



**ACADEMIC STRUCTURE
HANDBOOK FOR
UNDERGRADUATE
STUDIES**

AY 2022 - 23

NANYANG TECHNOLOGICAL UNIVERSITY

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NANYANG TECHNOLOGICAL UNIVERSITY
Academic Structure for
Undergraduate Studies

Last updated: 2 August 2022

The University's academic structure for undergraduate programmes which provides opportunities for students to broaden their learning experience and progress at a pace most suited to their individual needs while maintaining high academic standards, is based on the Academic Unit System.

The main feature of the Academic Unit System is the use of academic units (AU) for measuring academic workload.

1. Academic Calendar

The academic year starts off with Freshmen Orientation. It is divided into two semesters. Each semester includes 13 teaching weeks and 3 weeks for revision and examinations. There is one Special Term during the Semester 2 vacation.

2. Academic Units

Under the Academic Unit System, each course is assigned a certain number of AU.

The AU is a measure of the student's workload associated with both class attendance and preparation. For a typical one-semester course, the number of AU is calculated as follows:

- | | | |
|---|---|------|
| (a) one hour of lecture/tutorial per week | : | 1 AU |
| (b) 3 hours laboratory/fieldwork per week | : | 1 AU |

3. Candidature and Graduation Requirements

To be eligible for the award of a Bachelor's degree, a student must fulfil all the following conditions:

- obtain the total AU required for the completion of the programme within a period between the minimum and maximum candidature period stipulated for the programme
- fulfil the course requirements for the degree programme
- fulfil the residential requirements (i.e. minimum years of study at NTU)
- fulfil the minimum AU of graded courses
- fulfil the minimum Cumulative Grade Point Average (CGPA) for graduation
- satisfy all other requirements prescribed for the degree, including but not limited to professional internship, English Proficiency and Mother Tongue Language requirement

3.1. Academic Unit (AU) Requirement

For each degree programme, the number of AU that students must obtain in order to graduate is at: https://www.ntu.edu.sg/admissions/matriculation/academic-structure#Content_C007_Col00

3.2. Period of Candidature

The period of candidature for each programme is as follows:

Single Degree Programmes (Full-Time)

Programme	Period of Candidature		
	Minimum	Normal	Maximum
Accountancy Business	3 years	3 years	5 years
Aerospace Engineering Art, Design and Media Bioengineering Biological Sciences Biological Sciences and Psychology* Biomedical Sciences and BioBusiness* Chemical and Biomolecular Engineering Chemistry and Biological Chemistry Chinese Chinese and English* Chinese and Linguistics and Multilingual Studies* Civil Engineering Communication Studies Computer Engineering Computer Science Data Science and Artificial Intelligence Economics Economics and Data Science Economics and Media Analytics* Economics and Psychology* Economics and Public Policy and Global Affairs* Electrical and Electronic Engineering English English and History* English and Philosophy* English Literature and Art History* Environmental Earth Systems Science Environmental Earth Systems Science and Public Policy and Global Affairs* Environmental Engineering History History and Chinese* History and Linguistics and Multilingual Studies* Information Engineering and Media Linguistics and Multilingual Studies Linguistics and Multilingual Studies and English* Linguistics and Multilingual Studies and Philosophy* Maritime Studies Materials Engineering Mathematical and Computer Sciences* Mathematical Sciences Mathematical Sciences and Economics* Mechanical Engineering	3½ years	4 years	6 years

Philosophy Philosophy and Chinese* Philosophy and History* Physics and Applied Physics Physics and Mathematical Sciences* Psychology Psychology and Linguistics and Multilingual Studies* Psychology and Media Analytics* Public Policy and Global Affairs Sociology			
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*Degree programmes with double major, or two areas of study

For students admitted directly to the second year of a 4-year programme, the minimum, normal and the maximum periods shall be 2½ years, 3 years and 5 years respectively.

Single Degree Programmes (Part-Time)

Programme	Period of Candidature		
	Minimum	Normal	Maximum
Computer Science Electrical and Electronic Engineering Mechanical Engineering	3.5 years	4 years	6 years

Double Degree Programmes (Full-Time)

Programme	Period of Candidature		
	Minimum	Normal	Maximum
Accountancy and Business	3½ years	4 years	5 years
Accountancy and Data Science and Artificial Intelligence	4 years	4½ years [#]	6 years
Biomedical Sciences and Chinese Medicine*	5 years	5 years	7 years
Business and Computing Business and Computer Engineering	4 years	4½ years [#]	6 years
Engineering and Economics	4½ years	5 years	7 years

*Inclusive of 2 years at Beijing University of Chinese Medicine

[#] 4 years with acceleration

Integrated Programme (Full-Time)

Programme	Period of Candidature		
	Minimum	Normal	Maximum
Renaissance Engineering Programme [^]	4 years	4.5 years	6 years

[^] awards two degrees - a Bachelor's degree and a Master's degree

3.3. Minimum Residential Period

The minimum residential periods are as follows:

Programme [#]	Minimum Residential Period
3-year programmes	2 academic years
4-year programmes - For students admitted to Yr 1 - For students admitted directly to Yr 2	3 academic years 2 ½ academic years

[#]For students in the double degree programmes, the minimum residential period at NTU is one year less than the normal candidature

3.4. Minimum AU of Graded Courses

The minimum AU of graded courses are as follows:

Programme	Minimum AU of Graded Courses* Obtained from NTU
3-year programmes	52 AU
4-year programmes	
- For students admitted to Yr 1	69 AU
- For students admitted directly to Yr 2	69 AU

*Cover all courses i.e. Core, Major Prescribed Electives, Broadening and Deepening Electives (BDE), Interdisciplinary Collaborative Core (ICC) and General Education Requirement (GER) courses. The balance AU required for the degree may consist of AU earned from courses with Pass (P), Exempted (EX) and Satisfactory (S) notations.

Double degree students are awarded with two degrees. For each degree, the minimum AU of graded courses that students should obtain from NTU is the same as its corresponding single degree programme.

For students in the Engineering programmes

In addition to the above, Engineering students must also meet the following minimum number of AU of graded Core and Major Prescribed Elective courses (excluding BDE and ICC).

For Engineering students admitted in AY2022-23 and onwards

Programme	Minimum number of AU of Graded Core & Major Prescribed Elective Courses	
	For Students Admitted to Year 1	For Students Admitted Directly to Year 2*
Aerospace Engineering	51	50
Bioengineering	50	-
Chemical and Biomolecular Engineering	50	-
Civil Engineering	50	47
Computer Engineering	49	--
Computer Science	49	--
Electrical and Electronic Engineering	50	48
Environmental Engineering	50	47
Information Engineering and Media	52	50
Materials Engineering	52	46
Mechanical Engineering	51	50
Renaissance Engineering	53	--

Engineering students admitted prior to AY2022-23 are to refer to the Academic Structure Handbook for their intake.

3.5. Minimum CGPA for Graduation

A minimum CGPA of 2.00 is required at the end of the final semester of study.

4. Curricular Requirements

4.1. Curriculum Structure

The NTU Education 2025 curriculum structure comprises 3 categories of requirements:

4.1.1. Major Disciplinary Requirement

The courses of study are classified under 2 groups:

- (a) Core Courses
These are compulsory courses required to satisfy disciplinary requirements.
- (b) Major Prescribed Electives
These are courses for specialisation in a particular degree programme.

4.1.2. Interdisciplinary Collaborative Core (ICC) Requirement

- (i) 7 Common Core courses comprising -
Courses focusing on key transferable skills:
 - a) Inquiry and Communication in an Interdisciplinary World
 - b) Navigating the Digital World
 - c) Ethics and Civics in a Multicultural World
 - d) Career and Entrepreneurial Development of the Future World
Courses focusing on global challenges:
 - e) Science and Technology for Humanity
 - f) Sustainability: Society, Economy & Environment
 - g) Healthy Living and Wellbeing
- (ii) 3 Foundation Core courses which are College-specific -
 - a) Effective Communication
 - b) Digital Literacy
 - c) Internship

4.1.3. Broadening and Deepening Elective (BDE) Requirement

These are courses chosen by students to broaden and deepen their learning experience. BDE may be used to fulfil requirements for second major, minor, and work-study degree programmes. It may be used to read MOOCs approved by NTU or to read graduate-level courses. General electives catering to broad interests, such as foreign language courses, can also be read under BDE.

Broadening and Deepening Electives (BDE) may be taken from the list of courses offered by the School or, with the approval of the Chair concerned, from courses offered by other Schools in the University. Although these electives may be taken in any year of study, students are advised to plan carefully when to take these electives in order not to delay their graduation.

Students of earlier cohorts are to refer to the Academic Structure Handbook for their intake for their curricular requirements.

4.2. Prerequisites

Some courses may only be offered to students who have obtained at least the specified grade in related courses offered at a lower level. These lower-level courses are called the prerequisites for the higher-level courses.

4.3. Transfer of Academic Units and Course Exemption

With the prior approval of the Chair concerned, students are allowed to take some courses from another university and transfer the number of AU earned from that university towards fulfilling the degree requirements of NTU. This could include participation in exchange and/or other similar programme.

Grades and credits earned in other institutions are not included in CGPA computation for the classification of the degree awarded. However, the credits earned will be counted toward the AU requirement for graduation and reflected in the transcript. Only passed courses will be counted towards the AU requirement.

Students who have taken some courses from another university prior to their admission to NTU may apply for exemption of relevant courses. They must submit their application for exemption to their School within the first semester of their enrolment in NTU.

Students who transfer credits from another university and/or are granted course exemption must also comply with the requirements in Section 3 above on Candidature and Graduation Requirements.

5. Registration of Courses

5.1. Online Course Registration

All students must register their courses online according to the schedule announced by the Office of Academic Services.

Students are to attend only the classes they have officially registered for. Students who join any classes without registration will not be allowed to sit for assessment(s) or examination(s) for the course(s) involved.

5.2. Outstanding Fees

Students with outstanding fees will be denied access to the online system and barred from course registration. Students must clear their outstanding fees at least 3 working days before registering courses.

5.3. Add/Drop Courses

Students may add or drop any course provided this is done within the Add/Drop period as announced by the Office of Academic Services.

A course that is dropped during the Add/Drop period will not appear in the official transcript. Students who are still registered for a course after the Add/Drop period but did not subsequently sit for assessment(s) or examination will be deemed to have read and failed the course. An 'F' grade will appear on their official transcript.

5.4. Academic Load

In order to complete the degree requirements within the normal specified period of candidature, full-time students at NTU are expected to carry an academic load of 16 to 18 AU per semester.

Subject to approval by the Chair concerned, students may be allowed to take up to 3 AU more than the normal semester academic load to enable them to pursue their studies at a pace commensurate with their needs and/or capabilities. Students who are on Academic Warning or Academic Probation, or whose CGPA is nil are allowed to take only up to the normal load.

5.5. Restricted Repeat

Final year students who have failed any core course which is not offered in the semester following the failure may be permitted to take the failed course(s) as restricted repeat(s). This arrangement is available only for final year core courses which students cannot replace with any other courses offered in the following semester. Additionally, only final year students deemed to have sufficient AU to meet graduation requirements will be eligible for restricted repeat(s).

6. Examinations and Grades

6.1. Assessment and Examination

- 6.1.1. Continual Assessment (CA) is conducted in the form or mode that is suitable for the discipline of studies and content of the course. Feedback would be provided to students to enable them to improve on their learning during the semester.
- 6.1.2. Final examination is mandatory for examinable courses and it is generally held at the end of the semester. A student who is absent from any final examination without a valid reason, shall be deemed to have sat and failed the course.
- 6.1.3. Grade moderation may be applied to ensure consistency and fairness of assessment.
- 6.1.4. Students are not allowed to repeat courses that they have passed.
- 6.1.5. The grades for all attempts in all courses taken by a student are shown in his official transcript.

6.2. Grading System

6.2.1. The grading system used is the Grade Point Average System (GPA). Grades and grade points are assigned as follows:

Letter Grade	Grade Point
A+	5.00
A	5.00
A-	4.50
B+	4.00
B	3.50
B-	3.00
C+	2.50
C	2.00
D+	1.50
D	1.00
F	0.00

6.2.2. The following non-letter grades and notations are also used:

- * - Course with Pass/Fail grading only
- # - Repeated attempt
- IP - In Progress
- LOA - Absent (with valid reasons)
- EX - Exempted from course
- TC - Transfer credits
- S - Satisfactory
- U - Unsatisfactory

6.2.3. The Cumulative Grade Point Average (CGPA) represents the grade average of all courses (including failed courses) attempted by a student. The computation of CGPA is as follows:

$$\frac{[\text{Grade Point} \times \text{AU for Course 1}] + \dots + [\text{Grade Point} \times \text{AU for Course X}]}{[\text{Total AU attempted in all the semesters so far}]}$$

Only letter-graded courses i.e. courses with grades A+, A, A-, B- ... are included in the computation of CGPA. Courses where only Pass/Fail grades are given, where the Satisfactory/Unsatisfactory (S/U) option was invoked, where the students were absent with valid reasons (i.e. given an 'LOA' grade), and courses that the students are exempted from or are in progress (i.e. awarded an 'EX' or an 'IP' grade) are not included in the computation of CGPA. A few examples of how CGPA is computed are given below.

Example 1

Course	AU	Grade	Grade Point
AA1001	3	B	3.50
AB1002	3	B-	3.00
AC1003	3	C	2.00
AD1004	4	A	5.00
AE1005	3	D	1.00

$$\text{CGPA} = \frac{[3.50 \times 3] + [3.00 \times 3] + [2.00 \times 3] + [5.00 \times 4] + [1.00 \times 3]}{[3 + 3 + 3 + 4 + 3]} = 3.03$$

Example 2

(The S/U option was invoked for AC1003 and AD1004. Grade S denotes a Satisfactory grade while grade U denotes an Unsatisfactory grade. These two courses, AC1003 and AD1004, are excluded from the computation of the CGPA.)

Course	AU	Grade	Grade Point
AA1001	3	B	3.50
AB1002	3	B-	3.00
AC1003	3	S	NA
AD1004	4	U	NA
AF1006	3	F	0.00

$$\text{CGPA} = \frac{[3.50 \times 3] + [3.00 \times 3] + [0.00 \times 3]}{[3 + 3 + 3]} = 2.17$$

Example 3

(If a student is exempted from AA1001, the grade 'EX' will be shown for this course. If a student is absent from AB1002 examination with a valid reason approved by the School, the grade 'LOA' will be shown for the course. AE1005 is a Pass/Fail course i.e. only P or F grades are awarded. The three courses are excluded from the computation of the CGPA.)

Course	AU	Grade	Grade Point
AA1001	3	EX	NA
AB1002	3	LOA	NA
AC1003	3	C	2.00
AD1004	4	A	5.00
AE1005	3	P	NA

$$\text{CGPA} = \frac{[2.00 \times 3] + [5.00 \times 4]}{[3 + 4]} = 3.71$$

- 6.2.4. The Year Grade Point Average (YGPA) represents the grade average of all courses (including failed letter-graded courses) attempted by a student in any year. The computation of YGPA is as follows:

$$\frac{[\text{Grade Point} \times \text{AU for Course 1}] + \dots + [\text{Grade Point} \times \text{AU for Course X}]}{[\text{Total AU attempted in a year}]}$$

The method of computing the YGPA is similar to that for computing the CGPA. Please refer to the examples for computing CGPA. Courses attempted in the Special Terms are not included in the computation of the YGPA.

- 6.2.5. The CGPA will be reflected in students' transcripts.
- 6.2.6. An 'F' grade obtained in a course, and a new grade attained for the subsequent repeat, will both be reflected in the transcript. Both grades will also be counted in the computation of YGPA and CGPA (unless qualified for Freshmen Year GPA exemption, effective AY2014-15). See Section 6.4 below.

6.3. Satisfactory/Unsatisfactory (S/U) Option

- 6.3.1. The S/U option aims to encourage students to focus on exploring courses beyond their core disciplinary studies without undue concern that their GPA would be adversely affected. The S/U option allows a student to take a course on an 'ungraded' basis i.e. no letter grade such as A, B, etc., will be awarded. A course will be indicated as 'S' (Satisfactory) if the final letter grade obtained is a 'D' or better. Conversely, it will be indicated as 'U' (Unsatisfactory) if the grade obtained is 'F'. The 'S' or 'U' notations for 'Satisfactory' or 'Unsatisfactory' respectively will appear in the examination results slip and the transcript issued by the University.
- 6.3.2. A student will receive AU towards his degree only if he attains an 'S' (Satisfactory) grade. He earns no AU for courses with a 'U' grade.
- 6.3.3. The 'S' or 'U' notations carry no grade point and hence have no effect on the CGPA and the classification of degrees.
- 6.3.4. Students are to select the courses that they would like to be graded S/U online. Students will be informed each semester on the period to declare S/U for the courses that they have registered in that semester. The declaration period for each semester ends 2 working days after the last examination paper of the semester or special term. Schools will advise their students on the courses that are available for S/U option.
- 6.3.5. The S/U option does not apply to:
- Core, Major PE, ICC courses*
 - Pass/Fail courses
 - Courses that count towards the requirements for second major or minor programme
 - Courses that count towards the requirements for specialisation
 - Part-time, incoming exchange and non-graduating students
- *Unless specified otherwise*
- 6.3.6. The maximum number of AU that a student can choose for S/U grading during his candidature is as follows:

Programme	S/U Quota
3-year	12 AU
4-year (except Biomedical Sciences and Chinese Medicine)	
- For students admitted to Yr 1	12 AU
- For students admitted directly to Yr 2	9 AU
Biomedical Sciences and Chinese Medicine	9 AU

- 6.3.7. Once opted for S/U grading, the course AU will count towards the S/U quota regardless of the final results i.e. S, U or if the student is absent with valid reasons such as on medical or compassionate grounds.
- 6.3.8. The S/U option that students have exercised for a course is irrevocable. Hence, students who have invoked S/U cannot appeal for the course(s) to be reversed to letter grade(s) after the declaration period is over. The S/U option cannot be applied retrospectively after the declaration period or to courses that students have already completed for letter grades.
- 6.3.9. A student who obtains a 'U' grade can repeat the course. However, the 'U' grade that he gets for his first attempt will remain in his academic record and will be reflected on the transcript issued by the University.

- 6.3.10. The repeat attempt(s) of a course will retain the grading option chosen for the first attempt i.e. S/U or letter-graded. In other words, a student can only declare S/U option for the first attempt of a course. As such, if S/U grading has not been opted for a course, a student will also not be able to opt for S/U grading for its repeat attempt(s). Similarly, if S/U grading has been opted for a course, its repeat attempt(s) will also be graded S/U. The repeat course includes replacement courses, i.e. a course that replaces another course which is no longer offered. The AU of a course that has been opted for S/U grading will be counted towards the S/U quota only once. Its repeat attempt(s) will not be counted towards the quota again.
- 6.3.11. Students who exercise the S/U option must comply with the requirements in Section 3 above on Candidature and Graduation Requirements.

6.4. Freshmen Year GPA Exemption

- 6.4.1. Up to 6 letter-graded courses that do not make the pass grade on first attempt in the Freshmen Year will be excluded from GPA computation. This applies to examinable and non-examinable courses taken in the student's first 2 semesters of study in NTU, including adjoining Special Terms. The freshmen year GPA exemption aims to mitigate the impact of academic performance on students' GPA during their transition to university life.
- 6.4.2. GPA exemption is not applicable for courses with fail grade taken on the second or subsequent attempts in the Freshmen Year.
- 6.4.3. The unused quota of 6 courses will lapse after the Freshmen Year.
- 6.4.4. Students are not eligible for promotion to the next study year if their CGPA is nil arising from GPA exemptions, even if they meet the AU criteria.
- 6.4.5. The grades for all attempts, including those exempted from GPA computation, will be reflected on the transcript.

6.5. Academic Standing

- 6.5.1. The criterion for satisfactory academic standing in any given semester is a minimum CGPA of 2.00.
- 6.5.2. Students with poor results will be accorded the following academic standing and subjected to performance review:
- Academic Warning – if the CGPA falls below 2.00 for any given semester.
 - Academic Probation – if the CGPA falls below 2.00 for the second consecutive semester.
 - Academic Termination – if the CGPA falls below 2.00 for the 3rd consecutive semester, or at the end of the final semester of study. A letter of termination will be issued. Appeal against termination on the grounds of extenuating circumstances may be made, subject to the following rules:
 - The appeal must be submitted to the relevant School within 2 weeks after the release of the semester examination results or before the start of the next semester, whichever is earlier.
 - Only one appeal is allowed per candidature.

If a student with an adverse academic standing is on internship (that is not letter-graded) for the full semester, the student will retain the academic standing of his previous semester.

6.5.3. A minimum CGPA of 2.0 must be maintained at the end of each semester to qualify for the overloading of courses.

6.5.4. Students enrolled in the Accelerated Bachelor's Programme must maintain a minimum CGPA of 4.00 in order to remain in the Programme.

6.6. Classification of Students

Students are classified into respective study year according to the number of AU earned. Students will not advance to the next study year if their Cumulative Grade Point Average (CGPA) is nil. Students placed on Academic Warning and Academic Probation will not advance to the next study year until they have been restored to satisfactory academic standing.

The number of AU that students must earn to be classified to the next year of study is at:

https://www.ntu.edu.sg/admissions/matriculation/academic-structure#Content_C007_Col00

6.7. Classification of Degree

The degree classification and corresponding CGPA requirement is as follows:

CGPA Range	Classification of Degree
4.50 – 5.00	Honours (Highest Distinction)
4.00 – 4.49	Honours (Distinction)
3.50 – 3.99	Honours (Merit)
3.00 – 3.49	Honours
2.00 – 2.99	Pass

For programmes under the College of Engineering (except for the Maritime Studies and Data Science and Artificial Intelligence programme), a minimum CGPA of 4.50 and at least a 'B+' grade for the Final Year Project (FYP), are required for the award of an Honours (Highest Distinction) degree.

For programmes under the College of Science, a minimum CGPA of 4.50 and at least an 'A-' grade for the Final Year Project (FYP), are required for the award of an Honours (Highest Distinction) degree.

For programmes under the School of Humanities and the School of Social Sciences, students who opt-out of the Final Year Project will not be eligible for an Honours (Highest Distinction) or Honours (Distinction) degree.

6.8. Dean's List

The Dean's List is awarded to deserving top-performing students on a yearly basis. The top 5% of the cohort, subject to attaining a minimum YGPA of 4.50 and the specified AU of graded courses by curriculum type taken in NTU in the academic year, is eligible for the Dean's List. Full-time single degree students have to complete at least 15 AU of graded courses, while part-time single degree students have to complete at least 9 AU of graded courses. Double-degree students have to complete a total of 15 AU of discrete graded courses from both degrees, and 9 AU of graded courses from each degree. In addition to the criteria mentioned above, final year students must attain at least an Honours (Distinction) degree in order to be considered for the Dean's List. See details in table below.

Criteria	Single-Degree	Double-Degree
Minimum YGPA	4.50	4.50
Minimum No. of AU of graded courses	15 (for Full-time students) 9 (for Part-time students)	15*
Minimum No. of AU of graded courses per degree	NA	9
Minimum Degree Classification/ CGPA obtained for <u>Final Year students</u>	Honours (Distinction)/ 4.00	Honours (Distinction)/ 4.00

* This is the total graded AU of discrete courses earned by students from both degrees in an academic year, i.e. AU of common courses which contribute to both degrees will not be double counted.

Courses that are graded as Satisfactory/Unsatisfactory (S/U) and Pass/Fail or those with grades 'EX' (Exempted), 'IP' (In Progress) and 'LOA' (Leave of Absence) are not counted in the AU of graded courses for the purpose of determining the Dean's List. Students with any GPA exemption in their Freshmen Year or on disciplinary holds/sanctions will not be eligible for the Dean's List for the year.