B.Eng (Computer Engineering)

https://ceg.nus.edu.sg

Joint programme offered by
College of Design and Engineering (Dept of ECE)
and
School of Computing (Dept of CS)

A/Prof Bharadwaj Veeravalli, Chair, JAC
A/Prof Richard Ma, Co-Chair, JAC
CEG Joint Academic Committee

Assoc Prof Bharadwaj Veeravalli (Chair, JAC)
Assoc Prof Richard Ma (Co-Chair, JAC)
Prof Peh Li Shiuan
Prof Anthony Tung
Assoc Prof Tham Chen Khong (DH(Acad))
Dr Boyd Anderson
Dr Sangit Sasidhar (CEG IA coordinator)
Ravi Suppiah (Year 1 Coordinator)
Dr Rajesh C Panicker (Year 2 & 3 Coordinator)
Dr Colin Tan Keng Yan (Year 4 Coordinator/FYP Coordinator)
Dr Charles Lim
A/Prof Hari Krishna Garg (FYP Coordinator)

Mr Low Mun Bak (Manager, Admin support for CEG1 & CEG2)
Ms Winnie Chua (Manager, Admin support for CEG3 & CEG4)
Agenda

• On upcoming EAB Accreditation 2023

By Dr. Rajesh C Panicker – CEG2 Curriculum related briefing
• Recommended Schedules (Direct & Poly)
• Year 2 specifics pertaining to Core and Elective modules; Graduation requirements, etc.
• On different Pathways
• Grade Point System
• S/U rules
• Role of Academic Advisors

Not exclusively in this talk – on IA! On IA related matters a separate talk will be arranged at a later date by the IA coordinator.
What is EAB and Why EAB Accreditation?

Engineering Accreditation Board (EAB)

body set up by Institution of Engineers Singapore (IES) for accreditation of engineering degree programmes offered by Singapore universities

global recognition through Washington Accord agreement

Accreditation requires evidence of –

Graduates with:

- sound knowledge of discipline + engineering skills* and behaviors
- *ability to handle complex engineering problems
- professional engineering competence, e.g. ethics, societal and sustainability awareness

Department has:

- qualified academic staff and facilities, e.g. laboratories, computers, library
- continuous quality improvement (CQI) process

- EAB Panel On-Site Visit in September/October 2023
EAB Certificates (2018)
<table>
<thead>
<tr>
<th>#</th>
<th>Programme</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Welcome Address by A/Prof Bharadwaj Veeravalli Chair, Joint Academic Committee (JAC)</td>
</tr>
<tr>
<td>2</td>
<td>Academic Matters by Dr Rajesh C Panicker CEG Year 2 Coordinator</td>
</tr>
<tr>
<td>3</td>
<td>NUS Overseas Colleges (NOC) Start-up your Entrepreneurial Experience with NOC</td>
</tr>
<tr>
<td>4</td>
<td>Talk by Ms PS Lee, Career Advisor, Centre for Future-ready Graduates (CFG)</td>
</tr>
<tr>
<td>5</td>
<td>Talk by Undergraduate Student Council (USC) election</td>
</tr>
</tbody>
</table>
Programme Educational Objectives (PEOs)

The educational objectives of the Bachelor of Engineering (Computer Engineering) programme are to graduate students who, 5 years after their graduation:

- are technically competent and innovative in solving complex problems in computer engineering, and can adapt effectively in a fast changing environment (Technical skills)
- are able to critically think, analyse and make decisions that give due consideration to global issues in business, ethics, society and the environment (Critical Thinking)
- are able to communicate effectively, act with integrity, and have the interpersonal skills needed to engage in, lead, and nurture diverse teams (Leadership, team building)
- are committed to lifelong learning, resourceful, resilient and can embrace global challenges and opportunities to make a positive impact in society. (Attitude)
The educational objectives of the Bachelor of Engineering (Computer Engineering) programme are to graduate students who, 5 years after their graduation:

- are technically competent and innovative in solving complex problems in computer engineering, and can adapt effectively in a fast changing environment (Technical skills)
- are able to critically think, analyse and make decisions that give due consideration to global issues in business, ethics, society and the environment (Critical Thinking)
- are able to communicate effectively, act with integrity, and have the interpersonal skills needed to engage in, lead, and nurture diverse teams (Leadership, team building)
- are committed to lifelong learning, resourceful, resilient and can embrace global challenges and opportunities to make a positive impact in society. (Attitude)
Student Learning Outcomes (SLOs):

Criterion stresses that the programme must demonstrate that by the time of graduation, the students have attained the following (12) graduate attributes:

1. **Engineering knowledge**: Apply the knowledge of mathematics, natural science, engineering fundamentals, and an engineering specialisation as specified in WK1 to WK4 respectively to the solution of complex engineering problems.

2. **Problem Analysis**: Identify, formulate, research literature, and analyse complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences. (WK1 to WK4)

3. **Design/development of Solutions**: Design solutions for complex engineering problems and design systems, components or processes that meet the specified needs with appropriate consideration for public health and safety, cultural, societal, and environmental considerations. (WK5)

4. **Investigation**: Conduct investigations of complex problems using research-based knowledge (WK8) and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

5. **Modern Tool Usage**: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering problems, with an understanding of the limitations. (WK6)
f) **The engineer and Society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal, and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

g) **Environment and Sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for, the sustainable development. (WK7)

h) **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice. (WK7)

i) **Individual and Team Work:** Function effectively as an individual, and as a member or leader in diverse teams and in multidisciplinary settings.
j) **Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

k) **Project Management and Finance:** Demonstrate knowledge and understanding of the engineering management principles and economic decision-making, and apply these to one’s own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

l) **Life-long Learning:** Recognise the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.
CRITERIA FOR COMPUTER ENGINEERING PROGRAMME

(1) Graduates of the Computer Engineering programme must have knowledge of probability and statistics, differential and integral calculus, discrete mathematics, basic sciences, computer science, and engineering sciences for the analysis and design of complex electrical and electronic devices, software, and systems containing hardware and software components.
Joint Department Briefing for CEG2

19 July 2022, 10am

Dr Rajesh C Panicker rajesh@nus.edu.sg
CEG Year 2 Coordinator
Joint Academic Committee (JAC)
Department of Electrical & Computer Engineering
Calling for Achievements & News in Competitions, Projects, Sports, etc., so that we can brag broadcast!

Refer to https://ceg.nus.edu.sg/students/achievements/

CEG1 & CEG2 students: Email Mun Bak lowmb@nus.edu.sg
CEG3 & CEG4 students: Email Winnie cegcwn@nus.edu.sg
# B.Eng. (Computer Engineering)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Creating Narratives</td>
<td></td>
<td>Professionalism</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Project Management</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Data Literacy</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Integrated Project</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Unrestricted</th>
<th>Design Thinking</th>
<th>Maker Space</th>
<th>Systems Thinking</th>
<th>Artificial Intelligence</th>
<th>Integrated Project</th>
</tr>
</thead>
<tbody>
<tr>
<td>2nd Major / Minor</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2nd Major / Minor</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2nd Major / Minor</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2nd Major / Minor</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2nd Major / Minor</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2nd Major / Minor</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Full BEng(CEG) Degree Requirements
(for **AY21/22** intake)

<table>
<thead>
<tr>
<th>Programme Requirements</th>
<th>General Education Modules</th>
<th>Unrestricted Elective Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>96MCs</td>
<td>24MCs in total, comprising of:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Communities and Engagement (GEN)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cultures and Connections (GEC)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Critique and Expression (ES2631)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Digital Literacy (CS1010)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Data Literacy (GEA1000)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Singapore Studies (GESS)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>40 MCs, drawn from modules offered across NUS (including ES1000/ES1103, if not exempted)</td>
<td></td>
</tr>
</tbody>
</table>

Total MCs = 160

Honours Degree Classification is **determined by CAP**
<table>
<thead>
<tr>
<th>Programme Components</th>
<th>Modules</th>
<th>CEG AY21/22 intake</th>
<th>MCs</th>
</tr>
</thead>
</table>
| Common Curriculum Requirements        | ▪ Singapore Studies  
▪ Cultures and Connections  
▪ Communities and Engagement  
▪ Critique and Expression  
▪ Digital Literacy  
▪ Data Literacy  
▪ Design Thinking | ▪ Maker Space  
▪ Systems Thinking  
▪ Artificial Intelligence  
▪ Sustainable Futures  
▪ Creating Narratives  
▪ Project Management  
▪ Integrated Project (8MCs) | 60 |
| Programme Requirements                | Engineering Core (20MCs)  
▪ MA1511 Engineering Calculus (2MCs)  
▪ MA1512 Diff Eqns for Engrg (2MCs)  
▪ MA1508E Linear Algebra for Engrng  
▪ EG2401A Engrg Professionalism (2MCs)  
▪ CP3880 ATAP (12MCs) or EG3611A (10MCs)  
CEG Major (40MCs)  
▪ CG1111A EPP I  
▪ CG2111A EPP II  
▪ CG2023 Signals & Systems | CEG Major (continued)  
▪ CG2027 Transistor level Digital Circuit (2MCs)  
▪ CG2028 Computer Organisation (2MCs)  
▪ CG2271 Real-time Operating Syst  
▪ CS1231 Discrete Structures  
▪ CS2040C Data Structures & Algo  
▪ CS2113 Software Engrg & Object-Oriented Programming  
▪ EE2026 Digital Design  
▪ EE4204 Computer Networks | 60 |
| Unrestricted Electives                | ▪ CEG Technical Electives  
▪ Build Your Own Degree | | 40 |
|                                       | **Total MCs for Programme Requirements**                               | **160**                                                                         |     |
### Possible Schedule for AY21/22

#### CEG AY2021/22 Direct Intake (with 6-months Industrial Attachment in Year 3)

<table>
<thead>
<tr>
<th>Sem 1</th>
<th>Sem 2</th>
<th>Sem 3</th>
<th>Sem 4</th>
<th>Sem 5</th>
<th>Sem 6</th>
<th>Sem 7</th>
<th>Sem 8</th>
</tr>
</thead>
<tbody>
<tr>
<td>CG1111A EPP1</td>
<td>CG2111A EPP2</td>
<td>CS1231 Discrete Structures</td>
<td>CG2023 Signals &amp; Systems</td>
<td>CP3880 ATAP (12 MCs) OR</td>
<td>CG2027 (2 MCs) and CG2028 (2 MCs)</td>
<td>CG4002 CEG Capstone Project (3 MCs)</td>
<td>UEM6</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CS1010 Programming Methodology</td>
<td>DTK1234 Design Thinking</td>
<td>CS2040C Data Structures &amp; Algorithms</td>
<td>CS2113 Software Engrg &amp; OOP</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EG1311 Design and Make</td>
<td>MA1508E Linear Algebra for Engrg</td>
<td>GEC1xxx Cultures and Connections</td>
<td>EE2026 Digital Design</td>
<td>EG3811A IA (10 MCs)</td>
<td>ESxxx Creating Narratives</td>
<td>EE4204 Computer Networks</td>
<td>UEM7</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MA1511 Engrg Calculus (2 MCs)</td>
<td>PF1101 Fundamentals of Project Mgmt</td>
<td>IE2141 Systems Thinking</td>
<td>EE2211 Introduction to Machine Learning</td>
<td>EG2401A Engrg Profs (2 MCs)*</td>
<td>QESS1xxx Singapore Studies</td>
<td>GEN1xxx Communities &amp; Engagement</td>
<td>UEM8</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MA1512 Diff Eqn for Engrg (2 MCs)</td>
<td>GEA1000 Quantitative Reasoning with Data</td>
<td>ES2631 Critique and Communication of Thinking and Design</td>
<td>EG2501 Liveable Cities</td>
<td>UEM2^</td>
<td>UEM4 e.g. ST2334</td>
<td>UEM5</td>
<td>UEM10</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ES1103^ OR UEM1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Total (minimum) Graduation Requirements = 160 MCs**

^Students on Industrial Attachment (IA) are allowed to take (up to) 20 MCs workload, including modules that are offered in the evenings (subject to approvals and availability). Depending on the preferred semester for IA, the modules for sem 5 & 6 may be mutually swapped. Students who prefer not to/are unable to take evening module(s) during IA, should take module(s) in the Special Terms (so as not to delay graduation).

**Important:**
- The three General Elective Modules (GEM) and ten Unrestricted Elective Modules (UEM) can be taken in any semester; the above serves as a guide
- Students are encouraged to use the UEMs, totaling 40 MCs, to fulfill Specialisation (SPN) / Technical Elective (TE) / 2nd Major / Minor, etc. You will need to plan in advance, in order to fulfill the pre-requisite(s) of the modules required for your intended SPN / TE / 2nd Major / Minor.
- *If not exempted.

[https://ceg.nus.edu.sg/students/studyschedule/](https://ceg.nus.edu.sg/students/studyschedule/)
# Possible Schedule for CEG AY21/22

## Poly intake

<table>
<thead>
<tr>
<th>Sem 1</th>
<th>Sem 2</th>
<th>Sem 3</th>
<th>Sem 4</th>
<th>May – Jul</th>
<th>Sem 5</th>
<th>Sem 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>CG1111A EPP1</td>
<td>CG2111A EPP2</td>
<td>CG2027 Transistor-level Digital Circuits (2 MCs)</td>
<td>CG2023 Signals &amp; Systems</td>
<td></td>
<td>CG4002 CEG Capstone Project (8 MCs)</td>
<td>ESxxxx Creating Narratives</td>
</tr>
<tr>
<td>CS1010 Programming Methodology</td>
<td>CS2040C Data Structures &amp; Algorithms</td>
<td>CG2028 Comp Org (2 MCs)</td>
<td>CG2271 RTOS</td>
<td></td>
<td></td>
<td>GEN1xxx Communities &amp; Engagement</td>
</tr>
<tr>
<td>MA1301 Introductory Math (UEM1)</td>
<td>EE2026 Digital Design</td>
<td>CS2113 Software Engg &amp; OOP</td>
<td>PF1101 Fundamentals of Project Mgmt</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ES1103* OR PC1201 Fundamentals of Physics (UEM2)</td>
<td>GEA1000 Quantitative Reasoning with Data</td>
<td>IE2141 Systems Thinking</td>
<td>EE2211 Introduction to Machine Learning</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GEC1xxx Cultures and Connections</td>
<td>MA1508E Linear Algebra for Engrg</td>
<td>ES2831 Critique and Communication of Thinking and Design</td>
<td>PC1201 (if not exc from ES1103) OR EG2501 Liveable Cities</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>MA1511 Engrg Calculus (2 MCs)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>MA1512 Diff Eqn for Engrg (2 MCs)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20 MCs</td>
<td>20 MCs</td>
<td>20 MCs</td>
<td>20 MCs</td>
<td>6 or 0 MCs</td>
<td>22 MCs</td>
<td>14 or 20 MCs</td>
</tr>
</tbody>
</table>

**TOTAL (MINIMUM) GRADUATION REQUIREMENTS = 160 MCs**

# Important:

- Poly students are required to take MA1301 (if not exempted) as bridging Math and PC1201 as bridging Physics.
- Poly students who are exempted from MA1301, will take MA1511 and MA1512 in place, AND will need to take additional UEM (to make up the 4 MCs shortfall).
- Students are encouraged to use the Unrestricted Elective Modules (UEM) to read CEG Technical Elective (TE) / Specialisation (SPN) / Minor. You will need to plan in advance, in order to fulfill the pre-requisite(s) of the modules required for your intended TE / SPN / Minor.

*Including Advanced Placement Credits (APCs) for DTK1234, EG1311, IA (10 MCs) and UEM (20 MCs)

*If not exempted.

[https://ceg.nus.edu.sg/students/studyschedule/](https://ceg.nus.edu.sg/students/studyschedule/)
Aims:
• Broaden students’ intellectual horizons
• Develop critical and creative thinking skills
• Promote spoken and written articulacy

24 MCs

General Education Modules / University-Level Requirements
Unrestricted Elective Modules

40 MCs

Aims:
• Explore greater breadth/depth in students’ discipline
• Read complementary or contrasting minor/Second Major

Students may use the UEM space:
• to read more technical electives
• to take up Specialisations, Second Major or Minors
• Minor
• Second Major
• Double Degree

Look up the details on host dept’s websites & email them/look out for e-blast on application e.g. Second Major in iDP or Minor in Data Engineering

Poly graduates are exempted from 20 MCs UEM (as APCs).
Unrestricted Elective Modules

Minor Programmes (20 MCs)
• List of Minor Programmes (more than 50 Minors offered)
  • http://www.nus.edu.sg/registrar/academic-information-policies/undergraduate-students/special-programmes/minor-programmes

  • Up to 8 MCs (40% of the MC requirements for a Minor) may be used to meet (i) the Minor requirement and (ii) another requirement, e.g., College, Faculty, Major, Second Major, Minor, Specialisation or other requirement.

Double Major / Second Major (40 MCs)
• List of Second Majors (more than 25 Second Majors offered):
  • http://www.nus.edu.sg/registrar/academic-information-policies/undergraduate-students/special-programmes/double-major-programmes

  • Up to 16 MCs (40% of the MC requirements for a Second Major) may be used to meet (i) the Second Major requirement and (ii) another requirement, e.g., College, Faculty, Major, Second Major, Minor, Specialisation or other requirement.
Advisory on Minor programmes

- ‘Open’ type:
  - Students can declare their intention to do an open minor via Academic Plan Declaration without any prior approval from the Host Dept, no later than the end of the fifth semester of study.

- ‘Restricted’ type:
  - Students are required to apply to the Host Dept and obtain approval (either via Acad Plan Declaration OR email/offline), no later than the end of the fifth semester of study. If approved, Host Dept will then request to update record(s) backend.

Note: Refer to the table in the website given earlier, under “Type” column
Advisory on UEM space

- Start taking steps to plan how you could use the UEM space meaningfully

- You should consider/review how to use your UEM now

- If you do not intend to do a Minor/Second Major, suggest to use your UEM space to read more technical elective (TEs) and/or take up a FYP; this will help to make you a more effective engineer.
Unrestricted Elective Modules

You can also use UEM space to take 1 MC module(s) under Roots & Wings 2.0 that train students on soft skills.

For Sem 1, AY21/22,
• PLS8001 Cultivating Collaboration
• PLS8002 Cultivating the Self
• PLS8003 Cultivating Resilience
• PLS8004 Optimizing Performance
• PLS8005 Evaluating Interpersonal Communication

Refer to Roots & Wings 2.0 website
http://www.fas.nus.edu.sg/psy/r&w/index.html#faq

If keen to read (in subsequent semesters), Select Module via ModReg from Round 1.
Mapping of RVRC and UTCP modules to fulfil GE Pillars

**RVRC PROGRAMME**

The four modules in the RVRC programme curriculum are designed to map directly to four of the six GE pillars. RVRC students who read the four modules will fulfil the requirements of the following GE pillars:

- Cultures and Connections
- Critique and Expression
- Singapore Studies
- Communities and Engagement

RVRC students will read the remaining two GE pillars of Data Literacy and Digital Literacy outside the RVRC Programme, as offered by the university or their home faculty.

**UTCP**

The UTCP is designed as an alternative pathway to the GE programme at NUS. UTCP students who read the four UTCP modules (a Junior Seminar, an Ideas & Exposition module and two Senior Seminars) will fulfil the requirements of the following four GE pillars:

- Cultures and Connections
- Critique and Expression
- Singapore Studies
- Communities and Engagement

The Data Literacy and Digital Literacy pillars will not be offered by the RCs in AY2021/2022 and UTCP students may read these modules with their faculties.
Specialisations (at least 20 MCs)

- **Specialisations**
  - Internet of Things
  - Robotics

- **Minor in Data Engineering**
  Techniques, infrastructures, frameworks and services to tease insights from the myriad of data streams being generated
  - enables intelligent decision making and sense-making
New Specialisations wef AY2022/2023
(at least 20 MCs)

New Specialisations:
• Advanced Electronics
• Sustainable Electric Transportation
• *Industry 4.0
• *Space Technology

*coming soon
Limit on Level-1000 modules

- **Should not** read more than 60 MCs of level 1000 modules (including Programme/Major, GEMs and UEMs)
  - The 60 MCs limit EXCLUDES CFG1002 Career Catalyst (2 MCs), ES1103 English for Academic Purposes (4 MCs), modules under DYOM initiatives and 20 MCs UEM APCs (for Poly graduates).

- Any MCs over this limit will not be counted towards the MCs required for graduation (160 MCs). However, they will still be counted/used towards CAP computation.
Core Modules - General remarks

• Refer to CEG programme - Almost all the Common Curr and Programme requirements are covered in Year 1 & 2

• Year 2 modules provide you a solid foundation for different areas in CEG;

• Most modules will have Labs + Assignments (Time + work) demanding

• Challenging to maintain your CAP!
Currently, the technical Breadth/Depth electives are grouped into six concentrations, as follows:

- Communications & Networking
- Embedded Computing
- Large-Scale Computing
- Intelligent Systems
- Interactive Digital Media
- System-On-a-Chip Design

Breadth electives provide broad understanding of concepts while depth electives provide greater depth & coverage.

Refer to CEG TE page (for AY17 intake & After) - https://ceg.nus.edu.sg/curriculum/electives-ay17/
The master-list of TEs listed within CEG concentrations will be updated around July (for Sem 1) and December (for Sem 2).

Also encouraged to attend industry talks organised by CS/ECE Department, Faculty of Engineering, School of Computing and/or NUS Centre for Future-ready Graduates.

Always refer to CEG TE page, at the start of a semester, for the complete/updated list of modules.
Some important points

- CEG students read/use ES2631 to fulfil pre-req check for EG2401A. As EG2401A is scheduled for Year 3, higher priority (to Select Module) goes to Engrg Year 3 students (Round 1). Year 2 students can only select from Round 3, subjected to quota availability.

- Another briefing on IA-related matters, three pathways and technical electives will be conducted for CEG2 students (AY21 intake) in February 2023.
## Grade Point System

### Grade Point (GP)

<table>
<thead>
<tr>
<th>Grade</th>
<th>Letter</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>A+/A</td>
<td>A</td>
<td>5.0</td>
</tr>
<tr>
<td>A-</td>
<td>B+</td>
<td>4.5</td>
</tr>
<tr>
<td>B+</td>
<td>B</td>
<td>4.0</td>
</tr>
<tr>
<td>B</td>
<td>B-</td>
<td>3.5</td>
</tr>
<tr>
<td>C+</td>
<td>C</td>
<td>3.0</td>
</tr>
<tr>
<td>C</td>
<td>D+</td>
<td>2.5</td>
</tr>
<tr>
<td>D</td>
<td>D</td>
<td>2.0</td>
</tr>
<tr>
<td>D</td>
<td>F</td>
<td>1.5</td>
</tr>
</tbody>
</table>

### Cumulative Average Point (CAP)

\[
\text{CAP} = \frac{\sum M_C \times GP_i}{\sum M_C}
\]

### Degree/Honours Classification: refer to RO page

- **Honours (Highest Distinction)**: CAP \( \geq 4.5 \)
- **Honours (Distinction)**: CAP \( 4.0 \) to \( 4.49 \)
- **Honours (Merit)**: CAP \( 3.5 \) to \( 3.99 \)
- **Honours**: CAP \( 3.0 \) to \( 3.49 \)
- **Pass**: CAP \( 2.0 \) to \( 2.99 \)
CAP for Continuation and Graduation

For students admitted from AY16/17 onwards:
To graduate, an undergraduate student must have a minimum CAP of 2.00.

To remain in good academic standing, and to continue in an undergraduate programme, a student may not have CAP below 2.00 for two consecutive semesters.

From third semester onwards 😞

<table>
<thead>
<tr>
<th>CAP</th>
<th>Academic Standing</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAP ≥ 2.0</td>
<td>Passed/Proceed</td>
</tr>
<tr>
<td>CAP &lt; 2.0 for current semester*</td>
<td>Academic Probation</td>
</tr>
<tr>
<td>CAP &lt; 2.0 for two consecutive semesters*</td>
<td>Dismissal</td>
</tr>
</tbody>
</table>

*excluding special term
S/ U Grading Option / Grade-free Scheme
(For AY2016/17 intake and after)

• Exercise S/U option for up to 32 MCs (or up to 20 MCs for Poly graduates) in the first two regular semesters and if not fully utilised, up to 12 MCs in subsequent semesters.
• Once an ‘S' or ‘U' grade is assigned to a module, it will count towards the 32 MCs limit that can be taken on an S/U basis.

The S/U option can be exercised on:
• All level 1000 modules (except for the English for Academic Purposes modules)
• Level 2000 modules with no other NUS modules as pre-requisites (unless otherwise stipulated by the Facs/Depts)

... 
i.e. CANNOT exercise S/U option on technical electives

You may want to consider doing ‘Undergraduate Research Opportunities Programme (UROP)’ through either CDE (EG2605) or SoC (CP3209)

CDE: EG2605 (4 MCs)
https://cde.nus.edu.sg/undergraduate/build-your-own-degree/enhancement-modules/undergraduate-research-opportunities-programme-eg2605-urop/
Eligibility: Year 1 to 3 Engineering students

SoC: CP3209 (8 MCs)
https://www.comp.nus.edu.sg/programmes/ug/project/urop/
Eligibility: A student must have passed (at least) 60 MCs, with a minimum CAP of 3.8
Student Exchange Programme (SEP) is designed for students to go to overseas partner universities and
• experience different academic environment, new country & new culture
• make new friends and stay connected.

SEP for CEG students is administered by SoC UG Office

Students who are keen in going for SEP in Year 3, should apply in Year 2. Round 1 application may start in mid/late Sept; please look out for the email blast from Ms Diana Wong.

https://ceg.nus.edu.sg/sep/
Tuition Fee beyond Normal Candidature
- Applicable for Undergraduates admitted in AY2016 & After

• Students who take longer than the normal candidature period* to complete their degree requirements will have to pay partial non-subsidized fees, culminating in full non-subsidized fees, during the extended semesters.

  *Defined as 8 consecutive semesters for BEng degrees

• MOE tuition grant only covers up to the normal candidature period.

• Refer to http://www.nus.edu.sg/registrar/administrative-policies-procedures/undergraduate/undergraduate-fees -> Tuition Fee Policy
Tuition Fee beyond Normal Candidature

Keep track of your own academic progress.

• If you fail any module(s), you should re-work your study plan/semestral workplans, e.g. take modules in the special term, so as to reduce the likelihood that you may extend beyond four years.

• Pay more attention to your academic progress and be responsible for your studies.

• Seek help and clarifications early.
Academic Dishonesty - Plagiarism

- All students share the responsibility for upholding the academic standards and reputation of the University. Academic honesty is a prerequisite condition in the pursuit and acquisition of knowledge.

- Academic dishonesty is any misrepresentation with the intent to deceive or failure to acknowledge the source or falsification of information or inaccuracy of statements or cheating at examinations/tests or inappropriate use of resources.

- There are many forms of academic dishonesty and plagiarism is one of them. Plagiarism is generally defined as ‘the practice of taking someone else’s work or ideas and passing them off as one’s own’

- The University does not condone plagiarism.

https://www.comp.nus.edu.sg/cug/plagiarism/
Each CEG student has an Academic Advisor (AA)/mentor
  • Offers academic advice & even counselling
  • Can write letters of recommendation

Try to meet your Academic Advisor regularly

You are encouraged to upload your biodata to the AA portal to allow your AA to know you better
Academic and Emotional Support

- Department
  - Peer Tutoring Scheme - Interested junior students will be paired with passionate seniors who had performed well in year 1 & 2 core modules and are keen to volunteer their time to help the juniors

  [If keen, email Dr DJ Chua elechuad@nus.edu.sg]

- Student Support Manager @
  - College of Design and Engineering - Ms Priya
  - School of Computing - Ms Adele Chiew
University Health Centre

**Emotional & Psychological Well Being**
- Anxiety, Depression
- Mental Health, Self-Worth, Shyness, Stress
- Eating Disorders
- Sudden Loss and Grief
- Feelings, Loneliness

**Relationship Issues**
- Abusive Relationships, Family Stress, Managing Conflicts, Surviving a Breakup

**Personal Effectiveness**
- Decision Making, Motivation, Test Anxiety, Time Management, Challenges of University Life

http://www.nus.edu.sg/uhc/services/mental-health/student
Q&A