

| Libellé complet du module = libellé long (60 caractères max)                                                 |  | Volume CM | Volume TD | Volume TP | Volume BénévoLat | ECTS |
|--------------------------------------------------------------------------------------------------------------|--|-----------|-----------|-----------|------------------|------|
| ING01-SH-Option                                                                                              |  |           |           |           |                  |      |
| ECU / EUNICE / Valo engagement                                                                               |  |           |           |           |                  |      |
| ING01-SH-Mathématiques                                                                                       |  | 42,00     | 42        |           |                  | 6    |
| Analyse/ Analysis                                                                                            |  | 21,00     | 21        |           |                  |      |
| Fi - Analyse/ Fi Analysis                                                                                    |  | 21,00     |           |           |                  |      |
| Algèbre/ Algebra                                                                                             |  | 21,00     | 21        |           |                  |      |
| Fi - Algèbre/ Algebra                                                                                        |  | 21,00     |           |           |                  |      |
| ING01-SH-Outils                                                                                              |  | 31,50     | 31,5      | 15        |                  | 6    |
| Outils mathématiques pour la physique/ Mathematical tools for physics                                        |  |           |           |           |                  |      |
| Fi - Outils mathématiques pour la physique/ Mathematical tools for physics                                   |  | 21,00     | 21        |           |                  |      |
| Algorithme et programmation/ Algorithm and programming                                                       |  | 21,00     |           |           |                  |      |
| Fi - Algorithme et programmation/ Algorithm and programming                                                  |  | 10,50     | 10,5      | 15        |                  |      |
| ING01-SH-Electronique                                                                                        |  | 21,00     | 21        |           |                  | 3    |
| Electrostatique / Electrostatics                                                                             |  | 10,50     | 10,5      |           |                  |      |
| Fi - Electrostatique / Electrostatics                                                                        |  | 10,50     |           |           |                  |      |
| Electronique des circuits / Circuits theory                                                                  |  | 10,50     | 10,5      |           |                  |      |
| Fi - Electronique des circuits / Circuits theory                                                             |  | 10,50     |           |           |                  |      |
| ING01-SH-Sciences Physiques                                                                                  |  | 42,00     | 42        |           |                  | 6    |
| Thermodynamique / Thermodynamics                                                                             |  | 10,50     | 10,5      |           |                  |      |
| Fi - Thermodynamique / Thermodynamics                                                                        |  | 10,50     |           |           |                  |      |
| Chimie des matériaux / Materials Chemistry                                                                   |  | 10,50     | 10,5      |           |                  |      |
| Fi - Chimie des matériaux / Materials Chemistry                                                              |  | 10,50     |           |           |                  |      |
| Mécanique (cinématique) / Mechanics (kinematic)                                                              |  | 21,00     | 21        |           |                  |      |
| Fi - Mécanique (cinématique) / Mechanics (kinematic)                                                         |  | 21,00     |           |           |                  |      |
| ING01-SH-Humanités                                                                                           |  | 0         | 91        | 3         |                  |      |
| Anglais / English                                                                                            |  |           | 26        |           |                  |      |
| LV2 / Second Language / FLE                                                                                  |  |           | 26        |           |                  |      |
| Culture et communication / Culture and communication                                                         |  |           | 10,5      |           |                  |      |
| Fi - Culture et communication / Culture and communication                                                    |  | 10,50     |           |           |                  |      |
| Projet professionnel individualisé et responsable / Individualized and responsible professional project      |  |           | 10,5      |           |                  |      |
| Fi - Projet professionnel individualisé et responsable / Individualized and responsible professional project |  | 10,50     |           |           |                  |      |
| FAPSA / Training through physical, sporting and artistic activities                                          |  |           | 18        |           |                  |      |
| Enjeux climatiques et énergétiques / Climate and energy issues                                               |  |           |           | 3         |                  |      |
| ING01-SH-SAE                                                                                                 |  |           | 15        | 20        | 2                |      |
| SAE - Méthodologie / Learning and assessment situation                                                       |  |           | 15        | 20        |                  |      |
| Fi - SAE - Méthodologie / Learning and assessment situation                                                  |  | 15,00     |           |           |                  |      |
| ING01-SH-Implication                                                                                         |  |           |           |           |                  | 1    |
| ING01-SH-Harmonisation                                                                                       |  |           | 42        |           |                  | 0    |
| Harmonisation en Mathématiques / Harmonisation in mathematics                                                |  |           | 21        |           |                  |      |
| Harmonisation en Physique / Harmonisation in physics                                                         |  |           | 21        |           |                  |      |
| Summer School Global GI                                                                                      |  |           |           |           |                  |      |
|                                                                                                              |  |           |           |           |                  |      |
| ING02-SH-Option                                                                                              |  |           |           |           |                  |      |
| ECU / EUNICE / Valo engagement                                                                               |  |           |           |           |                  |      |
| ING02-SH-Mathématiques                                                                                       |  | 42,00     | 42        |           |                  | 6    |
| Analyse/ Analysis                                                                                            |  | 21,00     | 21        |           |                  |      |
| Fi - Analyse/ Analysis                                                                                       |  | 21,00     |           |           |                  |      |
| Algèbre/ Algebra                                                                                             |  | 21,00     | 21        |           |                  |      |
| Fi - Algèbre/ Algebra                                                                                        |  | 21,00     |           |           |                  |      |
| ING02-SH-Informatique                                                                                        |  | 21        | 21        | 12        |                  | 4    |
| Algorithme et programmation/ Algorithm and programming                                                       |  | 10,5      | 10,5      | 12        |                  |      |
| Fi - Algorithme et programmation/ Algorithm and programming                                                  |  | 10,5      |           |           |                  |      |
| Probabilités-statistiques / Probabilities - Statistics                                                       |  | 10,5      | 10,5      |           |                  |      |
| Fi - Probabilités-statistiques / Probabilities - Statistics                                                  |  | 10,5      |           |           |                  |      |
| ING02-SH-Electronique et Automatique                                                                         |  | 78,5      | 42        | 27        |                  | 7    |
| Magnétostatique / Magnetostatics                                                                             |  | 10,5      | 10,5      |           |                  |      |
| Fi - Magnétostatique / Magnetostatics                                                                        |  | 10,5      |           |           |                  |      |
| Electronique des systèmes / Electronics of systems                                                           |  | 10,5      | 10,5      | 9         |                  |      |
| Fi - Electronique des systèmes / Electronics of systems                                                      |  | 10,5      |           |           |                  |      |
| Optique géométrique / Geometrical Optics                                                                     |  | 10,5      | 10,5      |           |                  |      |
| Fi - Optique géométrique / Geometrical Optics                                                                |  | 10,5      |           |           |                  |      |
| Automatique / Automatics                                                                                     |  |           |           |           |                  |      |
| Logique combinatoire et séquentielle / Combinational and sequential logic                                    |  | 3         |           | 12        |                  |      |
| Commande / Control                                                                                           |  | 7,5       | 10,5      | 6         |                  |      |
| Fi - Commande / Control                                                                                      |  | 10,5      |           |           |                  |      |
| ING02-SH-Sciences Physiques                                                                                  |  | 52,5      | 31,5      | 9         | 5                |      |
| Thermodynamique / Thermodynamics                                                                             |  | 10,5      | 10,5      |           |                  |      |
| Fi - Thermodynamique / Thermodynamics                                                                        |  | 10,5      |           |           |                  |      |
| Chimie des matériaux / Materials Chemistry                                                                   |  | 10,5      | 10,5      |           |                  |      |
| Fi - Chimie des matériaux / Materials Chemistry                                                              |  | 10,5      |           |           |                  |      |
| Mécanique (statique) / Mechanics (static)                                                                    |  | 10,5      | 10,5      | 9         |                  |      |
| Fi - Mécanique (statique) / Mechanics (static)                                                               |  | 10,5      |           |           |                  |      |
| ING02-SH-Humanités                                                                                           |  | 28,50     | 91        | 0         | 5                |      |
| Anglais / English                                                                                            |  |           | 26        |           |                  |      |
| LV2 / Second Language / FLE                                                                                  |  |           | 26        |           |                  |      |
| Culture et communication / Culture and communication                                                         |  |           | 10,5      |           |                  |      |
| Fi - Culture et communication / Culture and communication                                                    |  | 10,50     |           |           |                  |      |
| Projet professionnel individualisé et responsable / Individualized and responsible professional project      |  |           | 10,5      |           |                  |      |
| Fi - Projet professionnel individualisé et responsable / Individualized and responsible professional project |  | 10,50     |           |           |                  |      |
| FAPSA / Training through physical, sporting and artistic activities                                          |  |           | 18        |           |                  |      |
| Enjeux climatiques et énergétiques / Climate and energy issues                                               |  | 7,5       |           |           |                  |      |
| ING02-SH-SAE                                                                                                 |  |           | 15        | 20        | 2                |      |
| SAE Enjeux climatiques et énergétiques / Learning and assessment situation-Climate and energy issues         |  |           | 15        | 20        |                  |      |
| Fi - SAE Enjeux climatiques et énergétiques / Learning and assessment situation-Climate and energy issues    |  | 15,00     |           |           |                  |      |
| ING02-SH-Implication                                                                                         |  |           |           |           |                  | 1    |
| ING02-SH-Harmonisation                                                                                       |  |           | 42        |           |                  | 0    |
| Harmonisation en Mathématiques / Harmonisation in mathematics                                                |  |           | 21        |           |                  |      |
| Harmonisation en Physique / Harmonisation in Physics                                                         |  |           | 21        |           |                  |      |
|                                                                                                              |  |           |           |           |                  |      |
| ING03-SH-Option                                                                                              |  |           |           |           |                  |      |
| ECU / EUNICE / Valo engagement                                                                               |  |           |           |           |                  |      |
| ING03-SH-Sciences fondamentales                                                                              |  | 42        | 42        |           |                  | 6    |
| Analyse/ Analysis                                                                                            |  | 21        | 21        |           |                  |      |
| Fi - Analyse/ Analysis                                                                                       |  | 21        |           |           |                  |      |
| Algèbre/ Algebra                                                                                             |  | 21        | 21        |           |                  |      |
| Fi - Algèbre/ Algebra                                                                                        |  | 21        |           |           |                  |      |
| ING03-SH-Informatique                                                                                        |  | 31,5      | 21        | 24        |                  | 5    |
| Algorithme et programmation/ Algorithm and programming                                                       |  | 10,5      | 10,5      | 12        |                  |      |
| Fi - Algorithme et programmation/ Algorithm and programming                                                  |  | 10,5      |           |           |                  |      |
| Bases de données relationnelles / Relational Databases                                                       |  | 10,5      | 10,5      | 12        |                  |      |
| Fi - Bases de données relationnelles / Relational Databases                                                  |  | 10,5      |           |           |                  |      |
| ING03-SH-Electronique et automatique                                                                         |  | 69        | 40,5      | 12        | 6                |      |
| Electromagnétisme / Electromagnetism                                                                         |  | 10,5      | 10,5      |           |                  |      |
| Fi - Electromagnétisme / Electromagnetism                                                                    |  | 10,5      |           |           |                  |      |
| Ondes électromagnétiques / Electromagnetic waves                                                             |  | 10,5      | 10,5      |           |                  |      |
| Fi - Ondes électromagnétiques / Electromagnetic waves                                                        |  | 10,5      |           |           |                  |      |
| Optique ondulatoire / Wave optics                                                                            |  | 10,5      | 10,5      |           |                  |      |
| Fi - Optique ondulatoire / Wave optics                                                                       |  | 10,5      |           |           |                  |      |
| Automatismes / Automation                                                                                    |  | 6         | 9         | 12        |                  |      |
| Fi - Automatismes / Automation                                                                               |  | 9         |           |           |                  |      |
| ING03-SH-Sciences Physiques                                                                                  |  | 40,5      | 25,5      | 12        | 5                |      |
| Mécanique (Dynamique 1) / Mechanics (Dynamics 1)                                                             |  | 10,5      | 10,5      |           |                  |      |
| Fi - Mécanique (Dynamique 1) / Mechanics (Dynamics 1)                                                        |  | 10,5      |           |           |                  |      |
| Méthodes numériques appliquées / Applied Numerical Methods                                                   |  | 4,5       | 4,5       | 12        |                  |      |
| Fi - Méthodes numériques appliquées / Applied Numerical Methods                                              |  | 4,5       |           |           |                  |      |
| Thermodynamique chimique / Chemical Thermodynamics                                                           |  | 10,5      | 10,5      |           |                  |      |
| Fi - Thermodynamique chimique / Chemical Thermodynamics                                                      |  | 10,5      |           |           |                  |      |
| ING03-SH-Humanités                                                                                           |  | 16,5      | 80,5      | 0         | 4                |      |
| Anglais / English                                                                                            |  |           | 26        |           |                  |      |
| LV2 / Second Language / FLE                                                                                  |  |           | 26        |           |                  |      |
| Culture et communication / Culture and communication                                                         |  |           | 10,5      |           |                  |      |
| Fi - Culture et communication / Culture and communication                                                    |  | 10,5      |           |           |                  |      |
| FAPSA / Training through physical, sporting and artistic activities                                          |  |           | 18        |           |                  |      |
| ING02-SH-Implication                                                                                         |  |           |           |           |                  | 1    |
| ING03-SH-Stage découverte                                                                                    |  |           |           |           |                  | 3    |
|                                                                                                              |  |           |           |           |                  |      |
| ING04-SH-Option                                                                                              |  |           |           |           |                  |      |
| ECU / EUNICE / Valo engagement                                                                               |  |           |           |           |                  |      |
| ING04-SH-Sciences fondamentales                                                                              |  | 52,5      | 52,5      | 9         | 8                |      |
| Analyse/ Analysis                                                                                            |  | 21        | 21        |           |                  |      |
| Fi - Analyse/ Analysis                                                                                       |  | 21        |           |           |                  |      |
| Algèbre/ Algebra                                                                                             |  | 21        | 21        |           |                  |      |
| Fi - Algèbre/ Algebra                                                                                        |  | 21        |           |           |                  |      |
| Analyse numérique / Numerical Analysis                                                                       |  | 10,5      | 10,5      | 9         |                  |      |
| Fi - Analyse numérique / Numerical Analysis                                                                  |  | 10,5      |           |           |                  |      |
| ING04-SH-Humanités                                                                                           |  | 15,5      | 80,5      | 0         | 5                |      |
| Anglais                                                                                                      |  |           | 26        |           |                  |      |
| LV2 / Second Language / FLE                                                                                  |  |           | 26        |           |                  |      |
| Culture et communication                                                                                     |  |           | 10,5      |           |                  |      |
| Fi - Culture et communication                                                                                |  | 10,5      |           |           |                  |      |
| FAPSA                                                                                                        |  |           | 18        |           |                  |      |
| Interculturalité                                                                                             |  | 5         |           |           |                  |      |
| ING04-SH-INFORMATIQUE                                                                                        |  | 15        | 15        | 12        | 3                |      |
| Introduction à la sécurité des systèmes d'informations / Introduction to Information Systems Security        |  | 7,5       | 7,5       | 6         |                  |      |
| Fi - Introduction à la sécurité des systèmes d'informations / Introduction to Information Systems Security   |  | 7,5       |           |           |                  |      |
| Génie logiciel / Software engineering                                                                        |  | 7,5       | 7,5       | 6         |                  |      |
| Fi - Génie logiciel / Software engineering                                                                   |  | 7,5       |           |           |                  |      |
| ING04-SH-AUTOMATIQUE                                                                                         |  | 7,5       | 19,5      | 21        | 3                |      |
| Management des systèmes industriels / Industrial Systems Management                                          |  | 1,5       | 10,5      | 9         |                  |      |
| Fi - Management des systèmes industriels / Industrial Systems Management                                     |  | 10,5      |           |           |                  |      |
| Contrôle commande / Controls and Automation                                                                  |  | 6         | 9         | 12        |                  |      |
| Fi - Contrôle commande / Controls and Automation                                                             |  | 6         |           |           |                  |      |
| ING04-SH-ELECTRONIQUE                                                                                        |  | 27        | 15        | 0         | 3                |      |
| Electronique embarquée par les télécoms / Electronics embedded by telecoms                                   |  | 9         | 6         |           |                  |      |
| Fi - Electronique embarquée par les télécoms / Electronics embedded by telecoms                              |  | 6         |           |           |                  |      |
| Découverte de la Mécatronique / Discovery of Mechatronics                                                    |  | 9         | 4,5       |           |                  |      |
| Fi - Découverte de la Mécatronique / Discovery of Mechatronics                                               |  | 9         |           |           |                  |      |
| Introduction aux technologies de l'audiovisuel / Introduction to Audiovisual Technologies                    |  | 4,5       | 4,5       |           |                  |      |
| Fi - Introduction aux technologies de l'audiovisuel / Introduction to Audiovisual Technologies               |  | 4,5       |           |           |                  |      |
| ING04-SH-MECANIQUE                                                                                           |  | 13,5      | 16,5      | 12        | 3                |      |
| Initiation à la conception mécanique / Introduction to mechanical design                                     |  |           |           | 12        |                  |      |
| Mécanique (Dynamique 2) / Mechanical (Dynamics 2)                                                            |  | 6         | 9         |           |                  |      |
| Fi - Mécanique (Dynamique 2) / Mechanical (Dynamics 2)                                                       |  | 9         |           |           |                  |      |
| Introduction à l'énergétique / Introduction to Energetics                                                    |  | 7,5       | 7,5       |           |                  |      |
| Fi - Introduction à l'énergétique / Introduction to Energetics                                               |  | 7,5       |           |           |                  |      |
| ING04-SH-Implication                                                                                         |  |           |           |           |                  | 1    |
| ING04-SH-SAE                                                                                                 |  |           |           | 30        | 40               |      |
| SAE électif / Elective Learning and assessment situation                                                     |  |           |           |           |                  |      |
| SAE Méca 1                                                                                                   |  |           |           | 30        | 40               |      |
| SAE Méca 2                                                                                                   |  |           |           | 30        | 40               |      |
| SAE Méca 3                                                                                                   |  |           |           | 30        | 40               |      |
| SAE Méca 4                                                                                                   |  |           |           | 30        | 40               |      |
| SAE Auto 1                                                                                                   |  |           |           | 30        | 40               |      |
| SAE Auto 2                                                                                                   |  |           |           | 30        | 40               |      |
| SAE Elec 2                                                                                                   |  |           |           | 30        | 40               |      |
| SAE Elec 3                                                                                                   |  |           |           | 30        | 40               |      |
| SAE Elec 1                                                                                                   |  |           |           | 30        | 40               |      |
| SAE Info 1                                                                                                   |  |           |           | 30        | 40               |      |
| SAE Info 2                                                                                                   |  |           |           | 30        | 40               |      |