

**Electromechanical Engineering First Year Semester 1**

| Idnt                            | CTSE      | Intitulé                                        | CI         | TP         | CI+TP      | T.per      | T          |           | Coef        | E    |                                       | GM    |
|---------------------------------|-----------|-------------------------------------------------|------------|------------|------------|------------|------------|-----------|-------------|------|---------------------------------------|-------|
| Course Id                       |           |                                                 | L          | PW         | L+PW       | Self pr.   | T          | ECTS      |             | E    | Subject                               |       |
| Mth IN                          | MGEM11.01 | Mathématique pour Ingénieur                     | 30         | 0          | 30         | 25         | 55         | 2         | 2           | CC+E | Mathematics for Engineers             | GM1-1 |
| Con Méc                         | MGEM11.02 | Conception mécanique                            | 30         | 15         | 45         | 50         | 95         | 3,5       | 2,5         | CC+E | Mechanical Design                     | GM1-3 |
| RDM                             | MGEM11.03 | Résistance des matériaux                        | 30         | 15         | 45         | 50         | 95         | 3,5       | 2,5         | CC+E | Strength of materials                 | GM1-4 |
| TF                              | MGEM11.04 | Technologie de fabrication                      | 30         | 15         | 45         | 40         | 85         | 3         | 2,5         | CC+E | Manufacturing technology              | GM1-3 |
| Thrmo                           | MGEM11.05 | Thermodynamique                                 | 24         | 15         | 39         | 40         | 79         | 3         | 2,5         | CC+E | Thermodynamics                        | GM1-2 |
| SCL                             | MGEM11.06 | Système et circuit logique                      | 30         | 15         | 45         | 40         | 85         | 3         | 2,5         | CC+E | System and logic circuit              | GM1-5 |
| Elec                            | MGEM11.07 | Electronique I (Electronique analogique)        | 30         | 15         | 45         | 40         | 85         | 3         | 2,5         | CC+E | Electronics I (Analogue electronics ) | GM1-6 |
| CaidDe                          | MGEM11.08 | Infographie (conception assisté par ordinateur) | 0          | 51         | 51         | 30         | 81         | 3         | 1,5         | CC   | computer-aided design                 | GM1-3 |
| Dr T                            | MGEM11.09 | Droit de travail                                | 24         | 0          | 24         | 20         | 44         | 2         | 1,5         | CC+E | Labour law                            | GM1-7 |
| Tech Com                        | MGEM11.10 | Techniques de Communication                     | 24         | 0          | 24         | 20         | 44         | 2         | 1,5         | CC+E | Communication techniques              | GM1-7 |
| <b>Total (GEM1/Semester 1 :</b> |           |                                                 | <b>252</b> | <b>141</b> | <b>393</b> | <b>355</b> | <b>748</b> | <b>28</b> | <b>21,5</b> |      |                                       |       |

Electromechanical Engineering First Year Semester 2

| Idnt                            | CTSE      | Intitulé                                                              | CI  | TP  | CI+TP | T.per    | T    |      | Coef | E    |                                                 | GM    |
|---------------------------------|-----------|-----------------------------------------------------------------------|-----|-----|-------|----------|------|------|------|------|-------------------------------------------------|-------|
| Course Id                       |           |                                                                       | L   | PW  | L+PW  | Self pr. | T    | ECTS |      | E    | Subject                                         |       |
| TRP I                           | MGEM12.11 | Transmission de Puissance et de Mouvement I                           | 30  | 15  | 45    | 50       | 95   | 3,5  | 2,5  | CC+E | Transmission of Power and Movement I            | GM1-3 |
| MMC                             | MGEM12.12 | Mécanique des Milieux Continus                                        | 30  | 0   | 30    | 30       | 60   | 2    | 2    | CC+E | Continuous Media Mechanics                      | GM1-4 |
| HetTr                           | MGEM12.13 | Transfert de chaleur                                                  | 30  | 15  | 45    | 40       | 85   | 3    | 2,5  | CC+E | Heat transfer                                   | GM1-2 |
| MF                              | MGEM12.14 | Mécaniques des fluides                                                | 30  | 15  | 45    | 40       | 85   | 3    | 2    | CC+E | Fluid mechanics                                 | GM1-2 |
| Em                              | MGEM12.15 | Machines électriques ( Machine à courant continu et moteur pas à pas) | 30  | 15  | 45    | 40       | 85   | 3    | 2,5  | CC+E | Electric machine (DC Machine and Stepper Motor) | GM1-6 |
| Electro Tech                    | MGEM12.16 | Electrotechnique                                                      | 30  | 15  | 45    | 40       | 85   | 3    | 2,5  | CC+E | Electrical engineering                          | GM1-6 |
| AnaDy                           | MGEM12.17 | Automatique I +II(Analyse des systèmes dynamiques et continus)        | 45  | 15  | 60    | 25       | 85   | 3    | 2,5  | CC+E | Analysis of dynamic and continuous systems      | GM1-5 |
| Rop                             | MGEM12.18 | Recherche Opérationnelle                                              | 24  | 0   | 24    | 25       | 49   | 2    | 1,5  | CC+E | Operational research                            | GM1-1 |
| Mini Pro                        | MGEM12.19 | Mini projet                                                           | 0   | 30  | 30    | 25       | 55   | 2    | 1,5  | CC   | Mini-project                                    | GM1-3 |
| Ang                             | MGEM12.20 | Anglais I for SpecificPurposes                                        | 24  | 0   | 24    | 30       | 54   | 2    | 1,5  | CC+E | Anglais I for SpecificPurposes                  | GM1-7 |
| CreEnt                          | MGEM12.21 | Création de l'entreprise                                              | 24  | 0   | 24    | 24       | 48   | 1,5  | 1,5  | CC+E | Setting up the company                          | GM1-7 |
| StatProb                        | MGEM12.22 | Statistique et probabilités                                           | 24  | 0   | 24    | 24       | 48   | 2    | 1,5  | CC+E | Statistics and Probability                      | GM1-1 |
| <b>Total (GEM1/Semestre 2 :</b> |           |                                                                       | 321 | 120 | 441   | 393      | 834  | 30   | 24   |      |                                                 |       |
| <b>Total GEM1 :</b>             |           |                                                                       | 573 | 261 | 834   | 748      | 1582 | 58   | 45,5 |      |                                                 |       |

**Electromechanical Engineering Second Year Semester 1**

| <b>Idnt</b>                    |           | <b>Intitulé</b>                                                     | <b>CI</b>  | <b>TP</b>  | <b>CI+TP</b> | <b>T.per</b>    | <b>T</b>   |             | <b>Coef</b> | <b>E</b> |                                                          | <b>GM</b> |
|--------------------------------|-----------|---------------------------------------------------------------------|------------|------------|--------------|-----------------|------------|-------------|-------------|----------|----------------------------------------------------------|-----------|
| <b>Course Id</b>               |           |                                                                     | <b>L</b>   | <b>PW</b>  | <b>L+PW</b>  | <b>Self pr.</b> | <b>T</b>   | <b>ECTS</b> |             | <b>E</b> | <b>Subject</b>                                           |           |
| MOSEM                          | MGEM21.24 | Mise en œuvre sans enlèvement de matière                            | 30         | 30         | 60           | 30              | 90         | 3           | 2,5         | CC+E     | Processing without material removal                      | GM2-2     |
| CS                             | MGEM21.25 | Calcul des structures                                               | 30         | 0          | 30           | 40              | 70         | 2,5         | 2           | CC+E     | Structural Analysis                                      | GM2-3     |
| Mét Phy                        | MGEM21.26 | Métallurgie Physique                                                | 27         | 0          | 27           | 30              | 57         | 2           | 1,5         | CC+E     | Physical Metallurgy                                      | GM2-3     |
| Mec Vib                        | MGEM21.27 | Mécanique vibratoire                                                | 30         | 15         | 45           | 40              | 85         | 3           | 2           | CC+E     | Mechanical Vibration                                     | GM2-5     |
| Rob                            | MGEM21.28 | Robotique (Initiation au Robotique)                                 | 24         | 0          | 24           | 25              | 49         | 2           | 1,5         | CC+E     | Robotics (Introduction to Robotics)                      | GM2-6     |
| Mach Ele II                    | MGEM21.29 | Machines électriques II (Machines électriques à courant alternatif) | 36         | 15         | 51           | 34              | 85         | 3           | 2,5         | CC+E     | Electrical machines II(AC Electrical Machines)           | GM2-1     |
| Sch Elc                        | MGEM21.30 | Schémas électriques (Schéma et protection électriques)              | 24         | 15         | 39           | 30              | 69         | 2           | 2           | CC+E     | Electrical diagrams (Electrical diagrams and protection) | GM2-1     |
| Auto Pro                       | MGEM21.31 | Automates programmables                                             | 30         | 15         | 45           | 50              | 95         | 3,5         | 2,5         | CC+E     | Programmable Logic Controllers                           | GM2-6     |
| An Num                         | MGEM21.32 | Analyse numérique                                                   | 24         | 0          | 24           | 40              | 64         | 2,5         | 1,5         | CC+E     | Numerical analysis                                       | GM2-4     |
| AngII                          | MGEM21.33 | Anglais II                                                          | 24         | 0          | 24           | 35              | 59         | 2           | 1,5         | CC+E     | English II                                               | GM2-7     |
| Tech Com                       | MGEM21.34 | Techniques de communication                                         | 24         | 0          | 24           | 20              | 44         | 1,5         | 1,5         | CC+E     | Communication techniques                                 | GM2-7     |
| Info I                         | MGEM21.35 | Informatique I                                                      | 0          | 30         | 30           | 25              | 55         | 2           | 1,5         | CC       | Computer science I                                       | GM2-7     |
| <b>Total (GEM2/Semester1 :</b> |           |                                                                     | <b>303</b> | <b>120</b> | <b>423</b>   | <b>399</b>      | <b>822</b> | <b>29</b>   | <b>22,5</b> |          |                                                          |           |

**Electromechanical Engineering Second Year Semester 2**

| Idnt                           |           | Intitulé                                             | CI         | TP         | CI+TP      | T.per      | T           |           | Coef        | E    |                                                   | GM    |
|--------------------------------|-----------|------------------------------------------------------|------------|------------|------------|------------|-------------|-----------|-------------|------|---------------------------------------------------|-------|
| Course Id                      |           |                                                      | L          | PW         | L+PW       | Self pr.   | T           | ECTS      |             | E    | Subject                                           |       |
| TRP II                         | MGEM22.36 | Transmission de puissance et de mouvement II         | 30         | 15         | 45         | 45         | 90          | 3,5       | 2,5         | CC+E | Power and motion transmissionII                   | GM2-5 |
| MTM                            | MGEM22.37 | Métallurgie et traitement des métaux                 | 30         | 12         | 42         | 40         | 82          | 3         | 2           | CC+E | Metallurgy and metal processing                   | GM2-3 |
| Pro F                          | MGEM22.38 | Processus de fabrication                             | 30         | -          | 30         | 30         | 60          | 2         | 1,5         | CC+E | Manufacturing process                             | GM2-2 |
| ADM                            | MGEM22.39 | Analyse dynamique des machines                       | 30         | 12         | 42         | 40         | 82          | 3         | 2           | CC+E | Dynamic analysis of machines                      | GM2-4 |
| CND                            | MGEM22.40 | Contrôle destructif et non destructif des métaux     | 24         | 15         | 39         | 30         | 69          | 2         | 2           | CC+E | Destructive and non-destructive testing of metals | GM2-3 |
| Mécato                         | MGEM22.41 | Mécatronique                                         | 24         | -          | 24         | 30         | 54          | 2         | 2           | CC+E | Mechatronics                                      | GM2-2 |
| Elec Pui II                    | MGEM22.42 | Electronique de puissance I                          | 30         | 15         | 45         | 40         | 85          | 3         | 2,5         | CC+E | Power electronics I                               | GM2-1 |
| Diag M                         | MGEM22.43 | Diagnostic et maintenance                            | 21         | 9          | 30         | 30         | 60          | 2         | 2           | CC+E | Diagnosis and maintenance                         | GM2-5 |
| Electo II                      | MGEM22.44 | Electronique II (Electronique analogique)            | 30         | 15         | 45         | 40         | 85          | 3         | 2,5         | CC+E | Electronics II (Analogue Electronics)             | GM2-1 |
| MCN                            | MGEM22.45 | Programmation des machines-outils commande numérique | 30         | 24         | 54         | 40         | 94          | 3,5       | 2,5         | CC+E | Programming of NC machine tools                   | GM2-6 |
| Mini Pro                       | MGEM22.46 | Mini projet                                          | 0          | 30         | 30         | 30         | 60          | 2         | 1           | R    | Mini-project                                      | GM2-4 |
| <b>Total (GEM2/Semester2 :</b> |           |                                                      | <b>279</b> | <b>147</b> | <b>426</b> | <b>395</b> | <b>821</b>  | <b>29</b> | <b>22,5</b> |      |                                                   |       |
| <b>Total GEM2 :</b>            |           |                                                      | <b>582</b> | <b>267</b> | <b>849</b> | <b>794</b> | <b>1643</b> | <b>58</b> | <b>45</b>   |      |                                                   |       |

**Electromechanical Engineering third Year Semester 1**

| Idnt                           |                  | Intitulé                                              | CI         | TP        | CI+TP      | T.per      | T          |           | Coef      | E    |                                                       | GM    |
|--------------------------------|------------------|-------------------------------------------------------|------------|-----------|------------|------------|------------|-----------|-----------|------|-------------------------------------------------------|-------|
| Course Id                      |                  |                                                       | L          | PW        | L+PW       | Self pr.   | T          | ECTS      |           | E    | Subject                                               |       |
| GP                             | MGEM31.48        | Gestion de production                                 | 24         | 0         | 24         | 30         | 54         | 2         | 1,5       | CC+E | Production management                                 | GM3-1 |
| M Th                           | MGEM31.49        | Moteur thermique                                      | 30         | 0         | 30         | 30         | 60         | 2         | 2         | CC+E | Thermal engine                                        | GM3-2 |
| MCS                            | MGEM31.50        | Modélisation et calcul des structures                 | 0          | 24        | 24         | 20         | 44         | 1,5       | 1         | CC   | Modeling and calculation of structures                | GM3-4 |
| Hyd Ind                        | MGEM31.51        | Hydraulique Industrielle                              | 30         | 0         | 30         | 30         | 60         | 2         | 1,5       | CC+E | Industrial hydraulics                                 | GM3-2 |
| Mnag                           | MGEM31.52        | management R&D                                        | 30         | 0         | 30         | 20         | 50         | 2         | 2         | CC+E | RESEARCH METHODOLOGY                                  | GM3-5 |
| CRI                            | MGEM31.53        | Conception des robots industriels                     | 24         | 0         | 24         | 20         | 44         | 1,5       | 1,5       | CC+E | Design of industrial robots                           | GM3-3 |
| TSM                            | MGEM31.54        | Tenue en service des matériaux                        | 27         | 0         | 27         | 20         | 47         | 1,5       | 2         | CC+E | Serviceability of materials                           | GM3-4 |
| MISE                           | MGEM31.55        | Mesure et instrumentation des systèmes électriques    | 24         | 12        | 36         | 25         | 61         | 2         | 2,5       | CC+E | Measurement and instrumentation of electrical systems | GM3-3 |
| Rg Co                          | MGEM31.56        | Régulations et contrôles                              | 24         | 12        | 36         | 35         | 71         | 2         | 2,5       | CC+E | Regulations and controls                              | GM3-3 |
| GestPrj                        | MGEM31.57        | Gestion de projet                                     | 24         | 0         | 24         | 30         | 54         | 2         | 1,5       | CC+E | Project management                                    | GM3-1 |
| GMAO                           | MGEM31.58        | Gestion de la maintenance assistée par ordinateur     | 21         | 12        | 33         | 20         | 53         | 2         | 2         | CC+E | Computer-assisted maintenance management              | GM3-1 |
| EngRnv                         | MGEM31.59        | Energies renouvelables                                | 30         | 0         | 30         | 30         | 60         | 2         | 2         | CC+E | Renewable energies                                    | GM3-2 |
| CDP                            | MGEM31.60        | Conception et démarche d'un projet                    | 0          | 24        | 24         | 30         | 54         | 1,5       | 1         | CC   | Project design and approach                           | GM3-5 |
| Ind4                           | MGEM31.61        | industrie 4,0                                         | 30         |           | 30         | 20         | 50         | 2         | 2         | CC+E | Industry 4.0 Advanced Operator                        | GM3-5 |
| MSSP                           | MGEM31.62        | Modélisation et Simulation des Systèmes de Production | 24         | 9         | 33         | 30         | 63         | 2         | 2         | CC+E | Modeling and Simulation of production systems         | GM3-4 |
| MSSP                           | MGEM31.63<br>OP1 | Modélisation du comportement des matériaux            | 24         | 9         | 33         | 20         | 61         | 2         | 2         | CC+E | Modeling and Simulation of production systems         | GM3-4 |
| MecEla                         | MGEM31.63<br>OP2 | Mécanique et élaboration des matériaux composites     |            |           |            |            |            |           |           | CC+E | Modeling and Simulation of production systems         |       |
| <b>Total (GEM3/Semester1 :</b> |                  |                                                       | <b>228</b> | <b>78</b> | <b>306</b> | <b>260</b> | <b>574</b> | <b>30</b> | <b>29</b> |      |                                                       |       |