

CURRICULUM OF FULL-TIME BSC(HONS) IN ENGINEERING PHYSICS – SENIOR YEAR

The curriculum of this programme, including the credit requirements, is subject to review:

Total credits requirement for 11439-SY is 62 credits^{#*}:

1. General University Requirement (GUR)

a. Cluster Areas Requirement (CAR) (6 credits)

- 3 credits from CAR (M) “Chinese History and Culture”
- 3 credits from a specially-designed CAR (A) “Human Nature, Relations and Development”
– English language with English Reading and Writing Requirements

b. Service-Learning (3 credits)

c. Essential Components of General Education E-modules on: (Non-credit-bearing)

1. Academic Integrity
2. Artificial Intelligence and Data Analytics
3. Innovation and Entrepreneurship
4. National Education

➔ Four individual e-modules on Blackboard for two consecutive semesters (from Sem 1 to Sem 2)

2. Discipline-Specific Requirement (DSR)

a. 11439-SY Discipline-Specific Subjects (41 credits)

b. Free Elective Subjects (12 credits) with subject level 3 or above, from AP/ other departments.

c. Work-Integrated Education (WIE) (Non-credit-bearing): 120 hours

The Language and Communication Requirements (LCR) is normally not required. Only those students not meeting the equivalent standard of the Undergraduate Degree LCR (based on their previous studies in AD/HD programmes and their academic performance) will be required to take LCR subjects on top of the normal curriculum requirement. AP will refer to the guidelines provided by the Language Centres (ELC and CLC) to determine whether a new student has met the equivalent standard, with special reference to academic writing ability.

*Programme leader will provide academic counseling to students upon their admission and before subject registration. New students' academic backgrounds will be reviewed, and see if they need to take other physics fundamental courses in order to enrich their knowledge.

3. Curriculum

| Year/ Semester | Subject Code | Subject | Credit | Compulsory/ Elective | Pre-requisite |
|--|-----------------|---|------------------|-------------------------|---------------|
| 1/1 | AP30012 | Thermal and Statistical Physics | 3 | C | AP20006 |
| 1/1 | | CAR I (GUR) | 3 | C | |
| 1/1 | ELC3121 | English for Scientific Communication (DSR Language) | 2 | C | LCR English |
| 1/1 | | 3 Electives ⁺ | 9 | E | |
| <i>Credits for Year 1, Semester 1</i> | | | <i>17</i> | | |
| 1/2 | AP20006 | Quantum Mechanics for Scientists and Engineers | 3 | C | AP10006 |
| 1/2 | CLC2211P | Chinese Communication for Science Professionals | 2 | C | |
| 1/2 | | Service-Learning (GUR) | 3 | C | |
| 1/2 | | 3 Electives ⁺ | 9 | E | |
| <i>Credits for Year 1, Semester 2</i> | | | <i>17</i> | | |
| 2/1 | AP40004 | Project (yearly subject) | 2 | C | |
| 2/1 | | CAR II (GUR) | 3 | C | |
| 2/1 | | 3 Electives ⁺ | 9 | E | |
| <i>Credits for Year 1, Semester 1</i> | | | <i>14</i> | | |
| 2/2 | AP40004 | Project (yearly subject) | 2 | C | |
| 2/2 | AP30011 | Solid State Physics | 3 | C | AP20006 |
| 2/2 | | 3 Electives ⁺ | 9 | E | |
| <i>Credits for Year 1, Semester 2</i> | | | <i>14</i> | | |
| Total: | | | 62 | | |

4. Elective subjects offered by AP%:

Elective subjects in Semester 1

- AP30001 Applied Acoustics <Pre-requisite: AP20003>
- AP30002 Computational Physics <Pre-requisite: AP20005>
- AP30009 Laser Principles and Applications
- AP30013 Photonics Laboratory
- AP30014 Science & Technology of Photovoltaics <Pre-requisite: AP20006>
- AP30017 Medical Imaging: Science and Technology

- AP40001 Advanced Physics Laboratory <Pre-requisite: AP10007>
- AP40002 Display Technology
- AP40011 Materials in Energy Conversion and Storage
- AP40012 Machine Learning in Physics <Pre-requisite: AP20005>

Elective subjects in Semester 2

- AP30003 Detectors and Imaging Devices <Pre-requisite: AP20006>
- AP30004 Electromagnetic Fields <Pre-requisite: AP20001 and AP20008>
- AP30005 Advanced Scientific Instrumentation
- AP30007 Optical Design
- AP30010 Radiation Physics

- AP40003 Solid State Lighting
- AP40005 Optoelectronic Packaging and Reliability
- AP40006 Semiconductor Materials and Devices <Pre-requisite: AP20002>
- AP40009 Advanced Photonics Laboratory <Pre-requisite: AP30013>
- AP40010 Lighting Control Technology

% The above subject list is subject to revision. Offering of subjects is subject to the availability of teaching staff and viable enrolment number. The Department has the discretion on the offering semester and class quota.