examen<br/> <b>D</b>=evaluare distribuita<br/> <b>C</b>=colocviu<br/> <b>P - E</b> - proiect autonom cu examinare ca si in cazul<br/> <b>P - D</b> - proiect autonom cu examinare ca si in cazul<br/> <b>c</b>=nr.ore curs/semestru<br/> <b>(*)</b> - discipline optionale activate in anul universitar 2015 / 2016</p> |    |    |    |    |   |   |    |     |  |
| <p><b>s</b>=nr.ore seminar<br/> <b>l</b>=nr.ore laborator<br/> <b>p</b>=nr.ore proiect<br/> <b>CF</b>=categorii formative careia ii apartine disciplina<br/> <b>CF</b> ∈ {DC, DD, DF, DS}<br/> <b>DC</b> - disciplina complementara<br/> <b>DD</b> - disciplina in domeniu<br/> <b>DF</b> - disciplina fundamentala<br/> <b>DS</b> - disciplina de specialitate<br/> <b>VPI</b> = volum de ore necesar pregatirii individuale</p>  |    |    |    |    |   |   |    |     |  |
| <b>Exemplu</b>   |    |    |    |    |   |   |    |     |  |
| <b>Analiza matematica</b>  |    |    |    |    |   |   |    |     |  |
| Cod  | 4  | E  | 28 | 28 | 0 | 0 | DF | 60  |  |

RECTOR,  
Prof.univ.dr.ing.Viorel-Aurel ȘERBAN

DECAN,  
Prof.dr.ing. Inocențiu MANIU

**Domeniul fundamental de ierarhizare (DFI):** Științe ingineresti  
**Ramura de știință (RSI):** Inginerie mecanică, mecatronică, Inginerie industrială și management  
**Domeniul de ierarhizare (DII):** Inginerie mecanică  
**Domeniul de licență (DL):** Inginerie mecanică  
**Specializarea (S):** Inginerie mecanică

|         |         |         |        |       |
|---------|---------|---------|--------|-------|
| Cod DFI | Cod RSI | Cod DII | Cod DL | Cod S |
| 20      | 70      | 10      | 180    | 50    |

|       |        |      |
|-------|--------|------|
| ciclu | c1c2c3 | a1a2 |
| L     | 430    | 15   |

**PLAN DE ÎNVĂȚĂMÂNT**  
**An universitar 2015 - 2016**

|             |   | ANUL III                            |  |   |                       | ANUL IV                                |             |                                   |  |  |                       |                                    |   |  |  |  |
|-------------|---|-------------------------------------|--|---|-----------------------|--|-------------|-----------------------------------|--|--|-----------------------|------------------------------------|---|--|--|--|
|             |   | SEMESTRUL 5                         |  | SEMESTRUL 6                                 |                       | SEMESTRUL 7                            |             | SEMESTRUL 8                       |  |  |                       |                                    |   |  |  |  |
| 1.          | Mechanical Engineering Design and Mechanisms        | L430.15.05.D1. 5 E 42 0 28 0 DD 75  |  | Mechanical Engineering Design and Tribology |                       | L430.15.06.D1. 5 E 28 0 14 28 DD 75    |             | Management                        |  | L430.15.07.C1. 2 D 14 14 0 0 DC 30     |                       | Marketing                          |   | L430.15.08.C1. 2 E 14 14 0 0 DC 30     |  |  |
| 2.          | Fluid Mechanics and Hydraulic Machines I            | L430.15.05.D2. 5 E 28 21 14 0 DD 65 |  | Fluid Mechanics and Hydraulic Machines II   |                       | L430.15.06.D2. 4 E 28 7 28 0 DD 50     |             | Independent Optional Discipline 4 |  | L430.15.07.S2.-ij 4 E 28 0 14 0 DS 45  |                       | Communication                      |   | L430.15.08.C2. 1 D 14 0 0 0 DC 20      |  |  |
| 3.          | Thermotechnics I                                    | L430.15.05.D3. 5 E 28 21 14 0 DD 65 |  | Thermotechnics II                           |                       | L430.15.06.D3. 4 E 28 7 14 0 DD 55     |             | Independent Optional Discipline 5 |  | L430.15.07.S3.-ij 5 E 28 0 14 28 DS 70 |                       | Packed Optional Discipline 1       |   | L430.15.08.S3.-ij 4 E 21 0 14 14 DS 70 |  |  |
| 4.          | Hydraulic and Pneumatic Actuators                   | L430.15.05.D4. 3 E 28 0 14 0 DD 45  |  | Dynamics of Machines and Equipments         |                       | L430.15.06.D4. 4 D 28 0 14 0 DD 55     |             | Independent Optional Discipline 6 |  | L430.15.07.S4.-ij 4 E 28 0 14 0 DS 45  |                       | Packed Optional Discipline 2       |   | L430.15.08.S4.-ij 4 E 21 0 28 0 DS 70  |  |  |
| 5.          | Finite Element Method I                             | L430.15.05.D5. 3 D 14 0 28 0 DD 45  |  | Independent Optional Discipline 1           |                       | L430.15.06.S5.-ij 3 D 28 0 0 14 DS 45  |             | Independent Optional Discipline 7 |  | L430.15.07.S5.-ij 5 E 28 0 14 14 DS 65 |                       | Independent Optional Discipline 10 |   | L430.15.08.S4.-ij 4 E 14 0 14 14 DS 70 |  |  |
| 6.          | Fabrication Technologies, Maintenance and Recycling | L430.15.05.D6. 4 D 28 0 7 7 DD 45   |  | Independent Optional Discipline 2           |                       | L430.15.06.S6.-ij 4 E 28 0 14 0 DS 45  |             | Independent Optional Discipline 8 |  | L430.15.07.S6.-ij 6 D 28 0 28 28 DS 85 |                       | Graduation Paper Development*      |   | 5 D 182                                |  |  |
| 7.          | Process System Engineering                          | L430.15.05.D7. 3 D 28 0 14 0 DD 50  |  | Independent Optional Discipline 3           |                       | L430.15.06.S7.-ij 4 D 28 0 14 14 DS 45 |             | Independent Optional Discipline 9 |  | L430.15.07.S7.-ij 4 D 28 0 14 0 DS 50  |                       | Graduation Exam**                  |   | 10 E 0                                 |  |  |
| 8.          | Practical Training 45 h/centralizat                 | L430.15.05.D8. 2 C DD               |  | Practical Training 45 h/centralizat         |                       | L430.15.06.D7. 2 C DD                  |             |                                   |  |  |                       |                                    |   |  |  |  |
| 9.          |   |                                     |  |   |                       |  |             |                                   |  |  |                       |                                    |   |  |  |  |
| total/sem.  | ore: 364  | VPI: 390                            |  | ore: 364                                    | VPI: 370              |  | ore: 364    | VPI: 390                          |  | ore: 364                               | VPI: 260              |                                    |   |  |  |  |
|             | credite: 30   | evaluări: 4E, 3D, 1C                |  | credite: 30                                 | evaluări: 4E, 3D, 1C  |  | credite: 30 | evaluări: 4E, 3D                  |  | credite: 30                            | evaluări: 5E, 2D      |                                    | 7 |  |  |  |
| total/săpt. | ore: 26   |                                     |  | ore: 26                                     |                       |  | ore: 26     |                                   |  | ore: 26                                |                       |                                    |   |  |  |  |
|             | din care:   | 14 3 8,5 0,5 (c, s, l, p)           |  | din care:                                   | 14 1 7 4 (c, s, l, p) |  | din care:   | 13 1 7 5 (c, s, l, p)             |  | din care:                              | 6 1 4 15 (c, s, l, p) |                                    |   |  |  |  |

\* cu durata de 7 săptămâni x 26 ore din care stagiu de practică 2 săptămâni x 26 ore; \*\*constă din: a. verificarea cunoștințelor fundamentale și de specialitate; b. susținerea lucrării de licență/diplomă.

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**DISCIPLINE OPTIONALE**  
An universitar 2015 - 2016

|     |  | ANUL III   |  |  |  |  |  |  |  |  |  | ANUL IV   |  |  |  |  |  |  |  |  |  |                                     |  |
|-----|--|--|--|--|--|--|--|--|--|--|--|---|--|--|--|--|--|--|--|--|--|-------------------------------------|--|
|     |  | SEMESTRUL 5  |  |  |  |  | SEMESTRUL 6  |  |  |  |  | SEMESTRUL 7   |  |  |  |  | SEMESTRUL 8  |  |  |  |  |                                     |  |
| 01  |  |  |  |  |  |  | Independent Optional Discipline 1<br>1 Fracture mechanics and plastic deformation  |  |  |  |  | Independent Optional Discipline 4<br>1 Experimental methods in Mechanical engineering |  |  |  |  | Packed Optional Discipline 1<br>1 Mechanics, construction and design of structures * |  |  |  |  | Pachetul 1P1.8.1<br>din setul 1P1.8 |  |
|     |  | L430.15.06.S5.-01   4   D   28   0   0   14   DS   45  |  |  |  |  | L430.15.07.S2.-01   4   E   28   0   14   0   DS   45                              |  |  |  |  | L430.15.08.S3.-01   4   E   21   0   14   14   DS   70                                |  |  |  |  |  |  |  |  |  |                                     |  |
| 02  |  |  |  |  |  |  | Independent Optional Discipline 1<br>2 Composite materials                         |  |  |  |  | Independent Optional Discipline 4<br>2 Measurement techniques in engineering          |  |  |  |  | Packed Optional Discipline 1<br>2 Special problems in Strength of materials          |  |  |  |  | Pachetul 1P1.8.2<br>din setul 1P1.8 |  |
|     |  | L430.15.06.S5.-02   4   D   28   0   0   14   DS   45  |  |  |  |  | L43   4   E   28   0   14   0   DS   45  |  |  |  |  | L430.15.08.S4.-02   4   E   21   0   28   0   DS   70                                 |  |  |  |  |  |  |  |  |  |                                     |  |
| 03  |  |  |  |  |  |  | Independent Optional Discipline 2<br>1 Refrigeration and heating installations     |  |  |  |  | Independent Optional Discipline 5<br>1 Lifting and Transportation Systems             |  |  |  |  | Packed Optional Discipline 2<br>1 Statics, stability and dynamics of structures      |  |  |  |  | Pachetul 1P1.8.2<br>din setul 1P1.8 |  |
|     |  | L430.15.06.S6.-03   4   E   28   0   0   14   DS   45  |  |  |  |  | L430.15.07.S3.-03   5   E   28   0   14   28   DS   70                             |  |  |  |  | L430.15.08.S3.-03   4   E   21   0   14   14   DS   70                                |  |  |  |  |  |  |  |  |  |                                     |  |
| 04  |  |  |  |  |  |  | Independent Optional Discipline 2<br>2 Mass and Heat Transfer                      |  |  |  |  | Independent Optional Discipline 5<br>2 Systems and equipments for transport           |  |  |  |  | Packed Optional Discipline 2<br>2 Contact mechanics                                  |  |  |  |  | Pachetul 1P1.8.2<br>din setul 1P1.8 |  |
|     |  | L430.15.06.S6.-04   4   E   28   0   0   14   DS   45  |  |  |  |  | L430.15.07.S3.-04   5   E   28   0   14   28   DS   70                             |  |  |  |  | L430.15.08.S4.-04   4   E   21   0   28   0   DS   70                                 |  |  |  |  |  |  |  |  |  |                                     |  |
| 05  |  |  |  |  |  |  | Independent Optional Discipline 3<br>1 Turbo machines                              |  |  |  |  | Independent Optional Discipline 6<br>1 Tools, Devices and Verification equipment      |  |  |  |  | Independent Optional Discipline 10<br>1 Finite Element Method II                     |  |  |  |  | Pachetul 1P1.8.2<br>din setul 1P1.8 |  |
|     |  | L430.15.06.S7.-05   4   D   28   0   14   14   DS   45 |  |  |  |  | L430.15.07.S4.-05   4   E   28   0   14   0   DS   45                              |  |  |  |  | L430.15.08.S5.-05   4   E   14   0   14   14   DS   70                                |  |  |  |  |  |  |  |  |  |                                     |  |
| 06  |  |  |  |  |  |  | Independent Optional Discipline 3<br>2 Hydromechanics equipments and installations |  |  |  |  | Independent Optional Discipline 6<br>2 Welding technology                             |  |  |  |  | Independent Optional Discipline 10<br>2 Thermo-mechanical Numerical Stress Analysis  |  |  |  |  | Pachetul 1P1.8.2<br>din setul 1P1.8 |  |
|     |  | L430.15.06.S7.-06   4   D   28   0   14   14   DS   45 |  |  |  |  | L430.15.07.S4.-06   4   E   28   0   14   0   DS   45                              |  |  |  |  | L430.15.08.S5.-06   4   E   14   0   14   14   DS   70                                |  |  |  |  |  |  |  |  |  |                                     |  |
| 07  |  |  |  |  |  |  |  |  |  |  |  | Independent Optional Discipline 7<br>1 Heat treatment                                 |  |  |  |  |  |  |  |  |  | Pachetul 1P1.8.2<br>din setul 1P1.8 |  |
|     |  |  |  |  |  |  |  |  |  |  |  | L430.15.07.S5.-07   5   E   28   0   14   14   DS   65                                |  |  |  |  |  |  |  |  |  |                                     |  |
| 08  |  |  |  |  |  |  |  |  |  |  |  | Independent Optional Discipline 7<br>2 Materials and technology selection             |  |  |  |  |  |  |  |  |  | Pachetul 1P1.8.2<br>din setul 1P1.8 |  |
|     |  |  |  |  |  |  |  |  |  |  |  | L430.15.07.S5.-08   5   E   28   0   14   14   DS   65                                |  |  |  |  |  |  |  |  |  |                                     |  |
| 09  |  |  |  |  |  |  |  |  |  |  |  | Independent Optional Discipline 8<br>1 Design of machines and installations           |  |  |  |  |  |  |  |  |  | Pachetul 1P1.8.2<br>din setul 1P1.8 |  |
|     |  |  |  |  |  |  |  |  |  |  |  | L430.15.07.S6.-09   6   D   28   0   28   28   DS   85                                |  |  |  |  |  |  |  |  |  |                                     |  |
| 010 |  |  |  |  |  |  |  |  |  |  |  | Independent Optional Discipline 8<br>2 CAD design systems                             |  |  |  |  |  |  |  |  |  | Pachetul 1P1.8.2<br>din setul 1P1.8 |  |
|     |  |  |  |  |  |  |  |  |  |  |  | L430.15.07.S6.-010   6   D   28   0   28   28   DS   85                               |  |  |  |  |  |  |  |  |  |                                     |  |
| 011 |  |  |  |  |  |  |  |  |  |  |  | Independent Optional Discipline 9<br>1 Air pollution and burning installations        |  |  |  |  |  |  |  |  |  | Pachetul 1P1.8.2<br>din setul 1P1.8 |  |
|     |  |  |  |  |  |  |  |  |  |  |  | L430.15.07.S7.-011   3   D   28   0   14   0   DS   50                                |  |  |  |  |  |  |  |  |  |                                     |  |
| 012 |  |  |  |  |  |  |  |  |  |  |  | Independent Optional Discipline 9<br>2 Environmental protection                       |  |  |  |  |  |  |  |  |  | Pachetul 1P1.8.2<br>din setul 1P1.8 |  |
|     |  |  |  |  |  |  |  |  |  |  |  | L430.15.07.S7.-012   3   D   28   0   14   0   DS   50                                |  |  |  |  |  |  |  |  |  |                                     |  |

**Nota:** Din fiecare dintre grupurile de **Discipline optionale** se activează un număr de discipline în funcție de opțiunile studenților, de numărul studenților și de acoperirea financiară.

RECTOR,  
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**DISCIPLINE FACULTATIVE**  
An universitar 2015 - 2016

|             |  | ANUL III       |      |   |     |      |             |      |      |     |   | ANUL IV        |      |   |     |      |             |      |      |     |  |                |           |   |    |              |           |           |      |    |  |                |           |   |    |    |    |              |      |    |
|-------------|--|----------------|------|---|-----|------|-------------|------|------|-----|---|----------------|------|---|-----|------|-------------|------|------|-----|--|----------------|-----------|---|----|--------------|-----------|-----------|------|----|--|----------------|-----------|---|----|----|----|--------------|------|----|
|             |  | SEMESTRUL 5    |      |   |     |      | SEMESTRUL 6 |      |      |     |   | SEMESTRUL 7    |      |   |     |      | SEMESTRUL 8 |      |      |     |  |                |           |   |    |              |           |           |      |    |  |                |           |   |    |    |    |              |      |    |
| 1.          | Advanced Programming Languages *   | L430.15.05.F1. | 4    | D | 28  | 0    | 28          | 0    | DC-F | 60  | Databases *   | L430.15.06.F1. | 4    | D | 28  | 0    | 28          | 0    | DC-F | 65  | International Languages in interprofessional communication * | L430.15.07.F1. | 3         | D | 14 | 0            | 28        | 0         | DC-F | 50 | Didactics of specialty                                     | L430.15.08.F1. | 5         | E | 28 | 28 | 0  | 0            | DC-F | 60 |
| 2.          | Pedagogy of education  | L430.15.05.F2. | 4    | D | 28  | 0    | 28          | 0    | DC-F | 60  | Pedagogy II, Theory and Methodology of Training, Theory and Methodology of Evaluation | L430.15.06.F2. | 4    | D | 28  | 0    | 28          | 0    | DC-F | 65  | Computer assisted instruction                                | L430.15.07.F2. | 3         | D | 14 | 0            | 14        | 0         | DC-F | 50 | Teaching practice in mandatory preuniversity education (I) | L430.15.08.F2. | 2         | D | 0  | 0  | 36 | 0            | DC-F | 50 |
| 3.          | Pedagogy I Foundations of Pedagogy, Theory and methodology of curriculum | L430.15.05.F3. | 4    | D | 28  | 0    | 28          | 0    | DC-F | 60  | Classroom Management  | L430.15.06.F3. | 4    | D | 28  | 0    | 28          | 0    | DC-F | 65  | Teaching practice in mandatory preuniversity education (I)   | L430.15.07.F3. | 3         | D | 14 | 0            | 42        | 0         | DC-F | 50 | Volunteering   | L430.15.08.C3. | 2         | C | 0  | 0  | 28 | 0            | DC   |    |
| 4.          |  |                |      |   |     |      |             |      |      |     | Volunteering  | L430.15.06.C4  | 2    | C | 0   | 0    | 28          | 0    | DC   |     |  |                |           |   |    |              |           |           |      |    |  |                |           |   |    |    |    |              |      |    |
| total/sem.  | ore:   | 168            | VPI: |   | 180 | ore: | 168         | VPI: |      | 195 | ore:  | 126            | VPI: |   | 150 | ore: | 120         | VPI: |      | 110 | credite:   | 12             | evaluări: |   |    | credite:     | 9         | evaluări: |      |    |  |                |           |   |    |    |    |              |      |    |
| total/săpt. | ore:   | 12             |      |   |     | ore: | 12          |      |      |     | ore:  | 9              |      |   |     | ore: | 8,571       |      |      |     | din care:  | 6              | 0         | 6 | 0  | (c, s, l, p) | din care: | 3         | 0    | 6  | 0  | (c, s, l, p)   | din care: | 2 | 2  | 5  | 0  | (c, s, l, p) |      |    |

| Legenda   |    |    |    |    |   |   |    |     |  |                    |  |  |  |  |  |  |  |  |  |     |   |   |    |    |   |   |    |    |  |
|---|----|----|----|----|---|---|----|-----|--|--------------------|--|--|--|--|--|--|--|--|--|-----|---|---|----|----|---|---|----|----|--|
| Nume disciplina   |    |    |    |    |   |   |    |     |  |                    |  |  |  |  |  |  |  |  |  |     |   |   |    |    |   |   |    |    |  |
| Cod   | nc | FE | c  | s  | l | p | CF | VPI |  |                    |  |  |  |  |  |  |  |  |  |     |   |   |    |    |   |   |    |    |  |
| <p><b>Cod</b> = cod disciplina<br/> <b>nc</b> = nr.credite transferabile<br/> <b>FE</b> = forma de evaluare<br/> <b>FE</b> ∈ {E, D, C, P-E, P-D}<br/> E=examen<br/> D=evaluare distribuita<br/> C=colocviu<br/> P - E - proiect autonom cu examinare ca si in cazul<br/> P - D - proiect autonom cu examinare ca si in cazul<br/> c=nr.ore curs/semestru</p> <p>s=nr.ore seminar<br/> l=nr.ore laborator<br/> p=nr.ore proiect<br/> CF=categorii formative careia ii apartine disciplina<br/> CF ∈ {DC, DD, DF, DS}<br/> DC - disciplina complementara<br/> DD - disciplina in domeniu<br/> DF - disciplina fundamentala<br/> DS - disciplina de specialitate<br/> VPI = volum de ore necesar pregatirii individuale</p> <p align="center"><b>Exemplu</b></p> <table border="1"> <thead> <tr> <th colspan="10">Analiza matematica</th> </tr> <tr> <td>Cod</td> <td>4</td> <td>E</td> <td>28</td> <td>28</td> <td>0</td> <td>0</td> <td>DF</td> <td>60</td> <td></td> </tr> </thead></table> |    |    |    |    |   |   |    |     |  | Analiza matematica |  |  |  |  |  |  |  |  |  | Cod | 4 | E | 28 | 28 | 0 | 0 | DF | 60 |  |
| Analiza matematica  |    |    |    |    |   |   |    |     |  |                    |  |  |  |  |  |  |  |  |  |     |   |   |    |    |   |   |    |    |  |
| Cod   | 4  | E  | 28 | 28 | 0 | 0 | DF | 60  |  |                    |  |  |  |  |  |  |  |  |  |     |   |   |    |    |   |   |    |    |  |
| (*) - discipline optionale activate in anul universitar 2015 / 2016   |    |    |    |    |   |   |    |     |  |                    |  |  |  |  |  |  |  |  |  |     |   |   |    |    |   |   |    |    |  |

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