

**„GHEORGHE ASACHI” TECHNICAL UNIVERSITY OF IASI**  
**FACULTY OF MACHINE MANUFACTURING AND INDUSTRIAL MANAGEMENT**

Level of qualification: **Bachelor studies**

Field of study: **Mechanical Engineering**

Programme of Study: **Fluid Machines and Systems**

Conferred title: engineer degree

Study duration: 4 years, 240 ECTS

Form of education: *full-time*

**CURRICULUM - 1<sup>st</sup> year of study**

| No. | Course name                                                 | Course code   | Type | Pre-requisites | 1 <sup>st</sup> semester |     |   |   |       |    |    |             | 2 <sup>nd</sup> semester |   |   |       |    |    |  |  |
|-----|-------------------------------------------------------------|---------------|------|----------------|--------------------------|-----|---|---|-------|----|----|-------------|--------------------------|---|---|-------|----|----|--|--|
|     |                                                             |               |      |                | No of hours              |     |   |   | Hours | Ev | K  | No of hours |                          |   |   | Hours | Ev | K  |  |  |
|     |                                                             |               |      |                | C                        | S   | L | P | SI    |    |    | C           | S                        | L | P | SI    |    |    |  |  |
| 1   | Linear Algebra, Analytical and Differential Geometry        | CMMI-L-1.01   | DI   | -              | 3                        | 2   | 0 | 0 | 65    | E  | 5  |             |                          |   |   |       |    |    |  |  |
| 2   | Mathematical Analysis 1                                     | CMMI-L-1.02   | DI   | -              | 2                        | 1.5 | 0 | 0 | 59    | E  | 4  |             |                          |   |   |       |    |    |  |  |
| 3   | Computer Programming                                        | CMMI-L-1.03   | DI   | -              | 1                        | 0   | 2 | 0 | 39    | E  | 3  |             |                          |   |   |       |    |    |  |  |
| 4   | Descriptive Geometry and Technical Drawing 1                | CMMI-L-1.04.a | DI   | -              | 2                        | 3   | 0 | 0 | 65    | C  | 5  |             |                          |   |   |       |    |    |  |  |
| 5   | Chemistry                                                   | CMMI-L-1.05   | DI   | -              | 1                        | 0   | 1 | 0 | 26    | C  | 2  |             |                          |   |   |       |    |    |  |  |
| 6   | Materials Science                                           | CMMI-L-1.06   | DI   | -              | 2.5                      | 0   | 2 | 0 | 79    | E  | 5  |             |                          |   |   |       |    |    |  |  |
| 7   | Fundamentals of Economics                                   | CMMI-L-1.07.a | DI   | -              | 2                        | 0   | 0 | 0 | 53    | C  | 3  |             |                          |   |   |       |    |    |  |  |
| 8   | Physical Training and Sports 1                              | CMMI-L-1.08   | DI   | -              | 0                        | 1   | 0 | 0 | 13    | C  | 1  |             |                          |   |   |       |    |    |  |  |
| 9   | Professional Communication                                  | CMMI-L-1.09   | OC   | -              | 2                        | 0   | 0 | 0 | 26    | C  | 2  |             |                          |   |   |       |    |    |  |  |
|     | History of Technics                                         | CMMI-L-1.10   | OC   | -              |                          |     |   |   |       |    |    |             |                          |   |   |       |    |    |  |  |
| 10  | Mathematical Analysis 2                                     | CMMI-L-2.01   | DI   | C1,C2          |                          |     |   |   |       |    |    | 2.5         | 1.5                      | 0 | 0 | 79    | E  | 5  |  |  |
| 11  | Computer-Aided Engineering Graphics and Applied Informatics | CMMI-L-2.02   | DI   | C3             |                          |     |   |   |       |    |    | 1           | 0                        | 4 | 0 | 65    | C  | 5  |  |  |
| 12  | Descriptive Geometry and Technical Drawing 2                | CMMI-L-2.03   | DI   | C4             |                          |     |   |   |       |    |    | 2           | 3                        | 0 | 0 | 65    | C  | 5  |  |  |
| 13  | Theoretical Mechanics 1                                     | CMMI-L-2.04   | DI   | C1,C2          |                          |     |   |   |       |    |    | 4           | 1.5                      | 1 | 0 | 71    | E  | 6  |  |  |
| 14  | Materials Technology                                        | CMMI-L-2.05   | DI   | C5             |                          |     |   |   |       |    |    | 2.5         | 0                        | 1 | 0 | 59    | E  | 4  |  |  |
| 15  | Physical Training and Sports 2                              | CMMI-L-2.06   | DI   | -              |                          |     |   |   |       |    |    | 0           | 1                        | 0 | 0 | 13    | C  | 1  |  |  |
| 16  | Structured Programming Languages                            | CMMI-L-2.07   | OC   | -              |                          |     |   |   |       |    |    | 1.5         | 0                        | 2 | 0 | 66    | E  | 4  |  |  |
|     | Object-Oriented Programming Languages                       | CMMI-L-2.08   | OC   | -              |                          |     |   |   |       |    |    |             |                          |   |   |       |    |    |  |  |
| 17  | Elementary Mathematics 1                                    | CMMI-L-2.09   | DL   | -              | 0                        | 3   | 0 | 0 | 39    | C  | 3  |             |                          |   |   |       |    |    |  |  |
| 18  | Psychology of Education                                     | DPPD-SPU-01   | DL   | -              | 2                        | 2   | 0 | 0 | 64    | E  | 5  |             |                          |   |   |       |    |    |  |  |
| 19  | Elementary Mathematics 2                                    | CMMI-L-2.10   | DL   | -              |                          |     |   |   |       |    |    | 0           | 2                        | 0 | 0 | 53    | C  | 3  |  |  |
| 20  | Elements of Metric Spaces with Applications                 | CMMI-L-2.11   | DL   | -              |                          |     |   |   |       |    |    | 2           | 2                        | 0 | 0 | 79    | C  | 5  |  |  |
| 21  | Pedagogy 1                                                  | DPPD-SPU-02   | DL   | -              |                          |     |   |   |       |    |    | 2           | 2                        | 0 | 0 | 64    | E  | 5  |  |  |
|     | Total hours per week, total evaluations                     |               |      |                | 15.5                     | 7.5 | 5 | 0 | 425   | 4E | 30 | 14          | 7                        | 8 | 0 | 418   | 4E | 30 |  |  |
|     | and credits per semester                                    |               |      |                |                          | 28  |   |   |       | 5C |    |             | 28                       |   |   |       | 3C |    |  |  |

**Abbreviation:** MC - Mandatory Course; OC- Optional Course; FC - Free Course;

SI - Individual (Non Assisted) Study; C – Course; S – Seminary;

L – Laboratory; P - Project; Ev - evaluation type (E-exam, C-colloquium ), K- ECTS credits

**Prerequisites:** C1 - Mathematical Analysis 1; C2 - Linear Algebra, Analytical and Differential Geometry; C3 - Computer Programming; C4 - Descriptive Geometry and Technical Drawing 1; C5 - Materials Science.

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**CURRICULUM - 2<sup>nd</sup> year of study**

| No. | Course name                                                       | Course code    | Type | Prere-<br>quisites | 1 <sup>st</sup> semester |     |    |   |       |     |    |             | 2 <sup>nd</sup> semester |      |   |       |     |    |    |  |
|-----|-------------------------------------------------------------------|----------------|------|--------------------|--------------------------|-----|----|---|-------|-----|----|-------------|--------------------------|------|---|-------|-----|----|----|--|
|     |                                                                   |                |      |                    | No of hours              |     |    |   | Hours | Ev  | K  | No of hours |                          |      |   | Hours | Ev  | K  |    |  |
|     |                                                                   |                |      |                    | C                        | S   | L  | P | SI    |     |    |             | C                        | S    | L | P     | SI  |    |    |  |
| 1   | Special Mathematics                                               | CMMI-L-3.01    | DI   | C1                 | 2.5                      | 1.5 | 0  | 0 | 52    | E   | 4  |             |                          |      |   |       |     |    |    |  |
| 2   | Computer-Aided Numerical Calculus                                 | CMMI-IMEC-3.02 | DI   | C1,C2              | 2                        | 0   | 2  | 0 | 52    | C   | 4  |             |                          |      |   |       |     |    |    |  |
| 3   | Physics                                                           | CMMI-L-3.03    | DI   | C3                 | 4                        | 1.5 | 2  | 0 | 91    | E   | 7  |             |                          |      |   |       |     |    |    |  |
| 4   | Theoretical Mechanics 2                                           | CMMI-IMEC-3.04 | DI   | C3                 | 1.5                      | 0   | 1  | 0 | 46    | C   | 3  |             |                          |      |   |       |     |    |    |  |
| 5   | Strength of Materials 1                                           | CMMI-L-3.05    | DI   | C3,C1              | 2.5                      | 1   | 1  | 0 | 72    | E   | 5  |             |                          |      |   |       |     |    |    |  |
| 6   | Mechanisms                                                        | CMMI-L-3.06    | DI   | C3                 | 2                        | 1   | 1  | 0 | 79    | E   | 5  |             |                          |      |   |       |     |    |    |  |
| 7   | Physical Training and Sports 3                                    | CMMI-L-3.07    | DI   | -                  | 0                        | 1   | 0  | 0 | 13    | C   | 1  |             |                          |      |   |       |     |    |    |  |
| 8   | English Language 1                                                | CMMI-L-3.08    | OC   | -                  | 0                        | 1   | 0  | 0 | 13    | C   | 1  |             |                          |      |   |       |     |    |    |  |
|     | French Language 1                                                 | CMMI-L-3.09    | OC   | -                  |                          |     |    |   |       |     |    |             |                          |      |   |       |     |    |    |  |
|     | German Language 1                                                 | CMMI-L-3.10    | OC   | -                  |                          |     |    |   |       |     |    |             |                          |      |   |       |     |    |    |  |
| 9   | Strength of Materials 2                                           | CMMI-L-4.01    | DI   | C4                 |                          |     |    |   |       |     |    | 2.5         | 2                        | 0    | 0 | 45    | E   | 4  |    |  |
| 10  | Machine Elements 1                                                | CMMI-L-4.02    | DI   | C4,C5              |                          |     |    |   |       |     |    | 3           | 0                        | 0    | 2 | 65    | E   | 5  |    |  |
| 11  | Fluid Mechanics 1                                                 | CMMI-L-4.03    | DI   | C3                 |                          |     |    |   |       |     |    | 3           | 1.5                      | 1    | 0 | 58    | E   | 5  |    |  |
| 12  | Tolerances and Dimensional Control                                | CMMI-L-4.04    | DI   | -                  |                          |     |    |   |       |     |    | 2.5         | 0                        | 2    | 0 | 45    | E   | 4  |    |  |
| 13  | Mechanical Vibrations                                             | CMMI-IMEC-4.05 | DI   | C3                 |                          |     |    |   |       |     |    | 2           | 0                        | 1    | 0 | 39    | C   | 3  |    |  |
| 14  | Physical Training and Sports 4                                    | CMMI-L-4.06    | DI   | -                  |                          |     |    |   |       |     |    | 0           | 1                        | 0    | 0 | 13    | C   | 1  |    |  |
| 15  | Field of Study Practical Training (3 weeks x 30 hours = 90 hours) | CMMI-IMEC-4.07 | DI   | -                  |                          |     |    |   |       |     |    |             |                          |      |   | 18    | C   | 4  |    |  |
| 16  | Thermodynamics                                                    | CMMI-L-4.08    | OC   | C6                 |                          |     |    |   |       |     |    | 2           | 0                        | 1    | 0 | 39    | C   | 3  |    |  |
|     | Heat and Mass Transfer                                            | CMMI-L-4.09    | OC   | C6                 |                          |     |    |   |       |     |    |             |                          |      |   |       |     |    |    |  |
| 17  | English Language 2                                                | CMMI-L-4.10    | OC   | -                  |                          |     |    |   |       |     |    | 0           | 1                        | 0    | 0 | 13    | C   | 1  |    |  |
|     | French Language 2                                                 | CMMI-L-4.11    | OC   | -                  |                          |     |    |   |       |     |    |             |                          |      |   |       |     |    |    |  |
|     | German Language 2                                                 | CMMI-L-4.12    | OC   | -                  |                          |     |    |   |       |     |    |             |                          |      |   |       |     |    |    |  |
| 18  | Elementary Physics                                                | CMMI-L-3.11    | DL   | -                  | 0                        | 2   | 0  | 0 | 53    | C   | 3  |             |                          |      |   |       |     |    |    |  |
| 19  | Computational Geometry                                            | CMMI-L-3.12    | DL   | -                  | 2                        | 2   | 0  | 0 | 79    | C   | 5  |             |                          |      |   |       |     |    |    |  |
| 20  | Pedagogy II                                                       | DPPD-SPU-03    | DL   | -                  | 2                        | 2   | 0  | 0 | 64    | E   | 5  |             |                          |      |   |       |     |    |    |  |
| 21  | Ethics and Academic Integrity                                     | CMMI-L-4.13    | DL   | -                  |                          |     |    |   |       |     |    | 2           | 1                        | 0    | 0 | 39    | C   | 3  |    |  |
| 22  | Specialty Didactics                                               | DPPD-SPU-04    | DL   | -                  |                          |     |    |   |       |     |    | 2           | 2                        | 0    | 0 | 64    | E   | 5  |    |  |
|     | Total hours per week, total evaluations and credits per semester  |                |      |                    |                          | 15  | 7  | 7 | 0     | 418 | 4E | 30          | 15                       | 5.5  | 5 | 2     | 335 | 4E | 30 |  |
|     |                                                                   |                |      |                    |                          |     | 28 |   |       |     | 4C |             |                          | 27.5 |   |       |     | 5C |    |  |

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**Prerequisites:** C1 - Mathematical Analysis 1, 2; C2 - Computer Programming;

C3 - Theoretical Mechanics 1; C4 - Strength of Materials 1; C5 - Mechanisms; C6 - Physics

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Programme of Study: **Fluid Machines and Systems**

Conferred title: engineer degree

Study duration: 4 years, 240 ECTS

Form of education: *full-time*

**CURRICULUM - 3<sup>rd</sup> year of study**

| No. | Course name                                                   | Course code    | Type | Pre-requisites | 1 <sup>st</sup> semester |    |   |   |       |    |    |             | 2 <sup>nd</sup> semester |   |   |       |    |    |  |  |
|-----|---------------------------------------------------------------|----------------|------|----------------|--------------------------|----|---|---|-------|----|----|-------------|--------------------------|---|---|-------|----|----|--|--|
|     |                                                               |                |      |                | No of hours              |    |   |   | Hours | Ev | K  | No of hours |                          |   |   | Hours | Ev | K  |  |  |
|     |                                                               |                |      |                | C                        | S  | L | P | SI    |    |    |             | C                        | S | L | P     | SI |    |  |  |
| 1   | Machine Elements 2                                            | CMMI-IMEC-5.01 | MC   | C1             | 2                        | 0  | 0 | 1 | 39    | E  | 3  |             |                          |   |   |       |    |    |  |  |
| 2   | Machine Tools and Cutting Manufacturing 1                     | CMMI-IMEC-5.02 | MC   | -              | 2.5                      | 0  | 2 | 0 | 99    | E  | 6  |             |                          |   |   |       |    |    |  |  |
| 3   | Experimental Methods in Mechanical Engineering 1              | CMMI-IMEC-5.03 | MC   | C2             | 2                        | 0  | 1 | 0 | 39    | C  | 3  |             |                          |   |   |       |    |    |  |  |
| 4   | Fluid Mechanics 2                                             | CMMI-MSHP-5.04 | MC   | C2             | 3                        | 1  | 1 | 0 | 65    | E  | 5  |             |                          |   |   |       |    |    |  |  |
| 5   | Aerodynamics of Airfoil Cascades 1                            | CMMI-MSHP-5.05 | MC   | C2             | 1.5                      | 1  | 0 | 0 | 46    | C  | 3  |             |                          |   |   |       |    |    |  |  |
| 6   | Volumetric Hydraulic Machines                                 | CMMI-MSHP-5.06 | MC   | C2             | 2                        | 0  | 1 | 0 | 39    | C  | 3  |             |                          |   |   |       |    |    |  |  |
| 7   | Electrical Engineering and Electronics                        | CMMI-L-5.07.a  | OC   | C3             | 4                        | 0  | 2 | 0 | 78    | E  | 6  |             |                          |   |   |       |    |    |  |  |
|     | Industrial Electrical Engineering                             | CMMI-L-5.08.a  | OC   | C3             |                          |    |   |   |       |    |    |             |                          |   |   |       |    |    |  |  |
| 8   | English Language 3                                            | CMMI-L-5.15    | OC   | -              | 0                        | 1  | 0 | 0 | 13    | C  | 1  |             |                          |   |   |       |    |    |  |  |
|     | French Language 3                                             | CMMI-L-5.16    | OC   | -              |                          |    |   |   |       |    |    |             |                          |   |   |       |    |    |  |  |
|     | German Language 3                                             | CMMI-L-5.17    | OC   | -              |                          |    |   |   |       |    |    |             |                          |   |   |       |    |    |  |  |
| 9   | Machine Tools and Cutting Manufacturing 2                     | CMMI-IMEC-6.01 | MC   | C4             |                          |    |   |   |       |    |    | 2           | 0                        | 2 | 0 | 52    | E  | 4  |  |  |
| 10  | Experimental Methods in Mechanical Engineering 2              | CMMI-IMEC-6.02 | MC   | C3             |                          |    |   |   |       |    |    | 2           | 0                        | 1 | 0 | 39    | C  | 3  |  |  |
| 11  | Hydraulic and Pneumatic Drives 1                              | CMMI-MSHP-6.03 | MC   | C5             |                          |    |   |   |       |    |    | 3           | 0                        | 1 | 1 | 38    | E  | 4  |  |  |
| 12  | Aerodynamics of Airfoil Cascades 2                            | CMMI-MSHP-6.04 | MC   | C6             |                          |    |   |   |       |    |    | 2           | 1                        | 1 | 0 | 52    | E  | 4  |  |  |
| 13  | Compressible Fluid Dynamics                                   | CMMI-MSHP-6.05 | MC   | C2             |                          |    |   |   |       |    |    | 3           | 1                        | 1 | 0 | 38    | E  | 4  |  |  |
| 14  | Industrial Management                                         | CMMI-L-6.07    | MC   | -              |                          |    |   |   |       |    |    | 2           | 1                        | 0 | 0 | 39    | C  | 3  |  |  |
| 15  | Speciality Practical Training (3 weeks x 30 hours = 90 hours) | CMMI-MSHP-6.08 | MC   | -              |                          |    |   |   |       |    |    |             |                          |   |   | 18    | C  | 4  |  |  |
| 16  | Wind Turbine                                                  | CMMI-MSHP-6.09 | OC   | C6             |                          |    |   |   |       |    |    | 2           | 0                        | 1 | 0 | 39    | C  | 3  |  |  |
|     | Measurement of Fluid Parameters                               | CMMI-MSHP-6.10 | OC   | C2             |                          |    |   |   |       |    |    |             |                          |   |   |       |    |    |  |  |
| 17  | English Language 4                                            | CMMI-L-6.15    | OC   | -              |                          |    |   |   |       |    |    | 0           | 1                        | 0 | 0 | 13    | C  | 1  |  |  |
|     | French Language 4                                             | CMMI-L-6.16    | OC   | -              |                          |    |   |   |       |    |    |             |                          |   |   |       |    |    |  |  |
|     | German Language 4                                             | CMMI-L-6.17    | OC   | -              |                          |    |   |   |       |    |    |             |                          |   |   |       |    |    |  |  |
| 18  | Continuous Medium Mechanics                                   | CMMI-MSHP-5.09 | DL   | -              | 2                        | 2  | 0 | 0 | 79    | C  | 5  |             |                          |   |   |       |    |    |  |  |
| 19  | Computer Aided Training                                       | DPPD-SPU-04    | DL   | -              | 1                        | 1  | 0 | 0 | 32    | C  | 2  |             |                          |   |   |       |    |    |  |  |
| 20  | Pedagogic Training I                                          | DPPD-SPU-05    | DL   | -              | 0                        | 0  | 3 | 0 | 48    | C  | 3  |             |                          |   |   |       |    |    |  |  |
| 21  | Classroom Management                                          | DPPD-SPU-06    | DL   | -              |                          |    |   |   |       |    |    | 1           | 1                        | 0 | 0 | 30    | C  | 3  |  |  |
| 22  | Pedagogic Training II                                         | DPPD-SPU-07    | DL   | -              |                          |    |   |   |       |    |    | 0           | 0                        | 3 | 0 | 32    | C  | 2  |  |  |
| 23  | Entrepreneurial education                                     | CMMI-L-6.18    | DL   |                |                          |    |   |   |       |    |    | 2           | 0                        | 1 | 0 | 93    | C  | 5  |  |  |
|     | Total hours per week, total evaluations                       |                |      |                | 17                       | 3  | 7 | 1 | 418   | 4E | 30 | 16          | 4                        | 7 | 1 | 328   | 4E | 30 |  |  |
|     | and credits per semester                                      |                |      |                |                          | 28 |   |   |       | 4C |    |             | 28                       |   |   |       | 5C |    |  |  |

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SI - Individual (Non Assisted) Study; C – Course; S – Seminary;

L – Laboratory; P - Project; Ev - evaluation type (E-exam, C-colloquium ), K- ECTS credits

**Prerequisites:** C1 - Machine Elements 1; C2 - Fluid Mechanics 1; C3 - Physics; C4 -

Machine Tools and Cutting Manufacturing 1; C5 - Fluid Mechanics 2; C6 - Aerodynamics of Airfoil Cascades 1.

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**CURRICULUM - 4<sup>th</sup> year of study**

| No. | Course name                                         | Course code    | Type | Pre-requisites | 1 <sup>st</sup> semester |    |   |   |       |    |    |             | 2 <sup>nd</sup> semester |   |   |       |    |    |  |  |
|-----|-----------------------------------------------------|----------------|------|----------------|--------------------------|----|---|---|-------|----|----|-------------|--------------------------|---|---|-------|----|----|--|--|
|     |                                                     |                |      |                | No of hours              |    |   |   | Hours | Ev | K  | No of hours |                          |   |   | Hours | Ev | K  |  |  |
|     |                                                     |                |      |                | C                        | S  | L | P | SI    |    |    |             | C                        | S | L | P     | SI |    |  |  |
| 1   | Manufacturing Technologies                          | CMMI-IMEC-7.01 | MC   | C1             | 3                        | 0  | 1 | 0 | 52    | E  | 4  |             |                          |   |   |       |    |    |  |  |
| 2   | Hydraulic and Pneumatic Drives 2                    | CMMI-MSHP-7.02 | MC   | C2             | 2                        | 0  | 1 | 2 | 92    | E  | 6  |             |                          |   |   |       |    |    |  |  |
| 3   | Pumps, Blowers and Fans 1                           | CMMI-MSHP-7.03 | MC   | C3             | 2                        | 0  | 1 | 0 | 66    | E  | 4  |             |                          |   |   |       |    |    |  |  |
| 4   | Hydraulic, Pneumatic and District Heating Networks  | CMMI-MSHP-7.04 | MC   | C4             | 2                        | 0  | 1 | 1 | 52    | C  | 4  |             |                          |   |   |       |    |    |  |  |
| 5   | Hydraulic Turbines and Turbo-Transmissions          | CMMI-MSHP-7.05 | OC   | C3             | 4                        | 0  | 1 | 2 | 91    | E  | 7  |             |                          |   |   |       |    |    |  |  |
|     | Hydraulic and Pneumatic Turbines                    | CMMI-MSHP-7.06 | OC   | C3             |                          |    |   |   |       |    |    |             |                          |   |   |       |    |    |  |  |
| 6   | Computer-Aided Design of Fluid Machines and Systems | CMMI-MSHP-7.07 | OC   | C4             | 2                        | 0  | 3 | 0 | 65    | E  | 5  |             |                          |   |   |       |    |    |  |  |
|     | Lubrication Hydrodynamics                           | CMMI-MSHP-7.08 | OC   | C4             |                          |    |   |   |       |    |    |             |                          |   |   |       |    |    |  |  |
| 7   | Pumps, Blowers and Fans 2                           | CMMI-MSHP-8.01 | MC   | C5             |                          |    |   |   |       |    |    | 3           | 0                        | 1 | 2 | 78    | E  | 6  |  |  |
| 8   | Automation of Hydraulic Systems                     | CMMI-MSHP-8.02 | MC   | C6             |                          |    |   |   |       |    |    | 3           | 0                        | 1 | 1 | 65    | E  | 5  |  |  |
| 9   | Pumping Stations and Ventilation Systems            | CMMI-MSHP-8.03 | MC   | C5             |                          |    |   |   |       |    |    | 2.5         | 0                        | 1 | 0 | 59    | C  | 4  |  |  |
| 10  | Hydroelectric Power Plants                          | CMMI-MSHP-8.04 | MC   | C7             |                          |    |   |   |       |    |    | 2.5         | 0                        | 0 | 1 | 59    | C  | 4  |  |  |
| 11  | MATLAB/SIMULINK in Fluid Engineering                | CMMI-MSHP-8.05 | MC   | C4             |                          |    |   |   |       |    |    | 2           | 0                        | 2 | 0 | 52    | E  | 4  |  |  |
| 12  | Diploma Project 1                                   | CMMI-MSHP-8.06 | MC   | -              |                          |    |   |   |       |    |    | 0           | 0                        | 0 | 4 | 52    | C  | 4  |  |  |
| 13  | Diploma Project 2 (2 weeks.x 30 hours = 60 hours)   | CMMI-MSHP-8.07 | MC   | -              |                          |    |   |   |       |    |    |             |                          |   |   | 21    | C  | 3  |  |  |
| 14  | Basics of Computational Fluid Dynamics              | CMMI-MSHP-7.09 | DL   | -              | 2                        | 0  | 2 | 0 | 79    | C  | 5  |             |                          |   |   |       |    |    |  |  |
| 15  | English Language 5                                  | CMMI-L-7.15    | DL   | -              | 0                        | 1  | 0 | 0 | 13    | C  | 1  |             |                          |   |   |       |    |    |  |  |
|     | French Language 5                                   | CMMI-L-7.16    | DL   | -              | 0                        | 1  | 0 | 0 | 13    | C  | 1  |             |                          |   |   |       |    |    |  |  |
|     | German Language 5                                   | CMMI-L-7.17    | DL   | -              | 0                        | 1  | 0 | 0 | 13    | C  | 1  |             |                          |   |   |       |    |    |  |  |
| 16  | Entrepreneurial education                           | CMMI-L-7.18    | DL   |                | 1                        | 0  | 2 | 0 | 93    | C  | 5  |             |                          |   |   |       |    |    |  |  |
| 17  | English Language 6                                  | CMMI-L-8.15    | DL   | -              |                          |    |   |   |       |    |    | 0           | 1                        | 0 | 0 | 13    | C  | 1  |  |  |
|     | French Language 6                                   | CMMI-L-8.16    | DL   | -              |                          |    |   |   |       |    |    | 0           | 1                        | 0 | 0 | 13    | C  | 1  |  |  |
|     | German Language 6                                   | CMMI-L-8.17    | DL   | -              |                          |    |   |   |       |    |    | 0           | 1                        | 0 | 0 | 13    | C  | 1  |  |  |
| 18  | Applied Entrepreneurial education                   | CMMI-L-8.18    | DL   |                |                          |    |   |   |       |    |    | 2           | 0                        | 0 | 1 | 39    | C  | 3  |  |  |
|     | Total hours per week, total evaluations             |                |      |                | 15                       | 0  | 8 | 5 | 418   | 5E | 30 | 13          | 0                        | 5 | 8 | 386   | 3E | 30 |  |  |
|     | and credits per semester                            |                |      |                |                          | 28 |   |   |       | 1C |    |             | 26                       |   |   |       | 4C |    |  |  |
| 19  | Diploma Exam                                        | CMMI-MSHP-ED   | MC   |                |                          |    |   |   |       |    |    |             |                          |   |   |       | E  | 10 |  |  |

**Abbreviation:** MC - Mandatory Course; OC- Optional Course; FC - Free Course;  
SI - Individual (Non Assisted) Study; C – Course; S – Seminary;  
L – Laboratory; P - Project; Ev - evaluation type (E-exam, C-colloquium ), K- ECTS credits

**Prerequisites:** C1 - Machine Tools and Cutting Manufacturing 1,2; C2 - Hydraulic and Pneumatic Drives 1; C3 - Aerodynamics of Airfoil Cascades 1,2; C4 - Fluid Mechanics 2; C5 - Pumps, Blowers and Fans 1; C6 - Hydraulic and Pneumatic Drives 2; C7 - Hydraulic Turbines and Turbo-Transmissions