<table>
<thead>
<tr>
<th>#</th>
<th>Programme</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Welcome Address by Assoc Prof BS He Chair, Joint Academic Committee (JAC)</td>
</tr>
<tr>
<td>2</td>
<td>Academic Matters by Assoc Prof Bharadwaj CEG Year 2 Coordinator</td>
</tr>
<tr>
<td>3</td>
<td>NUS Overseas Colleges (NOC) Talk</td>
</tr>
<tr>
<td></td>
<td>Start-up your Entrepreneurial Experience with NOC by Ms Gean Chu and CEG4 Dalson Tan</td>
</tr>
<tr>
<td>4</td>
<td>Refreshment (with CEG4 seniors)</td>
</tr>
</tbody>
</table>
Joint Department Briefing for CEG2

8 August 2019, 12pm @ LT3

A/Prof Bharadwaj Veeravalli elebv@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
## Full BEng(CEG) Degree Requirements
(for **AY2018/19** Direct intake)

<table>
<thead>
<tr>
<th>Programme Requirements</th>
<th>General Education Modules / University-Level Requirements</th>
<th>Unrestricted Elective Modules/Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>108 MCs</td>
<td>1 x General Education Module (GEM) from:</td>
<td>32 MCs, drawn from modules offered across NUS (including ES1000/ES1103, if not exempted)</td>
</tr>
<tr>
<td></td>
<td>• Human Cultures GEH1xxx</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Asking Questions GEQ1000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Quantitative Reasoning GER1000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Singapore Studies GES1xxx</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Thinking and Expression GET1xxx</td>
<td></td>
</tr>
<tr>
<td></td>
<td>20 MCs (5 x 4 MCs each)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total MCs = 160</td>
<td></td>
</tr>
</tbody>
</table>

Honours Degree Classification is determined by CAP
## Programme/Major Requirements

<table>
<thead>
<tr>
<th>Programme Components</th>
<th>Modules</th>
<th>MCs</th>
</tr>
</thead>
</table>
| **Faculty Requirements** | CS2101 Effective Comm for Computing Professionals  
  EG2401A Engineering Professionalism | 6   |
| **Core Modules** | CS1010 Prog Methodology  
  CS1231 Discrete Structures  
  MA1508E Lin Algebra for Engrg  
  MA1511 Engrg Calculus  
  MA1512 Diff Eqns for Engrg  
  CG2023 Signals & Systems  
  CG2027 Transister-lvl Digi Ckts  
  CG2028 Computer Organisation | 62  |
| **Projects** | CG1111 Engineering Principles and Practice I  
  CG1112 Engineering Principles and Practice II  
  CG4002 Computer Engineering Capstone Project | 20  |
| **Technical Electives** | Minimum 20 MCs; at least 12 MCs technical Depth electives (from any concentration) | 20  |
| **Total MCs for Programme Requirements** | | 108 |

**Note:** EE3204 recoded to EE4204 wef last AY18/19
General Education Modules / University-Level Requirements

20 MCs

Aims:
• Broaden students’ intellectual horizons
• Develop critical and creative thinking skills
• Promote spoken and written articulacy

Preallocated by PVO (as per your recommended schedule)
Unrestricted Elective Modules

32 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 CG4001 BEng Dissertation (12 MCs) aka FYP
  (if took CG4001, 8 MCs count as technical elective, 4 MCs as UEM)

• Minor
• Second Major
• Double Degree

Look up the details on host dept’s websites & email them/look out for eblast on application
  e.g. Second Major in Business Analytics or Minor in Business Analytics
Can also use UEM space to take 1 MC modulet(s) under Roots & Wings 2.0 that train students on soft skills.

For Sem 1, AY2019/20,
- PLS8001 Cultivating Collaboration
- PLS8002 Cultivating the Self
- PLS8003 Cultivating Resilience

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

If keen to read (e.g. in subsequent semesters), Select Module via ModReg from Round 1.
Unrestricted Elective Modules

Minor Programmes (24 MCs)
- List of Minor Programmes (more than 50 Minors offered)

Double Major / Second Major (48 MCs)
- List of Second Majors (more than 25 Second Majors offered):

- It may be possible to double-count (up to) one-third of the requirements/MCs towards both CEG and the Minor/Second Major programmes.
Advisory on Minor/Second Major

• ‘Open’ type:
  • Students can declare their intention to do an open minor via Academic Plan Declaration without any prior approval from the Host Dept
    • It is the students' responsibility to declare their minor (via EduRec), to ensure that they are registered

• ‘Restricted’ type:
  • Students are required to apply to the Host Dept and obtain approval (either via Acad Plan Declaration OR email/offline). 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.
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) and ES1103 English for Academic Purposes (4 MCs)

- 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.

- CEG Programme requirements (for AY17 intake & after) **consist of 28 MCs of level 1000 (core) modules**; See: [http://www.ceg.nus.edu.sg/admissions/curriculum.html](http://www.ceg.nus.edu.sg/admissions/curriculum.html)

Therefore:

\[
60 - 28 \text{ (CEG level1000 core)} - 20 \text{ (GE/ULR x 5)} = 12 \text{ MCs}
\]

i.e. a CEG student **can read up to 12 MCs of level 1000 modules from UEM space**.

E.g. If you have read/passed 64 MCs of level 1000 modules, please ensure your total MCs will sum to (at least) 164 MCs.
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/](https://ceg.nus.edu.sg/curriculum/electives-ay17/)
You can choose technical electives from any concentrations - **AY18**: Add up to at least 20 MCs AND at least 12 MCs Depth electives

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.
Possible Schedule for CEG AY2018/19
Direct Intake (with compulsory IA)

<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>CG1111</td>
<td>CG1112</td>
<td>CS2101</td>
<td>CG2023</td>
<td>CP3880</td>
<td>CG4002</td>
<td>CG3207</td>
<td>Technical Elective Depth</td>
</tr>
<tr>
<td>EPP1</td>
<td>EPP2</td>
<td>Effective Comm</td>
<td>Signals &amp; Systems</td>
<td>ATAP (12 MCs) OR Capstone Project (8 MCs)</td>
<td>Technical Elective Breadth (2 MCs if took ATAP)</td>
<td>OR</td>
<td></td>
</tr>
<tr>
<td>(6 MCs)</td>
<td>(6 MCs)</td>
<td>for Computing Professionals</td>
<td></td>
<td></td>
<td></td>
<td>OR</td>
<td></td>
</tr>
<tr>
<td>CS1010 Programming Methodology</td>
<td>MA1508E Linear Algebra for Engrg</td>
<td>CS2113T Software Engr &amp; OOP</td>
<td>ST2334 Probability &amp; Statistics</td>
<td>EG3611A IA (10 MCs)</td>
<td>EG240x Engrg Profsn (2 MCs)^</td>
<td>EE4204 Computer Networks</td>
<td></td>
</tr>
<tr>
<td>CS1231 Discrete Structures</td>
<td>CS2040C Data Structures &amp; Algorithms</td>
<td>[CG2027 (2 MCs) &amp; CG2028 (2MCs)] OR CG2271 RTOS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Technical Elective Breadth</td>
</tr>
<tr>
<td>MA1511 Engrg Calculus (2 MCs)</td>
<td>EE2026 Digital Design</td>
<td>GER1000 (if not read in sem 1) OR UEM2</td>
<td>GEH1xxx</td>
<td>EG240x Engrg Profsn (2 MCs)^</td>
<td>GET1xxx</td>
<td>UEM5</td>
<td>Technical Elective Breadth</td>
</tr>
<tr>
<td>MA1512 Diff Eqn for Engrg (2 MCs)</td>
<td>GEQ1000</td>
<td>GES1xxx</td>
<td>UEM2</td>
<td>UEM3^</td>
<td>UEM4</td>
<td>UEM6</td>
<td>Technical Elective Breadth</td>
</tr>
<tr>
<td>ES1103* (UEM1) OR GER1000</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 two 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 some modules in the special terms (so as not to delay graduation).

https://ceg.nus.edu.sg/students/studyschedule/
Possible Schedule for CEG AY2018/19
Common Engrg students streamed to CEG2 in AY2019/20

<table>
<thead>
<tr>
<th>Sem 1, AY18/19</th>
<th>Sem 2</th>
<th>Sem 3, AY19/20</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>EG/CG1111 EPP1 (6 MCs)</td>
<td>EG/CG1112 EPP2 (6 MCs)</td>
<td>CS1231 Discrete Structures</td>
<td>CG2023 Signals &amp; Systems</td>
<td>CG2271 Real-Time Operating Syst</td>
<td>CP3880 ATAP (12 MCs)</td>
<td>CG4002 CEG Capstone Project (8 MCs)</td>
<td>Technical Elective Depth</td>
</tr>
<tr>
<td>CS1010E Programming Methodology</td>
<td>MA1508E Linear Algebra for Engrg (2 MCs)</td>
<td>CS2040C Data Structures &amp; Algorithms</td>
<td>CG2027 Transistor-level Digital Circuits (2 MCs)</td>
<td>CG3207 OR CS3230</td>
<td>OR</td>
<td>EG3611A IA (10 MCs)</td>
<td>Technical Elective Depth</td>
</tr>
<tr>
<td>MA1505 Mathematics I (map to MA1511 and 2 MCs UEM1)</td>
<td>MA1512 Diff Eqn for Engrg (2 MCs)</td>
<td>EE2026 Digital Design</td>
<td>CG2028 Computer Organisation (2 MCs)</td>
<td>EE4204 Computer Networks</td>
<td>Technical Elective Breath (2 MCs if took ATAP)</td>
<td>Technical Elective Depth</td>
<td></td>
</tr>
<tr>
<td>GER1000</td>
<td>GEQ1000</td>
<td>ST2334 Probability &amp; Statistics</td>
<td>CS2101 Effective Comm for Computing Professionals</td>
<td>Technical Elective Breadth</td>
<td>EG2401A Engrg Profsm (2 MCs) ^</td>
<td>UEM5</td>
<td>UEM7</td>
</tr>
<tr>
<td>ES1103* OR UEM2</td>
<td>GET1xxx</td>
<td>GES1xxx</td>
<td>CS2113T Software Engrg &amp; OOP</td>
<td>GEH1xxx</td>
<td>UEM4 ^</td>
<td>UEM6</td>
<td>UEM8</td>
</tr>
<tr>
<td>UEM1 (2 MCs)</td>
<td></td>
<td>UEM3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22 MCs</td>
<td>22 MCs</td>
<td>20 MCs</td>
<td>20 MCs</td>
<td>20 MCs</td>
<td>16 or 18 MCs</td>
<td>20 or 18 MCs</td>
<td>20 MCs</td>
</tr>
</tbody>
</table>

TOTAL (MINIMUM) GRADUATION REQUIREMENTS – 160 MCs

^Students on Industrial Attachment (IA) are allowed to take up to two modules that are offered in the evenings (subject to approvals and availability). Students who prefer not to/are unable to, take evening module(s) during IA, should take some modules in the special terms (so as not to delay graduation).

https://ceg.nus.edu.sg/students/studyschedule/
Three Differentiated Pathways

Pathways have different focus in:
- Pathway Modules
- Internship
- Final Year Project

Research-focused Pathway (R/P)

Graduate Studies,
Career in R&D

Practising Professional Pathway (PPP)

Professional and Versatile
Career in Industry

Innovation & Design Programme (iDP)

Career in Design & Development,
Technopreneurship
# Three Differentiated Pathways

<table>
<thead>
<tr>
<th>Internship</th>
<th>FYP</th>
<th>Pathway requirement(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PPP</td>
<td>Technical work</td>
<td>Optional</td>
</tr>
<tr>
<td>iDP</td>
<td>Technical work</td>
<td>Refer to iDP site <a href="https://www.eng.nus.edu.sg/idp/">https://www.eng.nus.edu.sg/idp/</a></td>
</tr>
<tr>
<td>RfP</td>
<td>CG4003 Advanced Project &amp; Internship @ Research institute/lab</td>
<td>TE #1: CS5/EE5 modules TE #2: CS4/CS5/EE5 modules</td>
</tr>
</tbody>
</table>

If keen in:
- iDP (Second Major in Innovation & Design): double-count CS2101 and EG3301R
- RfP: Highly recommended to take CS2309 [CS Research Methodology](https://www.eng.nus.edu.sg/idp/) or EG2605 [Undergraduate Research Opportunities Programme](https://www.eng.nus.edu.sg/idp/), as UEM (to help in decision-making).

Refer to the [pathway mappings for CEG AY2018/19](https://www.eng.nus.edu.sg/idp/)
Some important points

- CG4002 (8 MCs) will be (first) offered in Sem 2, AY19/20. Subsequently, it will be offered in both semesters with a cap on enrolment (due to lab constraints).

- CEG students read/use CS2101 to fulfil pre-req check for EG2401A. As EG2401A is scheduled from Year 3 onwards, higher priority (to Select Module) goes to Engrg Year 3 & 4 students.

- Another briefing on IA-related matters, three pathways and technical electives will be conducted for CEG2 students (AY18 intake) in January/February 2020.
Grade Point System

Grade Point (GP)

<table>
<thead>
<tr>
<th>Grade</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>A+/A</td>
<td>5.0</td>
</tr>
<tr>
<td>A-</td>
<td>4.5</td>
</tr>
<tr>
<td>B+</td>
<td>4.0</td>
</tr>
<tr>
<td>B</td>
<td>3.5</td>
</tr>
<tr>
<td>B-</td>
<td>3.0</td>
</tr>
<tr>
<td>C+</td>
<td>2.5</td>
</tr>
<tr>
<td>C</td>
<td>2.0</td>
</tr>
<tr>
<td>D+</td>
<td>1.5</td>
</tr>
<tr>
<td>D</td>
<td>1.0</td>
</tr>
<tr>
<td>F</td>
<td>0</td>
</tr>
</tbody>
</table>

Cumulative Average Point (CAP)

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

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 AY2016/17 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 of study, 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>≥ 2.0</td>
<td>Passed/Proceed</td>
</tr>
<tr>
<td>&lt; 2.0 for current semester*</td>
<td>Academic Probation</td>
</tr>
<tr>
<td>&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 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 FoE (EG2605) or SoC (CP3208 & CP3209).

FoE: https://www.eng.nus.edu.sg/undergraduate/degree-programmes/optional-modules/urop/
Eligibility: Year 1 to 3 Engineering students

SoC: 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 will start in mid/late Sept; please look out for the email blast. SoC may conduct a briefing nearer the date.

https://ceg.nus.edu.sg/sep/
Tuition Fee Rebate
- Applicable for Undergraduates admitted in AY2014 & After

Students who complete their undergraduate degree programmes within the normal candidature period (as defined in below table), and have taken NUS modules prior to\(^{(a)}\), and/or Special Term modules during, their undergraduate candidature, are likely to have paid tuition fees in excess of the fees commensurate with the normal candidature period. Under the new fee rebate policy, such students will be eligible for a rebate on the excess tuition fees paid.

<table>
<thead>
<tr>
<th>Degree Type</th>
<th>Normal Candidature Period(^{(b)})</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single Degree/Joint Degree Programme (120 MCs)</td>
<td>6 consecutive semesters</td>
</tr>
<tr>
<td>Single Degree/ Joint Degree Programme (160 MCs)</td>
<td>8 consecutive semesters</td>
</tr>
<tr>
<td>Concurrent Degree Programme (CDP) / Double Degree Programme (DDP)</td>
<td>9 consecutive semesters</td>
</tr>
</tbody>
</table>

\(^{(a)}\) Examples of NUS modules taken prior to the undergraduate candidature are: NUS iBLOC; NUS H3 subjects; NUS modules taken as NUS High School students; and NUS modules taken under the Polytechnic Advanced Placement Programmes.

\(^{(b)}\) The normal candidature period is defined here to include all approved Leave of Absence (LOA) periods, except those given for medical reasons.

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/education-at-nus/undergraduate-education/fees.html#TuitionFeebeyondNormalCandidature
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/
Academic Advisors

- Each CEG student has an Academic Advisor (AA)/mentor
  [Common Engrg students will be allocated by end-Aug]
  - 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 @
  - Faculty of Engineering - Mr Martin Nonis
  - 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