Undergraduate Programmes
AY 2024–2025

Associate Professor KAN Min-Yen (“Min”)
Undergraduate Division
About this Course Briefing

This course briefing is meant for students pursuing the Bachelor of Computing and Bachelor of Science in Business Analytics degrees.

- Course briefing for Bachelor of Engineering in Computer Engineering will be delivered by the CEG Joint Academic Committee from both the College of Design and Engineering and School of Computing.

- This course briefing touches on general information relevant to studying in the School of Computing.

- It will not cover detailed information about the CEG programme.
  - Please attend the Programme Briefing conducted by CEG on Fri, 19 Jul 2023 2:00–6:00 pm, Blk EA Level 1, Engineering Auditorium to find out more.
<table>
<thead>
<tr>
<th>Undergraduate Programmes</th>
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</tr>
</thead>
<tbody>
<tr>
<td>B.Comp. (Honours) in Information Security</td>
<td>InfoSec</td>
</tr>
<tr>
<td>B.Comp. (Honours) in Computer Science</td>
<td>CS</td>
</tr>
<tr>
<td>B.Comp. (Honours) in Information Systems</td>
<td>IS</td>
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<tr>
<td>B.Eng. (Honours) in Computer Engineering</td>
<td>CEG</td>
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<tr>
<td>B.Sc. (Honours) in Business Analytics</td>
<td>BZA</td>
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</table>
Co-Operative Programme

Information Security Co-operative Programme

More details will be shared at the Programme Briefing via Zoom webinar sessions conducted by the CS Department on Fri, 12 Jul 2024 2:30 pm.

Please apply with SoC UG Office (to Diana Wong <comwpd@nus.edu.sg>) by Tue, 16 Jul 2024 5:00 pm using the prescribed application form as such students are required to follow the recommended study schedule throughout their candidature.
Scavenger Hunt

See whether you can find points in these slides that address these essential qualities of your NUS degree.

- 1. Ensures your degree represents education done at NUS.
- 2. Figure out who has priority for securing a spot in a popular course.
- 3. Ensures that academic dishonesty is taken seriously.
- 4. Allows you to experiment with new subjects without risk to your grades.
- 5. Certifies depth of understanding in your programme.
- 6. Have a solid foundation of world knowledge.
- 7. How many forms of industry experience can you get at SoC?
- 8. How many forms of research experience can you get at SoC?
- 9. Who can I turn to for help in academic, life, and career matters at SoC?
Outline

> Courses and Grades
  • Finding Course Information
  • Modes of Course Taking
  • Grade Point Average (GPA) with Examples

  o Curriculum Structure and Degree Options
  o Course Registration
  o Enrichment and Activities
  o Challenges and Advice
  o Useful Information
Searching for Course Information

Use NUS Mods!
https://nusmods.com/

- Course Information
- Class and Exam Timetables
- Planning for your classes
CS2109S
Introduction to AI and Machine Learning
Computer Science • Computing • 4 Units
Semester 1 • Semester 2

This course introduces basic concepts in Artificial Intelligence (AI) and Machine Learning (ML). It adopts the perspective that planning, games, and learning are related types of search problems, and examines the underlying issues, challenges and techniques. Planning/games related topics include tree/graph search, A* search, local search, and adversarial search (e.g., games). Learning related topics include supervised and unsupervised learning, model validation, and neural networks.

Prerequisite
If undertaking an Undergraduate Degree THEN (must have completed 1 of CS2040/CS2040C/CS2040S/YSC2229 at a grade of at least D AND must have completed 1 of CS1231/CS1231S/MA1100/MA1100T at a grade of at least D AND (must have completed all of MA1511/MA1512 at a grade of at least D OR must have completed 1 of MA1102R/MA1312/MA1505/MA1507/MA1521/MA2002 at a grade of at least D))

Preclusion
If undertaking an Undergraduate Degree THEN (must not have completed 1 of CS3243/CS3244/DMX1401A/IT3011 at a grade of at least D)

Additional Information
✓ Included in Semester 1's Course Planning Exercise
✓ Included in Semester 2's Course Planning Exercise

Workload - 10 hrs

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<th>Tut</th>
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**Timetable**

**Semester 1**

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Modes of Course Taking

1. Taking with Letter Grade
2. Taking CS/CU Courses
3. Taking the S/U Option
1. Taking with Letter Grade

Obtain a letter grade at the end of the course:

A+, A, A–, B+, B, B–, C+, C, D+, D, F*

* Included in the calculation of your performance

<table>
<thead>
<tr>
<th>Grade</th>
<th>Grade Point</th>
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<tbody>
<tr>
<td>A+</td>
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<tr>
<td>A</td>
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<tr>
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<td>B+</td>
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<td>B</td>
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<td>C</td>
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<tr>
<td>D+</td>
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<tr>
<td>D</td>
<td>1.00</td>
</tr>
<tr>
<td>F</td>
<td>0.00</td>
</tr>
</tbody>
</table>
2. Taking CS/CU Courses

Obtain either Completed Satisfactorily (CS) or Completed Unsatisfactorily (CU)

Not an option with the student

Does not affect Grade Point Average (GPA)
3. Taking the S/U Option

Grade free scheme to encourage students to try courses outside their fields of study

Link: https://myportal.nus.edu.sg/studentportal/academics/ug/su-homepage.html

- Obtain either a Satisfactory (S) or an Unsatisfactory (U) record
- Not included in the calculation of your GPA performance
- Need at least a D grade to convert to S grade to obtain units

- Three-day window to decide on S/U after release of results
- Can exercise S/U option on eligible course read with grades received in the same Academic Year
- Irrevocable. Any S/U option exercised in previous semesters cannot be amended or withdrawn once the S/U declaration exercise has concluded.
Enhanced Grade-Free Scheme

- **S/U Option is limited to:**
  - Level 1000 courses, and
  - Level 2000 courses without NUS courses as pre-requisites
  - Level 2000 Communication and Ideas & Exposition courses offered by CELC and UTown
  - Language courses at all levels offered by Centre for Language Studies, FASS and Yale-NUS College

- **Cannot exercise this option on courses:**
  - Dropped with a F grade during the semester;
  - In which a student has been found to plagiarise;
  - In which a revised grade had been prescribed by the Board of Discipline.
Enhanced Grade-Free Scheme (2)

Up to 32 units in the first academic year of studies (first 2 regular semesters and two Special Terms).

If not fully utilised, the remaining S/U can be used in subsequent semesters, for up to 12 units.

Variations on the S/U limit may apply for specific groups of students, such as:

i. Students without prior university experience but are granted 20 or more Advanced Placement Credits (APCs) at the point of admission to NUS may choose to S/U for up to 20 units in the first two regular semesters and two special terms; if this is not fully utilised, the remaining S/U options may still be exercised in subsequent semesters, for up to max of 12 units. Students can cancel polytechnic exemptions on unrestricted electives to get additional S/U units. Office of the University Registrar will inform eligible students at the appropriate time.

ii. Students with some prior university experience (which are recognised towards the NUS degree) may exercise S/U for up to 12 units anytime during their candidature, including the first two regular semesters.

iii. Students with a prior university degree are not eligible for the grade-free scheme.
Grade, Grade Points & S/U

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<tr>
<th>Grade</th>
<th>Grade Point</th>
<th>S/U Option</th>
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<td>A–</td>
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<tr>
<td>B+</td>
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<tr>
<td>B–</td>
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<td>Satisfactory (S)</td>
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<tr>
<td>C</td>
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<td>D+</td>
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<tr>
<td>D</td>
<td>1.00</td>
<td>Unsatisfactory (U)</td>
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<td>F</td>
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Note: A candidate who has obtained a D or higher grade cannot repeat the course.
Grade Point Average (GPA)

\[
\text{GPA} = \frac{\sum \{ \text{course grade point} \times \text{units} \}}{\sum \{ \text{units} \}}
\]

rounded up to 2 decimal places.

To graduate, a student \textbf{must} obtain a GPA of at least 2.00.
## GPA and SGPA calculations

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Grade</th>
<th>Units</th>
<th>Grade Point</th>
<th>Points</th>
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<td>Programming Methodology</td>
<td>A</td>
<td>4</td>
<td>5</td>
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<tr>
<td>CS1231S</td>
<td>Discrete Structures</td>
<td>B–</td>
<td>4</td>
<td>3</td>
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<tr>
<td>ES1103</td>
<td>English for Academic Purposes</td>
<td>B–</td>
<td>4</td>
<td>3</td>
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<tr>
<td>MA1521</td>
<td>Calculus for Computing</td>
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<td>4</td>
<td>3.5</td>
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<td>IS2101</td>
<td>Business &amp; Technical Communication</td>
<td>D+</td>
<td>4</td>
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<td>GER1000</td>
<td>Quantitative Reasoning</td>
<td>S</td>
<td>4</td>
<td>N/A</td>
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</table>

[S]GPA ([Semester] Grade Point Average) = 64/20 = 3.20

If this is the student’s 2nd semester, and she achieved a 4.00 GPA last semester with 24 units (4 units S/U’ed), then:

GPA (Grade Point Average) = \(\frac{(3.20 \times 20) + (4.00 \times 20)}{40}\) = 3.60
## Continuation Requirement

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
<th>Third Semester Onwards</th>
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</table>
| All students progress          | Advisory for students found to be performing poorly despite the grade-free scheme | **Probation**, if GPA $< 2.00$ for current semester;  
**Dismissal**, if GPA $< 2.00$ for two consecutive semesters |

Student receiving **academic probation** must receive counselling from academic advisors.

Restore your good standing before reaching the state of dismissal by bringing your GPA above 2.00 in the following semester.
Candidature Limits

Normal Candidature for our undergraduate programmes:
- 4 Years

Maximum Candidature for 4-year Programmes:
- 5 Years

Maximum Candidature for Double-Degree Programmes:
- 6 Years
<table>
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<th>Honours Classification</th>
<th>GPA (to 2 decimal places)</th>
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<td>Honours (Highest Distinction)</td>
<td>4.50 – 5.00</td>
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<td>Honours (Distinction)</td>
<td>4.00 – 4.49</td>
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<tr>
<td>Honours (Merit)</td>
<td>3.50 – 3.99</td>
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<td>3.00 – 3.49</td>
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<tr>
<td>Pass</td>
<td>2.00 – 2.99</td>
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<tr>
<td>Fail</td>
<td>Below 2.00</td>
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Lectures, Assessments and Examinations

- Lecture recordings (asynchronous) or Zoom lectures (synchronous) may be used along with reading materials, answer sketches, etc.

- 100% CA for some courses.
Academic Integrity & Student Discipline

A breach of any of the NUS Code of Student Conduct or the assessment rules will render a student liable to disciplinary action which may result in suspension or expulsion from the University.

- NUS Statute 6 and Regulation 10 can be accessed at: https://www.nus.edu.sg/registrar/administrative-policies-procedures/undergraduate/nus-statutes-and-regulations

- Preventing Plagiarism https://www.comp.nus.edu.sg/cug/plagiarism/

Example 1: SoCCat

SocCat is into his final semester. His GPA is 3.35, and his total number of units accumulated is 142. He intends to take 20 units of courses in this semester.

What should be his average grade for the final semester in order to get a GPA of \(3.50\)?

(Assuming no S/U options)

\[
\frac{(142 \times 3.35) + 20 \times G}{162} \geq 3.50
\]

\[
G \geq \frac{(162 \times 3.50 - 142 \times 3.35)}{20} = 4.57
\]

Examples:
- 4 A– (4.5) and 1 A (5.0) \(\rightarrow G = 23/5 = 4.6\)
- 2 B+ (4.0), and 3 A (5.0) \(\rightarrow G = 23/5 = 4.6\)
- 1 B (3.5), 1 B+ (4.0), and ... No Way!!.

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SocCat is into his final semester. His GPA is 3.35, and his total number of units accumulated is 142. He intends to take 20 units of courses in this semester.

What should be his average grade for the final semester in order to get a GPA of 3.50? (Assuming no S/U options)

\[
\frac{(142 \times 3.35 + 20 \times G)}{162} \geq 3.50
\]

\[
G \geq \frac{(162 \times 3.50 - 142 \times 3.35)}{20} = 4.57
\]

Examples:
- 4 A– (4.5) and 1 A (5.0) \( \rightarrow \) \( G = 23/5 = 4.6 \)
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Example 2: LiNUS

LiNUS’s GPA is 1.49, and his total units accumulated is 40. He intends to take 20 units of courses in the coming semester to achieve a GPA of at least 2.00.

What should be his average grade for the coming semester in order to achieve that? (Assuming no S/U options)

\[
\geq \frac{(60 \times 2.0) - (40 \times 1.49)}{20} = 3.02
\]

Examples:
- 4 B– (3.0) and 1 B (3.5) \(\rightarrow 15.5/5 \text{ courses} = 3.1\)
- 2 C+ (2.5), 1 B– (3.0), 1 B (3.5), 1 B+ (4.0) \(\rightarrow 15.5/5 = 3.1\)

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<td>D+</td>
<td>1.50</td>
</tr>
<tr>
<td>D</td>
<td>1.00</td>
</tr>
<tr>
<td>F</td>
<td>0.00</td>
</tr>
</tbody>
</table>
Example 2: LiNUS

LiNUS’s GPA is 1.49, and his total units accumulated is 40. He intends to take 20 units of courses in the coming semester to achieve a GPA of at least 2.00.

What should be his average grade for the coming semester in order to achieve that? (Assuming no S/U options)

\[
\geq \frac{(60 \times 2.0) - (40 \times 1.49)}{20} = 3.02
\]

Examples:
- 4 B– (3.0) and 1 B (3.5) \(\rightarrow\) 15.5/5 courses = 3.1
- 2 C+ (2.5), 1 B– (3.0), 1 B (3.5), 1 B+ (4.0) \(\rightarrow\) 15.5/5 = 3.1
Outline

- Courses and Grades

  > Curriculum Structure and Degree Options
    - Single Degree Structure and Requirements
    - Degrees, Majors, Minors and Specialisations
    - Waivers
    - Industrial Experience

- Course Registration

- Enrichment and Activities

- Challenges and Advice

- Useful Information
Degree Structure: Flexibility in Simplicity

A strong foundation that builds on University Pillars with a digital core.

Your choice between advanced modules and deeper industrial experiences.

Your freedom to choose Unrestricted Electives that customize your degree your way.

Programme Requirements (80 units)

Unrestricted Electives (40 units)

Common Curriculum (40 units)

Single Degree 160 units
Must achieve GPA of 2.00
Degree Requirements

1. Fulfill all three sets of course requirements:
   • University Level Requirements, Programme Requirements, and Unrestricted Electives

2. GPA must be at least 2.00

3. No more than 60 units at Level 1000

4. Residency Requirement: must complete 50% of the required units for the degree physically at NUS:
   • These units must be earned from NUS courses with assigned grades, or those with an ‘S’ or ‘CS’ grade.
For Polytechnic Graduates

NUS recognises the prior experience of polytechnic graduates in the form of **Advanced Placement Credits**

- 20 units from Unrestricted Electives
  - These are not included in the 60-unit limit for Level 1000 courses

- Up to 20 units from Programme Requirements

More details here: [https://soc-n.us/2410-poly-exempt](https://soc-n.us/2410-poly-exempt)
University Level Requirements (ULR: 24 units)
- One course for each General Education (GE) Pillar
- Certain GE pillar courses are specific to each programme

Common Curriculum (16 units)
2. Interdisciplinary (ID) / Cross-Disciplinary (CD) Education (12 units)
   ✓ At least two ID courses and
   ✓ No more than one CD course to satisfy the 12 units required.
Programme Requirements

~80 units

Programme Essentials
  • Essentials specific to the programme

Programme Electives
  • If you fail an elective, you may retake it, or read another elective

Unrestricted Electives (UE)

~40 units

  • Courses from SoC or other faculties that make up the remainder of the total unit requirement
General Education / ULR

In depth...

6 General Education pillars (24 units)

Courses that lay the foundation for important life skills

Students are strongly encouraged to complete the GE courses within the first 2 years of their candidature.
<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Cultures &amp; Connections</td>
<td>(prefix GEC)</td>
</tr>
<tr>
<td>2. Critique &amp; Expression</td>
<td>(fulfilled by ES2660 for CS students whose home faculty is SoC)</td>
</tr>
<tr>
<td>3. Digital Literacy</td>
<td>(fulfilled by CS1010*/CS1101S Programming Methodology for students whose home faculty is SoC)</td>
</tr>
<tr>
<td>4. Data Literacy</td>
<td>(fulfilled by BT1101 Introduction to Business Analytics for IS and BZA students whose home faculty is SoC)</td>
</tr>
<tr>
<td>5. Singapore Studies</td>
<td>(prefix GESS)</td>
</tr>
<tr>
<td>6. Communities &amp; Engagement</td>
<td>(prefix GEN)</td>
</tr>
</tbody>
</table>

**UTown Programme, RVRC and NUSC students** follow the curriculum requirements specified by their respective colleges.

More details here: https://soc-n.us/2410-ge-ulr-req
Programme and Major Requirements

Programme Essentials / Compulsory GE courses
- Must pass all with letter grades (unless with permitted S/U option)
- Include at least 2–3 programming courses and prescribed non-GE coded courses, depending on programme
  - CS1010/CS1010J/CS1010A/CS1101S Programming Methodology (prescribed to satisfy Digital Literacy Pillar)
  - CS2030 Programming Methodology II and CS2040 Data Structures and Algorithms (for IS and BZA), CS2030S/CS2040S (for CS)
  - CS2040C Data Structures and Algorithms (for InfoSec)
  - BT1101 Introduction to Business Analytics (for IS and BZA and prescribed to satisfy Data Literacy Pillar)

Programme Electives
- Each programme has its own list of elective courses
  - Allows you to choose modules from a basket
Recap and Summary

Programme Requirements (80 units)

Unrestricted Electives (40 units)

Common Curriculum (40 units)

Broken down into:

- Programme Essentials
  - Industry Experience
  - Some Poly APCs also credit here
- Programme Electives

Single Degree: 160 units
CDP, DDP often will require more units.

- 2nd Major, Minor may take up your Unrestricted Electives (UE)
- Advanced Placement Credits for Polytechnic students give up to 20 units under UEs

Some Poly APCs also credit here

- IS1108 Ethics / CD / ID
- University Level Requirements (i.e. GE)
Get your money and time’s worth

Accomplishable with double (not triple) counting:

- Up to 8 units of GE requirements may be double counted with a Major requirement.
- GEs may also be double counted with 2nd Major, Minor and Specialisation requirements
  - subject to specific 2nd Major, Minor and Specialisation rules
Double Degrees (DDP) and Concurrent Degrees (CDP)

- CS/IS with Business Admin/Accountancy
- CS with Mathematics (under CHS)
- Self designed DDP with another NUS Faculty
- French Grandes Écoles (FDDP)
- IS with Masters in Engineering and Tech Innovation Management in CMU
- CS/IS with Masters in Management with NUS Business School
- IS/BZA with Economics (under CHS)
- BZA with Business Administration

Photo by Mart LMJ @ Pexels
Photo by Lennon CC-BY-SA-3
Double Major Programmes

- Double major in Management
- Double major in Statistics

Also from many other faculties

Minor Programmes offered by other faculties

- Math, Statistics, Economics, Management, ...
2nd Major (40 units)

Up to 16 units may be used to meet the requirements for both (i) the Second Major and (ii) another Major or Minor

Only Double Counting is allowed.

- **Triple counting** of a course that is common to, for example, a Major, Second Major and Minor that are all being taken by a student, is **not allowed**.

  The student will have to read an additional course/s to fulfill the unit requirement for one of the three programmes.

At least 12 units must be at Level 3000.

Of which, at least 60% must be courses read at NUS include all courses taught, co-taught, supervised or co-supervised by NUS faculty members.

- These consist of graded courses or courses with an S or CS grade.
- The remaining units may be earned through credit transfers, advanced placement and exemptions, from courses deemed relevant to the particular 2nd Major.
Minor (20 units)

Up to 8 units (40% of the total requirements for Minor) may be used to meet the requirements for both the Minor and a Major/Second Major, or another Minor.

At least 12 units for any Minor programme must be taken from outside the entire set of courses that are listed for the major(s)/another minor that the student is taking.

A minimum of 60% of the total units of the Minor requirements must be earned from courses read in NUS taught, co-taught, supervised or co-supervised by NUS faculty members.

- These consist of graded courses or courses with an $S$ or $CS$ grade.
- The remaining units may be earned through credit transfers, advanced placement and exemptions, from courses deemed relevant to the particular Second Major or Minor.
Workload and Waivers

**Minimum** workload every semester: 18 units
- Underloading request are not granted in earlier stage of study unless supported by medical grounds/extenuating circumstances
- Appeal for min workload waiver via CourseReg is **disabled** for our own undergraduates.
- Instead, submit waivers for the last 3 semesters leading to graduation with a study plan via [SoC Student Workload System](#) for review

**Maximum** permissible workload for 1st semester of study in NUS (no waiver allowed)
- 23 units (for single degree students with/without minor/second major)
- 27 units (for students who are enrolled in NUSC, DDP or CDP)

SoC **does not** support Class and Exam Timetable Waivers
Plan early for the compulsory internship programmes to avoid delay of graduation

- Do it in Year 3 of your studies
- No internship allowed in your final graduating semester

Completed the programme in the 8th semester or earlier, but want to do either an additional regular semester or Special Term to pull up your GPA?

- Possible with permission from UG Office
- Still must take at least 18 units
- Must take only Level 3000 or above courses
Outline

- Courses and Grades
- Curriculum Structure and Degree Options

> Course Registration

- Enrichment and Activities
- Challenges and Advice
- Useful Information
How to get the courses you want

Course Registration via EduRec

employs a rules-driven priority-based engine to allocate course to students based on 1. Curricular needs; 2. Seniority in the programme; and 3. Course preferences

https://www.nus.edu.sg/coursereg

Priority Score of course(s)

\[ A_c \times B_c \times C_c \]

Navigation

myEduRec > Academics > Course Registration

User Guide

https://www.nus.edu.sg/coursereg/docs/CourseReg-Student-User-Guide.pdf
Priority Scoring – $A_c \times B_c \times C_c$

<table>
<thead>
<tr>
<th>Programme Requirements Category (in descending order of points) – $A_c$</th>
</tr>
</thead>
<tbody>
<tr>
<td>UTown / USP courses</td>
</tr>
<tr>
<td>Major core and Major Specialisation courses</td>
</tr>
<tr>
<td>Major courses</td>
</tr>
<tr>
<td>Second Major Specialisation courses</td>
</tr>
<tr>
<td>Faculty Requirement courses</td>
</tr>
<tr>
<td>Second Major courses</td>
</tr>
<tr>
<td>Restricted / Direct Minor courses</td>
</tr>
<tr>
<td>Unrestricted Elective / General Education courses</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Students' Seniority (in descending order of points) – $B_c$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year 4 / GLB Year 3 / Graduating Year 3</td>
</tr>
<tr>
<td>Year 3</td>
</tr>
<tr>
<td>Year 2 / E-Scholars Programme</td>
</tr>
<tr>
<td>Year 1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Rank Preference of Courses (in descending order in descending order of points) – $C_c$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rank 1</td>
</tr>
<tr>
<td>Rank 2</td>
</tr>
<tr>
<td>Rank 3</td>
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<tr>
<td>Rank 4</td>
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<tr>
<td>Rank 5</td>
</tr>
<tr>
<td>Rank 6</td>
</tr>
<tr>
<td>Rank 7</td>
</tr>
<tr>
<td>Rank 8</td>
</tr>
</tbody>
</table>
Tie Breakers

(in descending order of consideration)

1. Students who have not attained minimum workload

2. Student’s home faculty is course host faculty

3. Course feedback points

4. Random balloting
Can I drop a course after securing it?

<table>
<thead>
<tr>
<th>Activity</th>
<th>Deadline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Add new courses</td>
<td>By end of Week 1</td>
</tr>
<tr>
<td>Drop courses without grade penalty</td>
<td>By end of Week 2</td>
</tr>
<tr>
<td>Drop courses with “W” grade</td>
<td>Week 3, Day 1 to last day of Recess Week</td>
</tr>
<tr>
<td>Drop courses with “F” grade</td>
<td>Week 7, Day 1 onwards</td>
</tr>
</tbody>
</table>

**Important:** You need to meet the minimum workload of 18 units per semester
Outline

- Courses and Grades
- Curriculum Structure and Degree Options
- Course Registration

> Enrichment and Activities
  - Internships

- Challenges and Advice
- Useful Information
More than courses...

University education is more than just attending classes

- Develop a network of life-long friends
- Explore and find out what you are passionate about
What do Employers Look For?

How about Google?
Activities and Enrichment

- Student clubs and activities
- Student Exchange Programme (SEP)
- Design-Your-Own-Course (DYOC)
- Open source and volunteer work
- Leadership programme
- Internships for work experience
- Entrepreneurship programme
- Research experience
- Competitions
- Teaching experience
Student Clubs and Interest Groups

NUS Computing Club
nuscomputing.com

... and many others
Overseas Experiences

- University of British Columbia
- University of California
- University of Melbourne
- University of Illinois, Urbana-Champaign
- Technische Universitat Wien
- University of Copenhagen
- Tsinghua University
- Ecole Superieure D' Electricite
- University of Stuttgart
- Tokyo Institute of Technology
- Korea Advanced Institute of Science & Technology
- University of Stockholm
- King's College London
  ... and many more!
Every SoC student should have the confidence to
• propose their own project
• learn what is necessary to do the project
• deliver what was promised

For 1st year students
• Over the long vacation (May—July 2024)
• Work in pairs
• Basic project – web app in Python
  ✓ Option to propose more advanced project
• 4 units independent work
  (graded as CS/CU under CP2106)
CP2107 Odyssey

Independent Introduction to CS Research

Learn and Deliver
• Introduce to various research areas
• Formulate research questions, reviewing the literature, and carry out part of the research project
• Derive tangible outcome such as a research proposal, prototype, or preliminary study.

For 1st year students
• Over the long vacation (May—July 2025)
• 4 units independent work (graded as CS/CU basis under CP2107)

Subsequent courses: CS2309, CP3209 (under ReX), CP4101

Join the CS Turing Programme
Internships

Advanced Technology Attachment Programme (ATAP)

Industry Internship Programme (IIP)
- 6-month course credit

Student Internship Programme (SIP)
- 3-month course credit

Students also go on overseas internships with leading global companies
Internships

Advanced Technology Attachment Programme (ATAP)

Industry Internship Programme (IIP)
  - 6-month course credit

Student Internship Programme (SIP)
  - 3-month course credit

Students also go on overseas internships with leading global companies ...

Project Intern

How you too, can land an internship with Google, Microsoft, Facebook and the like.
http://ymichael.github.io/projectintern

Project Intern is about getting more SoC students summer internships with tech companies. We hope to consolidate all the information regarding getting an overseas summer internship. With a focus on:

- NUS SoC students
- Internships with tech companies in the US.

We don’t mean to say that there are no interesting internships outside the US - in the past, SoC students have, in fact, interned at companies in Sweden, Canada, Japan and the UK. But the truth is that the biggest and most interesting tech companies are based in the US.

Every summer, talent pours into the Valley, with interns taking up apartments and hotels and train stations, filling up backyards and picnic fields and event halls. (These things happen at other technology centers in the US, of course. But SF is where it’s at).

This means you’ll get to meet some incredibly talented people. It means that you’re probably going to have a lot of fun doing it. And it also means - given that you’ll be spending 3 months in such an environment - that you’ll learn a lot.
Open Source and Volunteer Work

Build systems for volunteer organisations and gain course credits in CP3107 or CP3110

CP3107 Computing for Voluntary Welfare Organisations (6 units)

CP3110 Computing for Voluntary Welfare Organisations II (6 units)

Computing for Voluntary Welfare Organisations can be mapped to 3-month internship (SIP).
Entrepreneurship

NUS Overseas College (NOC)

Full one year, 6- or 3-month in a start-up with NUS Overseas College. Meets compulsory internship requirement.

Enough mapping for most students to complete degree in 4 years

Courses on Digital Entrepreneurship

- CP2201 Journey of the Innovators
- IS3251 Principles of Technology Entrepreneurship

Venture Initiation Programme (VIP@SoC)

Up to $10,000 to develop an idea

The Furnace

The Incubation Center at SoC
Undergraduate Research

Invent, Create and Discover…

- CP3208 Undergraduate Research Opportunity Programme
- CP4101 Final Year Project

Sand Canvas by Chris Chua
Sand Animation...
What do Employers Look For?

How about KPMG Consulting?
Outline

- Courses and Grades
- Curriculum Structure and Degree Options
- Course Registration
- Enrichment and Activities

> Challenges and Advice

- Useful Information
Academic Advising

Questions you may have:

- Should I do a DDP, FDDP, CDP, SEP, specialisation, minor, second major, etc.?
- I want to be an entrepreneur. How do I go about it?
- What courses should I do to help prepare for a career as a software engineer, consultant, etc.?
- I am interested in research. How do I go about getting research experience?
- Should I do a Ph.D.?
- I am struggling academically. How should I study? What courses should I select next semester?

Talk to an academic advisor, especially when you are struggling with your studies!
https://www.comp.nus.edu.sg/cug/advisors/
Academic Support

You can talk to an academic advisor any time you need academic advice.

Perhaps you want to have a closer mentorship relationship with:

• Someone who has started a company and can advise you about entrepreneurship?
• Someone who teaches or does research in a particular area so that you can get advice about the area?
• Someone who interacts actively with mentees in his or her research group using social media?
• Senior students who can also act as peer mentors?
Advice for Passing a Course

Perform consistently in Continual Assessment (CA) and Examinations!

CA can take many forms, including:
- Assignments
- Tutorial Attendance
- Mid-term Tests / Quizzes

If you miss your examination due to a valid reason, make sure you apply for Special Consideration, and submit the form online via EduRec by the specified deadline given by the Office of the University Registrar in each semester/special term.
  - E.g., for medical reasons, get your doctor to fill the form out.

Login to EduRec and navigate to
My Homepage > Academics > Examinations > Access Special Consideration > Make Submission for Current Semester.
Academic Problems

Every year, around 5% of freshmen face academic problems:

- GPA below 2.00 (C average)
- Must see an academic advisor

You don’t want to be one of them if you can avoid it (but we can help if you end up here...)

- What got them into academic difficulties?
Problems and Solutions...

No real difficulties, I just didn't study. I was lazy and just wanted to enjoy university life.

✓ I started studying and taking interest in programming.

The first time I did it, I didn't do any work at all. I didn't attend lectures, tutorials recitation nothing of sorts... the prime reason for coming down in the particular course was rather a complete negligence on my part... Especially when I had come directly after A levels this sudden influx was a bit hard to grasp, in spite of being warned that uni would be like this. =)

✓ Stuck to the basics, attend lectures, tutorials and recitations more than I did the first time. Started the labs earlier.
Problems and Solutions...2

I had difficulty understanding programming as a whole since I had no background in computing when I first took CS1101S. Therefore, learning JavaScript Programming is almost the same as learning a new language.

Secondly, I didn't really know how to apply basic algorithms to solve problems (labs).

- I attempted all tutorial questions and clarified my doubts during tutorials.
- I exchanged ideas on how to solve problems and weigh their complexity or efficiency with my tutorial mates.
- Increase my self-confidence, really.
Problems and Solutions...3

Complacency and adaptability. CS1010S is a module that I took in the first semester. Besides adapting to a brand-new school, I also need to juggle between the new social life and a completely different (from JC) way to study a module. I think the main problem is not sure how to go about studying this course, no computing background, unsure how to go about asking question and that the nature of the course has a very huge snowballing effect once you lag at the very beginning of the course.

✓ Practice, be consistent and keep asking questions (both to yourself and the lecturer), keep the programs that you practise, realise your mistakes, remember them and keep going on.
Advice for Grade-Free Courses

The purpose of the Grade-Free Scheme is to reduce stress of your transition to university and to let your experiment.

However, many do not utilise this opportunity appropriately. **Grade-Free does not mean effort-free.**

Observed issues:
- Take too many and difficult courses
- Too relaxed at mid-semester, then too late to catch up

Learn your basics well – you will continue to need it!
- Upper-level courses assume mastery of foundations (like programming and problem solving)
If you worry you might struggle...

1. **Don’t overload yourself.** Generally, doing more than five courses a semester is not a good idea for struggling students.

2. **Work consistently through the semester**, rather than cramming at the end. Try to do all the tutorial exercises.

3. **Work in groups.** Students who study in a group tend to do better.

4. Beyond compulsory courses, pick courses that **suit your strengths**.

5. **Research** the courses before signing up for them.

You can drop a course with a **W** grade before the end of the recess week if you think that you cannot cope. Remember, the minimum workload of **18** units per semester must be maintained.
Outline

- Courses and Grades
- Curriculum Structure and Degree Options
- Course Registration
- Enrichment and Activities
- Challenges and Advice
- Useful Information
Useful Information

NUS Bulletin
https://www.nus.edu.sg/nusbulletin/ay202425/general-information

SoC Undergraduate Page
http://www.comp.nus.edu.sg/cug

You will be informed on how to participate in **ATAP**, **SIP**, and **NOC** at the appropriate juncture.

• In addition, ad hoc job postings can be found at https://nusu.sharepoint.com/sites/soc/Lists/Jobs/AllItems.aspx (you may want to subscribe to the list).
• Similarly, you may want to subscribe to industry related announcements at: https://nusu.sharepoint.com/sites/soc/Lists/Industry_related_announcements/AllItems.aspx

has all the information about rules and regulations governing your degree.

has information relevant to SoC undergraduates. Please choose the requirement for your own cohort.
Useful Information 2

- **CourseReg:** http://www.nus.edu.sg/CourseReg

- **NUSMods:** http://nusmods.com, Search and view the module and timetable information from. Info on prerequisites and preclusions of courses, whether they have S/U option, are lab-based, independent-study modules or SkillsFuture funded.

- **Course Briefing Slides to be deposited:** http://www.comp.nus.edu.sg/freshmen

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**Computer Accounts**

- **NUSNET account**
  - Given out during registration
  - Email address: exxxx@u.nus.edu

- **SoC UNIX account**
  - Email address: socrocks@comp.nus.edu.sg

**Enquiries:** socug@comp.nus.edu.sg
SoC Office of Undergraduate Studies

Vice Dean: Assoc Prof KAN Min-Yen
Assistant Deans: Assoc Prof CHAN Chee Yong, Dr Ravi SUPPIAH, Assoc Prof Aaron TAN, Dr WANG Qiuhong, Dr ZHAO Jin

Deputy Director: Ms TOH Mui Kiat
Senior Associate Director: Ms Pamela LIM
Assistant Senior Managers: Mr LOW Mun Bak & Ms Diana WONG, Ms Sharnie LEE Xin, Mr LEE Zheng Yi & Ms MAH Su Zhi, Ms Sharon CHAN & Alexandria CHAN, Mr Phillips LOH & Ms Ivy NG, Ms Sharifah Noor Ain BTE AHMAD ALHABSHI, Ms Jenny TAY & Jesline TEO

Manager: Ms Sharnie LEE Xin
Assistant Managers: Mr LEE Zheng Yi & Ms MAH Su Zhi, Ms Sharon CHAN & Alexandria CHAN, Mr Phillips LOH & Ms Ivy NG, Ms Sharifah Noor Ain BTE AHMAD ALHABSHI, Ms Jenny TAY & Jesline TEO

Senior Executives: Ms Sharon CHAN & Alexandria CHAN, Mr Phillips LOH & Ms Ivy NG, Ms Sharifah Noor Ain BTE AHMAD ALHABSHI, Ms Jenny TAY & Jesline TEO

The SoC Office of Undergraduate Studies is located at: COM1 #02-19
Email: SoCUG@comp.nus.edu.sg
Please do not send the same email to multiple staff members!
SoC Office of Industry Relations

Vice Dean: Assoc Prof NG Teck Khim
Assistant Deans: Assoc Prof HUANG Zhiyong
                        Dr LEK Hsiang Hui
Senior Associate Director: Ms Jane LIM
Assistant Manager: Mr John Elijah TAN
Executives: Mr Daniel WANG & Ms Samantha CHEN

SoC Office of Industry Relations is within the Dean’s Office at COM1 #03-27. It liaises with companies to provide internship opportunities at https://www.comp.nus.edu.sg/industry/ and organises career fairs for our undergraduates and graduates.

Email: AskIR@comp.nus.edu.sg
Some questions you may have for our Career Advisors:

- How to I plan for my career?
- How do I write a good CV?
- How do I prepare for my interview?
- How do I network with people during my internship?
- What are the resources I can use to get a job?
- I failed to secure an internship this semester. What did I do wrong? How can I do better next semester?
SoC Office of Student Life (Wellness)

Vice Dean: Assoc Prof Gary TAN
Assistant Deans: Assoc Prof Bimlesh WADHWA
                 Assoc Prof TAN Wee Kek
                 Dr Anand Mohan RAMCHAND
Senior Manager: Ms Adele CHIEW
Assistant Manager: Ms NUR Arifah
Senior Executive: Mr Nicholas CHEANG
Executive: Ms OOI Lei Shi

Our Student Life Office is also located at COM1 #02-19.

The Student Life team aims to foster student success by providing students with access to experiences that provide a balanced university life both within and beyond the classroom.

Details at: http://www.comp.nus.edu.sg/studentlife/

Email: SoCFamily@comp.nus.edu.sg
University Services – Wellness

University Counselling Services (UCS)

Phone, email or come in person (available only at Kent Ridge Campus) to make an appointment with UCS

- Phone: +65 6516 2376
- Email: ucs@nus.edu.sg

Walk-in @ KENT RIDGE CAMPUS

- 20 Lower Kent Ridge Road
  Level 2, Singapore 119060

- Operating hours:
  Monday to Thursday: 8:30 am – 5:30 pm
  Friday: 8:30 am – 5:00 pm
  Closed on Saturdays, Sundays & Public Holidays.

Last walk-in appointments are available 30 minutes before closing.
Thank you!

Meeting Etiquette for Upcoming Webinars
(for both faculty and dept briefings on 12 July 2024 (10:00 am to 12:00 pm)

• Please check your audio settings.
• Your microphone is muted with video switched off by default upon joining.
• You may post your questions via the webinar during the Q&A segment.
• These sessions will be recorded.
  • If you choose to participate in this webinar, you are giving your consent to have your video/audio text comments in these recordings and allowing us to share them.