

Stage 5A — Part-time (as set out below).

STAGE 5A
(30 weeks part-time course)

	Hours per week for 3 terms lec. lab./tut.
8.131 Structures	2 — 2
8.141 Engineering Computations	1 — 0
8.222 Engineering Materials	1 — 1
8.521 Hydraulics	1 — 1
8.612 Civil Engineering	1 — 0
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	6 — 4

CIVIL ENGINEERING—CONVERSION COURSE

(A.S.T.C. Diploma to B.Sc. (Tech.) Degree)

Recent A.S.T.C. diploma holders in Civil Engineering may qualify for the degree of Bachelor of Science (Technology) by completing the following course of study. The programme outlined is what will be required of recent diplomates. Diplomates of many years standing may be required to take additional subjects.

FIRST STAGE
(30 weeks part-time course)

	Hours per week for 3 terms lec. lab./tut.
1.001/2 Physics I, Part 2	1½ — 1½
2.001/2 Chemistry I, Part 2	1½ — 1½
5.301 Engineering Mechanics	1½ — ½
10.022/2 Mathematics	1½ — ½
Social Science Elective	1 — 0
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	6½ — 4½

SECOND STAGE
(30 weeks part-time course)

	Hours per week for 3 terms lec. lab./tut.
1.212 Physics II(T)	1½ — 1½
8.131 Structures	2 — 2
8.141 Engineering Computations	1 — 0
8.222 Engineering Materials (Soil Mechanics)*	2 — 0
8.521 Hydraulics	1 — 1
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	7½ — 4½

* First term only.

A.S.T.C. diplomates who completed their course in Civil Engineering in 1961 or later years and who wish to qualify for the degree of Bachelor of Engineering by full-time study may do so by completing the subjects of Stages 6 and 7 of the existing part-time Bachelor of Engineering degree course, or their equivalent, in one year.

Department of Surveying

The Department of Surveying of the School of Civil Engineering offers a full-time course, a part-time course and a special six-year trainee course leading to the degree of Bachelor of Surveying (pass and honours). Suitably qualified candidates may also register for the degree of Master of Surveying. Since 1961 the University Degree in Surveying has been the only route by which the registration of the Surveyors Registration Board of N.S.W. may be obtained. Students who are registered surveyors are granted certain exemptions, particulars of which are given below.

SURVEYING—FULL-TIME COURSE

FIRST YEAR
(30 weeks day course)

	Hours per week for 30 weeks lec. lab./tut.
1.001 Physics I	3 — 3
2.001 Chemistry I	3 — 3
5.001 Engineering I	3 — 3
10.001 Mathematics I	4 — 2
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	13 — 11

SECOND YEAR*
(24 weeks day course)

	Hours per week for 24 weeks lec. lab./tut.
1.212S Physics II(T)	2 — 2½
8.421S Engineering Surveying**	1½ — 1½
8.811S Surveying**	1 — 1
8.841S Surveying Computations	1 — 1
8.861S Cartography	1 — 1½
8.871S Land Utilisation	1½ — ½
10.022S Mathematics	4 — 1
10.361S Statistics	1½ — 0
25.531S Geology†	2 — 1
50.011H English or	} ‡.... 3 — 0
57.011H An Introduction to Modern Drama	
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	18½ — 10

* Lectures cease at end of 3rd week of 3rd term.

** A two-week survey camp must be attended in third term.

† Two one-day Geology excursions are an essential part of the course.

‡ Terms 1 and 2 only.

THIRD YEAR*
(24 weeks day course)

	Hours per week for—	
	10 weeks lec. lab./tut.	14 weeks lec. lab./tut.
5.501S Fluid Mechanics	1 — 1½	1 — 1½
8.812S Surveying	1 — 2	1 — 0
8.241S Soil Mechanics	1 — 1½	1 — 1½
8.821S Geodesy**	2 — 3	1 — 3
8.831S Astronomy**	2 — 0	2 — 2
8.842S Surveying Computations	1½ — 1½	1 — 0
8.851S Photogrammetry	1 — 1½	2 — 3
8.611S Civil Engineering	3 — 0	3 — 0
8.891S Theory of Instruments	1 — 0	1 — 0
51.011HS History or } †	1½ — 0	1½ — 0
52.011HS Philosophy }		
Social Science Elective†	1½ — 0	1½ — 0
	<u>16½ — 10½</u>	<u>16 — 10½</u>

FOURTH YEAR*—PASS COURSE
(24 weeks day course)

	Hours per week for 24 weeks lec. lab./tut.
8.613S Civil Engineering	4½ — 0
8.822S Geodesy	1 — 1
8.832S Astronomy	1½ — ¾
8.852S Photogrammetry	1 — 1½
8.862S Cartography	2 — 0
8.872S Land Valuation	1 — 0
8.881S Survey Laws and Regulations	1½ — 0
11.411 Town Planning†	1 — 1
8.011S Minor Thesis	3 — 0
25.533 Geophysics‡	2½ — 0
Humanities, Advanced Elective†	3 — 0
	<u>21½ — 4½</u>

FOURTH YEAR—HONOURS COURSE
(30 weeks day course)

	Hours per week for 24 weeks* lec. lab./tut.
8.613S Civil Engineering	4½ — 0
8.822S Geodesy	1 — 1
8.832S Astronomy	1½ — ¾
8.852S Photogrammetry	1 — 1½
8.862S Cartography	2 — 0
8.872S Land Valuation	1 — 0
8.881S Survey Laws and Regulations	1½ — 0
11.411 Town Planning†	1 — 1
25.533 Geophysics**	2½ — 0
Humanities, Advanced Elective†	3 — 0
8.021 Thesis	2 — 0
Two Honours subjects are to be selected from: 8.424 Surveying 8.823 Geodesy 8.853 Photogrammetry }	3 — 0
	<u>23½ — 4½</u>

SURVEYING—PART-TIME COURSE

FIRST STAGE
(30 weeks part-time course)

	Hours per week for 30 weeks lec. lab./tut.
1.001/1 Physics I, Part I	1½ — 1½
2.001/1 Chemistry I, Part I	1½ — 1½
5.001/1 Engineering I, Part I	1½ — 1½
10.001/1 Mathematics I, Part I	2 — 1
	<u>6½ — 5½</u>

SECOND STAGE
(30 weeks part-time course)

	Hours per week for 30 weeks lec. lab./tut.
1.001/2 Physics I, Part II	1½ — 1½
2.001/2 Chemistry I, Part II	1½ — 1½
5.001/2 Engineering I, Part II	1½ — 1½
10.001/2 Mathematics I, Part II	2 — 1
	<u>6½ — 5½</u>

* Lectures cease in Third Year at end of 4th week of 3rd term, and in Fourth Year at end of 3rd week of 3rd term.

** A two-week survey camp must be attended in third term.

† Terms 1 and 2 only.

‡ Four short Geophysical excursions are an essential part of the course.

* In the last 6 weeks of third term 18 hours per week will be devoted to work on the thesis. In addition students will be required to spend nine hours per week on such course work as may be prescribed.

** Four short Geophysical excursions are an essential part of the course.

† Terms 1 and 2 only.

THIRD STAGE
(30 weeks part-time course)

	Hours per week for 30 weeks	
	lec.	lab./tut.
1.212 Physics II(T)	1½	1½
8.421 Engineering Surveying*	¾	¾
8.841 Surveying Computations	¾	¾
8.861 Cartography	¾	1½
10.022/1 Mathematics II, Part I	1½	½
50.011H/1 English	1	0
	<u>5½</u>	<u>4½</u>

FOURTH STAGE
(30 weeks part-time course)

	Hours per week for 30 weeks	
	lec.	lab./tut.
5.501 Fluid Mechanics	1	1
8.811 Surveying†	¾	¾
8.871 Land Utilisation	1	½
10.022/2 Mathematics II, Part II	1½	1
10.361 Statistics	1	0
25.531 Geology‡	1½	¾
50.011H/2 English	1	0
51.011H History or	1	0
52.011H Philosophy)	1	0
	<u>8½</u>	<u>4</u>

FIFTH STAGE
(30 weeks part-time course)

	Hours per week for—	
	20 weeks	10 weeks
	lec. lab./tut.	lec. lab./tut.
8.241 Soil Mechanics	1 — 1	1 — 1
8.821 Geodesy	1½ — 2½	1½ — 2½
8.842 Surveying Computations†	1 — ½	1 — ½
8.862 Cartography	2 — 0	1 — 0
8.891 Theory of Instruments	1 — 0	0 — 0
Social Science Elective	1 — 0	1 — 0
	<u>7½ — 3½</u>	<u>5½ — 3½</u>

* Saturday fieldwork additional. A survey camp of one week must be attended in the third term.

† A Survey camp of one week must be attended in third term.

‡ Two one-day Geology excursions are an essential part of the course.

SIXTH STAGE
(30 weeks part-time course)

	Hours per week for—	
	20 weeks	10 weeks
	lec. lab./tut.	lec. lab./tut.
8.611 Civil Engineering	2 — 0	2 — 0
8.812 Surveying*	1 — 1	1 — 0
8.831 Astronomy	1½ — ½	1½ — 1½
8.851 Photogrammetry	1½ — 1½	1½ — 1½
25.533 Geophysics	2 — 0	2 — 0
Humanities—Advanced Elective	2 — 0	2 — 0
	<u>9½ — 3½</u>	<u>9½ — 3½</u>

SEVENTH STAGE
(30 weeks part-time course)

	Hours per week for—	
	20 weeks	10 weeks
	lec. lab./tut.	lec. lab./tut.
8.613 Civil Engineering	3½ — 0	3½ — 0
8.822 Geodesy	1½ — 0	1½ — 0
8.832 Astronomy	1½ — ½	0 — 1½
8.852 Photogrammetry	1 — 1	½ — 1½
8.872 Land Valuation	1 — 0	0 — 0
8.881 Survey Laws and Regulations	1 — 0	2 — 0
11.411 Town Planning	2 — 0**	0 — 0
	<u>11½ — 1½</u>	<u>7½ — 3</u>

Note.—Part-time students are not required to complete a thesis since their professional experience is taken into consideration.

Honours are not awarded in the part-time course. To qualify for honours a part-time student must transfer to the full-time course and complete, at his first attempt, the fourth year of the full-time Honours course.

TRAINEE SURVEYING DEGREE COURSE
(6 years with day release)

The first two years of this course are identical with the first two years of the part-time Surveying Degree Course. In later years individual timetables must be arranged at the time of enrolment, to accord with timetables for subjects offered in the full-time and part-time courses.

* A survey camp of one week must be attended in third term.

** One term of lectures and one term of studio work.

FIRST YEAR
(30 weeks part-time course)

	Hours per week for 30 weeks lec. lab./tut.
1.001/1 Physics I, Part I	1½ — 1½
2.001/1 Chemistry I, Part I	1½ — 1½
5.001/1 Engineering I, Part I	1½ — 1½
10.001/1 Mathematics I, Part I	2 — 1
	<hr/> 6½ — 5½

SECOND YEAR
(30 weeks part-time course)

	Hours per week for 30 weeks lec. lab./tut.
1.001/2 Physics I, Part II	1½ — 1½
2.001/2 Chemistry I, Part II	1½ — 1½
5.001/2 Engineering I, Part II	1½ — 1½
10.001/2 Mathematics I, Part II	2 — 1
	<hr/> 6½ — 5½

THIRD YEAR
(30 weeks part-time course)

	Hours per week for 30 weeks lec. lab./tut.
1.212 Physics II(T)	1½ — 1½
8.421 Engineering Surveying*	¾ — ¾
8.841 Surveying Computations	¾ — ¾
8.861 Cartography	¾ — 1½
10.022/1 Mathematics II, Part I	1 — 1
10.361 Statistics	1 — 0
50.011H/1 English	1 — 0
	<hr/> 6¾ — 5½

FOURTH YEAR
(30 weeks part-time course)

	Hours per week for 30 weeks lec. lab./tut.
5.501 Fluid Mechanics	1 — 1
8.811 Surveying*	¾ — ¾
8.842 Surveying Computations	1 — ¾
8.862 Cartography	1½ — 0
8.871 Land Utilisation	1 — ½
10.022/2 Mathematics II, Part II	1 — 1
25.531 Geology	1½ — ¾
50.011H/2 English	1 — 0
51.011H History or }	
52.011H Philosophy }	1 — 0
	<hr/> 9½ — 4½

* Saturday fieldwork additional. A survey camp of one week must be attended in the third term.

FIFTH YEAR
(30 weeks part-time course)

	Hours per week for 30 weeks lec. lab./tut.
8.241 Soil Mechanics	1 — 1
8.611 Civil Engineering	2 — 0
8.812 Surveying*	1½ — 0
8.821 Geodesy	1½ — 2½
8.831 Astronomy	2 — ½
8.851 Photogrammetry	1½ — 1½
8.891 Theory of Instruments	¾ — 0
	Social Science Elective
	1 — 0
	<hr/> 10½ — 5½

SIXTH YEAR
(30 weeks part-time course)

	Hours per week for 30 weeks lec. lab./tut.
8.613 Civil Engineering	3½ — 0
8.822 Geodesy	1½ — 0
8.832 Astronomy	1½ — ½
8.852 Photogrammetry	1 — 1
8.872 Land Valuation	½ — 0
8.881 Survey Laws and Regulations	1½ — 0
11.411 Town Planning	1½ — 0
25.533 Geophysics	2 — 0
	Advanced Elective
	2 — 0
	<hr/> 14¾ — 1½

Note—Trainee students are not required to complete a thesis since their professional experience is taken into consideration.

For an Honours degree, a part-time student must transfer to and complete the 4th Year of the full-time course.

EXEMPTIONS

The following exemptions are granted to registered surveyors and persons who have completed subjects in the Surveying Certificate Course of the N.S.W. Department of Technical Education, viz:—

(a) Exemptions for Licensed Surveyors.

(i) The following exemptions in the Surveying Degree Course will be granted to Registered Surveyors who have passed the examination of the Surveyors' Registration Board.

Subject	Equivalent Subject Passed
8.421 Engineering Surveying	Engineering Surveying A
8.841 Surveying Computations	Computations A
8.861 Cartography	Field Practice
8.881 Survey Laws and Regulations	Laws and Regulations affecting Surveys

* A survey camp of two weeks must be attended in the third term.

- (ii) Registered Surveyors who have passed the examinations of the Surveyors' Registration Board will be granted admission to examinations in the following subjects of the Surveying Degree Course without attendance at classes.

<i>Subject</i>	<i>Registration Board Subject Passed</i>
8.811 Surveying	Engineering Surveying A and B
8.821 Geodesy	Geodesy
8.831 Astronomy	Astronomy
8.871 Land Utilisation	Land Classification and Utilisation
8.872 Land Valuation	Principles and Practice of Land Valuation

(b) *Persons who have completed individual subjects, etc.*

The following exemptions in the Surveying Degree Course will be granted to persons who have passed the following equivalent individual subjects in the Surveying Certificate Course:—

<i>Subject Exempt</i>	<i>Surveying Certificate Equivalent</i>
8.411 Engineering Surveying	Engineering Surveying I
8.841 Surveying Computations	Surveying Computation II
8.861 Cartography	Plotting and Plan Drawing
8.871 Land Utilisation	Land Classification and Utilisation
8.872 Land Valuation	Land Surveying II (Land Valuation)
Town Planning	Town Planning

SCHOOL OF ELECTRICAL ENGINEERING

In preparation for a career in any branch of electrical engineering the student must acquire a knowledge of the basic sciences of mathematics and physics. Students should realise that electrical engineering, perhaps more than most other branches of engineering, is closely linked with the pure sciences, and requires a scientific outlook and approach for a proper understanding of its problems.

The School offers a full-time course of four years' duration leading to the degree of Bachelor of Engineering (pass or honours), and a six-year part-time course for the degree of Bachelor of Science (Technology). This course may also be completed in three years of part-time and two years of full-time study. Special conversion courses are provided for holders of the A.S.T.C. diploma in Electrical or Radio Engineering.

In the early years of the electrical engineering courses students will concentrate on the basic sciences, mathematics, physics and chemistry, and as well will receive an introduction to engineering. In the final year students will elect, with the approval of the Head of the School, to study in one of the specialised fields of electrical engineering (referred to as options), at the same time taking the common subjects in electrical engineering.

In 1965 a revised fourth year will be introduced in the full-time B.E. course (pass and honours) which will provide for specialisation in one or other of the following options:

- (a) Power and control systems and apparatus — concerned with the generation, distribution and control of electrical energy, and
 (b) Communications — concerned with radio line communications, radar and other navigational aids, and television.

In the past the content of these two fields has been offered in three options, *viz.* power apparatus and systems, utilization and control, and communications. These three options will be offered for the last time in 1964 to full-time students, and in 1965 to part-time students. Beginning in 1966 the same options will be offered in both the full-time and the part-time course. Details of the revised fourth year to be introduced in 1965 are given in the course outlined below.

Each student in the full-time course is required to work on a project under the guidance of members of the lecturing staff. Generally, the project will involve the design and construction of experimental apparatus together with laboratory tests. Where possible the projects will be related to the research programme of the School and will be designed to develop the student's initiative. Each student will be required to deliver a seminar paper and to prepare a thesis based on the results of the project work.

Provision is made in the full-time course for students to undertake additional work in their third and fourth years towards the award of an honours degree.

ELECTRICAL ENGINEERING—FULL-TIME COURSE

The full-time course is of four years duration and leads to the degree of Bachelor of Engineering (pass or honours). The four years of the course each require full-time day attendance at the University for thirty weeks. Practical experience in industry is to be obtained up to a total of 20 weeks, preferably at the end of the second and third years for a period of 10 weeks per year.

FIRST YEAR

(30 weeks day course)

	Hours per week for 3 Terms lec. lab./tut.
1.001 Physics I	3 — 3
2.001 Chemistry I	3 — 3
5.001 Engineering I	3 — 3
10.001 Mathematics I	4 — 2
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	13 — 11
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