

ESE Curriculum (2016 Cohort - Normative 4-year Degree)

[min. no. of CUs for the award: 120]

(1) Gateway Education (GE) Requirement (30 CUs)

| GE Requirement | | Credit Units |
|-------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| University Requirements | GE1401 University English | 3 |
| | GE2401 / English for Science / GE2410 English for Engineering | 3 |
| | GE1501 Chinese Civilisation – History and Philosophy | 3 |
| Distributional Requirements | A minimum of 3 credit units from each of the three distributional areas below: - Area 1: Arts and Humanities - Area 2: Study of Societies, Social and Business Organisations - Area 3: Science and Technology | 12 |
| School-specified Requirements | MBE2016 Engineering Graphics plus any non-GE courses offered by the University Students are highly recommended to discuss with their academic advisors before registering for any except MBE2016. | 9 |
| Total | | 30 |

(2) School Requirement (18 CUs)

| Course | Credit Units | Remarks |
|---------------------------------------------------------------------------------------------------|--------------|--------------------------------|
| AP1201 General Physics I | 3 | |
| BCH1100 Chemistry | 3 | |
| BCH1200 Discovery in Biology | 3 | |
| MA1200 / Calculus and Basic Linear Algebra I / MA1300 Enhanced Calculus and Linear Algebra I | 3 | Select either MA1200 or MA1300 |
| MA1201 / Calculus and Basic Linear Algebra II / MA1301 Enhanced Calculus and Linear Algebra II | 3 | Select either MA1201 or MA1301 |
| SEE1002 Introduction to Computing for Energy and Environment | 3 | |

(3) Major Requirement (72 CUs)

A. Basic Core Courses (19 CUs)

| Course | Credit Units |
|---------------------------------------------------------|--------------|
| MA2172 Applied Statistics for Sciences and Engineering | 3 |
| MA2181 Mathematical Methods for Engineering | 3 |
| SEE2001 Electromagnetic Principles for Energy Engineers | 3 |
| SEE2002 Chemical Sciences for Energy Engineers | 4 |
| SEE2101 Thermosciences for Energy Conversion I | 3 |
| SEE2201 Introduction to Environmental Engineering | 3 |

B. Major Core Courses (41 CUs)

| Course | Credit Units |
|---------------------------------------------------------------------|--------------|
| SEEM4024 Project Management | 3 |
| SEE3001 Energy and Energy-related Environmental Policy | 3 |
| SEE3002 Energy and Energy-related Environmental Economics | 3 |
| SEE3101 Thermosciences for Energy Conversion II | 4 |
| SEE3102 Power Plant Engineering | 3 |
| SEE3103 Energy Efficiency for Buildings | 3 |
| SEE3104 Sustainable and Renewable Energy | 3 |
| SEE4001 Engineers in Society | 3 |
| SEE4004 Environmental Impact Assessment for Sustainable Development | 4 |
| SEE4112 Energy Systems: Modelling and Analysis | 3 |
| SEE4217 Waste and Wastewater Treatment | 3 |
| SEE4997 Final Year Project | 6 |

C. Electives (12 CUs) - select at least *FOUR* courses from the following list

| Course | Credit Units | Remarks |
|----------------------------------------------------------------------------------------|--------------|------------------------------------------------------------------------------------------------------------------------------------------|
| SDSC3002 Data Mining | 3 | Select at least three from Courses SDSC3002, SEE4111, SEE4113, SEE4114, SEE4115, SEE4116, SEE4117, SEE4118, SEE4119, SEE4120 and SEE4121 |
| SEE4111 Nuclear Energy Engineering | 3 | |
| SEE4113 Nanotechnology in Energy Conversion and Storage: Concepts and Creative Science | 3 | |
| SEE4114 Bioenergy Engineering: Principles and Applications | 3 | |
| SEE4115 Energy Catalysis and Reaction Engineering | 3 | |
| SEE4116 Energy and Carbon Auditing | 3 | |
| SEE4117 Solar Energy Engineering | 3 | |
| SEE4118 Wind and Marine Energy | 3 | |
| SEE4119 Electrical Energy Conversion | 3 | |
| SEE4120 Materials Engineering for Energy Applications | 3 | |
| SEE4121 Gas Engineering | 3 | Select at least one from Courses SEE3201, SEE3204*, SEE3205, SEE4202, SEE4205, SEE4213, SEE4216 and SEE4218 |
| SEE3201 Atmospheric Science – An Introductory Survey | 3 | |
| SEE3204* Urban Sustainability | 3 | |
| SEE3205 Urban Sustainability | 3 | |
| SEE4202 Atmospheric Chemistry | 3 | |
| SEE4205 Design of Smart Cities and Sustainable Building | 3 | |
| SEE4213 An Introduction to Environmental Data Analysis | 3 | |
| SEE4216 Combustion and Air Pollution Control | 3 | |
| SEE4218 Water Quality Engineering | 3 | |

*SEE3204 is a summer course (not offer until further notice)

ESE Curriculum (2016 Cohort – Advanced Standing I)

[min. no. of CUs for the award: 90]

(1) Gateway Education (GE) Requirement (21 CUs)

| GE Requirement | | Credit Units |
|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| University Requirements | GE1401 University English | 3 |
| | GE2401 / English for Science / GE2410 English for Engineering | 3 |
| | GE1501 Chinese Civilisation – History and Philosophy | 3 |
| Distributional Requirements | A minimum of 6 credit units from two of the three distributional areas below: - Area 1: Arts and Humanities - Area 2: Study of Societies, Social and Business Organisations - Area 3: Science and Technology | 6 |
| School-specified Requirements | MBE2016 Engineering Graphics plus any non-GE course offered by the University Students are highly recommended to discuss with their academic advisors before registering for any except MBE2016. | 6 |
| Total | | 21 |

(2) School Requirement (Not required)

(3) Major Requirement (69 CUs)

A. Basic Core Courses (16 CUs)

| Course | Credit Units |
|---------------------------------------------------------|--------------|
| MA2181 Mathematical Methods for Engineering | 3 |
| SEE2001 Electromagnetic Principles for Energy Engineers | 3 |
| SEE2002 Chemical Sciences for Energy Engineers | 4 |
| SEE2101 Thermosciences for Energy Conversion I | 3 |
| SEE2201 Introduction to Environmental Engineering | 3 |

B. Major Core Courses (41 CUs)

| Course | Credit Units |
|---------------------------------------------------------------------|--------------|
| SEEM4024 Project Management | 3 |
| SEE3001 Energy and Energy-related Environmental Policy | 3 |
| SEE3002 Energy and Energy-related Environmental Economics | 3 |
| SEE3101 Thermosciences for Energy Conversion II | 4 |
| SEE3102 Power Plant Engineering | 3 |
| SEE3103 Energy Efficiency for Buildings | 3 |
| SEE3104 Sustainable and Renewable Energy | 3 |
| SEE4001 Engineers in Society | 3 |
| SEE4004 Environmental Impact Assessment for Sustainable Development | 4 |
| SEE4112 Energy Systems: Modelling and Analysis | 3 |
| SEE4217 Waste and Wastewater Treatment | 3 |
| SEE4997 Final Year Project | 6 |

C. Electives (12 CUs) - select at least *FOUR* courses from the following list

| Course | Credit Units | Remarks |
|----------------------------------------------------------------------------------------|--------------|------------------------------------------------------------------------------------------------------------------------------------------|
| SDSC3002 Data Mining | 3 | Select at least three from Courses SDSC3002, SEE4111, SEE4113, SEE4114, SEE4115, SEE4116, SEE4117, SEE4118, SEE4119, SEE4120 and SEE4121 |
| SEE4111 Nuclear Energy Engineering | 3 | |
| SEE4113 Nanotechnology in Energy Conversion and Storage: Concepts and Creative Science | 3 | |
| SEE4114 Bioenergy Engineering: Principles and Applications | 3 | |
| SEE4115 Energy Catalysis and Reaction Engineering | 3 | |
| SEE4116 Energy and Carbon Auditing | 3 | |
| SEE4117 Solar Energy Engineering | 3 | |
| SEE4118 Wind and Marine Energy | 3 | |
| SEE4119 Electrical Energy Conversion | 3 | |
| SEE4120 Materials Engineering for Energy Applications | 3 | |
| SEE4121 Gas Engineering | 3 | Select at least one from Courses SEE3201, SEE3204*, SEE3205, SEE4202, SEE4205, SEE4213, SEE4216 and SEE4218 |
| SEE3201 Atmospheric Science – An Introductory Survey | 3 | |
| SEE3204* Urban Sustainability | 3 | |
| SEE3205 Urban Sustainability | 3 | |
| SEE4202 Atmospheric Chemistry | 3 | |
| SEE4205 Design of Smart Cities and Sustainable Building | 3 | |
| SEE4213 An Introduction to Environmental Data Analysis | 3 | |
| SEE4216 Combustion and Air Pollution Control | 3 | |
| SEE4218 Water Quality Engineering | 3 | |

*SEE3204 is a summer course (not offer until further notice)