# Required Courses for Students Majoring in Mechanical Engineering (Opto-Mechatronics Section) in the College of Engineering (applicable to students admitted in Fall 2008)

| Academic Year Semester Course Titles | First Year | | Second Year | | Third Year | | Fourth Year | |
|---|---|---|---|---|---|---|---|---|
| | Fall | Spring | Fall | Spring | Fall | Spring | Fall | Spring |
| Common Required Courses (30) | Chinese (3) | Chinese (3) | History (2) | | | | | |
| | Foreign Languages (3) | Foreign Languages (3) | | | | | | |
| | ●16 credit hours of General Education courses, of which one course must be from each of the following core areas: Humanities & Thought, Physical Science, Applied Science, and Social Thought & Phenomenon. The remaining courses may be General Education electives.<br>●One non-credit Physical Education course each semester of their first three academic years, two of which must be Freshman PE I and Freshman PE II.<br>●One non-credit Service Education course in the fall and spring semester of an academic year. | | | | | | | |
| Required Courses of the College (14) | Calculus MA1003 (3) | Calculus MA1004 (3) | | | | Engineering Ethics EG4002 (2) | | |
| | Programming for Engineering EG1001 (3) | General Physics PH1022 (3) | | | | | | |
| Required Courses of the Department (48) | Experiments of Manufacture Engineering I ME1041 (1) | Statics & Mechanics of Materials ME1006 (4) | Engineering Mathematics I ME2001 (3) | Engineering Mathematics II ME2002 (3) | Measurement Laboratory ME3096 (1) | | | |
| | Mechanical Drawing ME2037 (1) | Experiments of Manufacture Engineering II ME1042 (1) | Mechanisms ME2035 (3) | Electrical Circuits and Electronics ME2065 (3) | Precision Machine Design I ME3043 (3) | | | |
| | | Mechanical Drawing ME2038 (1) | Dynamics ME2013 (3) | Experiments of Electrical Circuits and Electronics ME2066 (1) | Fluid Mechanics ME3081 (3) | | | |
| | | General Physics Laboratory PH1024 (1) | Materials Science ME2051 (3) | Precision Manufacturing Processes I ME2056 (3) | Electromagnetics ME3055 (3) | | | |

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| | | | Thermodynamics I<br>ME2073<br>(3) | Automatic Control I<br>ME4061<br>(3) | | | | |
| | | | | Automatic Control Laboratory I<br>ME4059<br>(1) | | | | |
| Required Courses of the Section<br>(11) | Micro-Controller<br>ME1018<br>(3) | | | | Basic Engineering Optics I<br>ME2003<br>(3) | Basic Engineering Optics II<br>ME2004<br>(3) | | |
| | Experiments of Micro-Controller<br>ME1019<br>(1) | | | | | Basic Engineering Optics Experiments<br>ME2023<br>(1) | | |
| Core Electives of the Section<br>(9) | | | | | Heat Transfer (ME3072) (3)<br>光電概論 (OM6025) (3)<br>感測原理 (ME3056) (3)<br>光機電介面及實驗 (OM6021) (4)<br>Electromagnetic and Electromechanical Machines (ME 3054) (3)<br>光學機構系統設計與分析 (OM5006) (3)<br>One of the following two courses:<br>Special Topics on Opto-Mechatronic I (ME 3038) (3)<br>Special Topic on Opto-Mechatronic II (ME3037) (3) | | | |
| Total Semester Credit Hours | 18 | 19 | 15 | 14 | 13 | 6 | | |

Notes

1. The numerical figures in parentheses refer to course credit hours.
2. The calculation of semester hours shall not include credit hours earned from Core Electives of the Section, General Education courses or History.
3. The minimum number of earned credit hours required for graduation is 132. Students must also fulfill the following requirements:
   (1) Earn 103 credit hours of required courses (including Common Required Courses and Required Courses of the College, of the Department and of the Section);
   (2) Earn 27 credit hours of specialized electives (including courses offered by the Graduate Institute of Opto-mechatronics Engineering, the Graduate Institute of Energy Engineering, the Graduate Institute of Biomedical Engineering and the Graduate Institute of Materials Science and Engineering), a minimum of nine credit hours of which must be from the Core Electives of the Section.
4. Students are required to complete the prerequisites before taking the following required courses:

| | Required Courses | Prerequisites |
|---|---|---|
| (1) | Calculus (MA1004) | Calculus (MA1003): 50 points or more |
| (2) | Engineering Mathematics I | Calculus (MA1003 and MA1004): 50 points or more |
| (3) | Engineering | Engineering Mathematics I: 50 points or more |

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|---|---|---|---|
| | (4) | Mathematics II<br>Dynamics | Statics & Mechanics of Materials: 60 points or more |
| | (5) | Basic Engineering Optics II | Basic Engineering Optics I: 50 points or more |

5. Where a required course is divided into two levels (e.g., Basic Engineering Optics I & II), students must receive a grade of 50 or more in the first level before proceeding to the second.
6. Students must take Foreign Language courses and General Education courses in accordance with the University's *Guidelines for the Selection of Common Required Courses.*
7. Before being permitted to graduate, students must demonstrate their English proficiency by reaching a threshold score in one of the English proficiency tests recognized by the Language Center or by passing two semesters of Remedial English; credit hours thus earned may not be counted toward the minimum number required for a baccalaureate degree (for details, refer to the University's *Implementation Procedures for Freshman Foreign Language Courses* and *Implementation Procedures for Remedial English Courses*).
8. Students are required to receive a passing grade in Service Education in accordance with the University's *Service Education Implementation Procedures* before being permitted to graduate.