

# Bachelor of Engineering (BENG) - BEng

QTAC code (Australian and New Zealand applicants): Toowoomba campus: 907332; External: 907335;  
Springfield campus: 927332

CRICOS code (International applicants): 003581E

**This program is only offered to continuing students. No new admissions will be accepted. Students who are interested in this study area should consider the [Bachelor of Engineering \(Honours\)](#) which will be offered from S1 2014.**

|                              | On-campus  | External  |
|------------------------------|--|---|
| <b>Semester intake:</b>      | No new admissions  | No new admissions   |
| <b>Campus:</b>               | Springfield, Toowoomba   | -   |
| <b>Fees:</b>                 | Commonwealth supported place<br>Domestic full fee paying place<br>International full fee paying place      | Commonwealth supported place<br>Domestic full fee paying place<br>International full fee paying place |
| <b>Standard duration:</b>    | 4 years full-time, 8 years part-time or external   |   |
| <b>Program articulation:</b> | From: <a href="#">Associate Degree of Engineering</a> ; <a href="#">Bachelor of Engineering Technology</a> |   |

## Notes:

Please note that the Civil Engineering major is the only major that is available on-campus at Springfield.

## Contact us

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| <b>Current students</b>  |
| <a href="#">Ask a question</a><br>Freecall (within Australia): 1800 007 252<br>Phone (from outside Australia): +61 7 4631 2285<br>Email <a href="mailto:usq.support@usq.edu.au">usq.support@usq.edu.au</a> |

## Professional accreditation

A graduate of this program is eligible to apply for membership of Engineers Australia as a graduate Professional Engineer. After further professional development, a graduate member with a Bachelor of Engineering may apply for chartered status as a Professional Engineer and, when granted, may use the post-nominal MIEAust CPEng.

The Bachelor of Engineering program is accredited by Engineers Australia and, through an agreement reached between the professional engineering bodies of other countries (the Washington Accord), is also recognised in the United Kingdom, the United States of America, Canada, Ireland, Hong Kong, New Zealand and South Africa.

## Program aims

The Bachelor of Engineering provides students with the knowledge and skills that are necessary to commence practice as a professional engineer and to undertake further advanced level studies in engineering. Specifically the program provides students with a core of basic generic and technical skills, common to all branches of engineering, and then permits students to undertake an in depth study of either agricultural, civil, computer systems, electrical and electronic, environmental, instrumentation and control, mechanical, mechatronic, power engineering. In addition, students are equipped with a kno

in which they will function as professional engineers. The program also seeks to instill in students a capacity to communicate effectively and adapt to change.

The Bachelor of Engineering is primarily vocationally oriented. However, the program has been designed to identify students who have the capacity to undertake further study at an advanced level and to make an original contribution to engineering knowledge. These students are encouraged to undertake the course [ENG8001 Engineering Research Methods](#) as one of their Elective courses. This, and the two Research Project courses, will assist them in achieving these goals.

## Program objectives

The objectives of this program are:

- to enable students to acquire, and demonstrate that they possess, the specified graduate attributes and capabilities
- to enable students to acquire in-depth technical competence in one of the following fields: Agricultural Engineering; Civil Engineering; Computer Systems Engineering; Electrical and Electronic Engineering; Environmental Engineering; Instrumentation and Control Engineering; Mechanical Engineering; Mechatronic Engineering; or Power Engineering.
- to enable students from diverse and non-traditional backgrounds and locations to enrol in the program and to provide them with opportunities to acquire the skills necessary to complete the program in the normal time
- to enable students to be empowered as learners through the provision of a wide range of teaching and learning styles and modes in their program
- to ensure that all students, regardless of the mode of study, have equality of opportunity in acquiring the specified graduate attributes and capabilities
- to ensure that graduates are eligible for graduate membership of Engineers Australia, and other appropriate professional bodies.

## Admission requirements

### Applicants shall normally:

- have studied four semester units and achieved an exit assessment of 'Sound Achievement' or better in each of the following Queensland Senior Secondary School subjects: English and Mathematics B. It is recommended that applicants should also have satisfactorily completed the subject: Physics

or

- be able to demonstrate that they have achieved an equivalent standard in these subjects at another institution

and

- **Australian applicants:** have achieved a Queensland Overall Position (OP) band, or an equivalent Rank based on qualifications and previous work experience, at or above the specified cut-off level

All students are required to satisfy the applicable [English language requirements](#).

If you do not meet the English language requirements you may apply to study a University-approved [English language program](#). On successful completion of the English language program, you may be admitted to an award program.

## Program fees

### Commonwealth supported place

A Commonwealth supported place is where the Australian Government makes a contribution towards the cost of your higher education and you as a student pay a [student contribution amount](#), which varies depending on the courses undertaken. You are able to calculate the fees for a particular course via the [Course Fee Finder](#).

Commonwealth Supported students may be eligible to defer their fees through a Government loan called [HECS-HELP](#).

### **Domestic full fee paying place**

Domestic full fee paying places are funded entirely through the full fees paid by the student. Full fees vary depending on the courses that are taken. You are able to calculate the fees for a particular course via the [Course Fee Finder](#).

Domestic full fee paying students may be eligible to defer their fees through a Government loan called [FEE-HELP](#) provided they meet the residency and citizenship requirements.

Australian citizens, Permanent Humanitarian Visa holders, Permanent Resident visa holders and New Zealand citizens who will be resident outside Australia for the duration of their program pay full tuition fees and are not eligible for [FEE-Help](#).

### **International full fee paying place**

International students pay full fees. Full fees vary depending on the courses that are taken and whether they are studied on-campus, via distance education/online. You are able to calculate the fees for a particular course via the [Course Fee Finder](#).

## **Program structure**

The Bachelor of Engineering is a 32 unit program consisting of Academic courses and Practice courses.

Academic courses are normally one-unit courses and involve approximately 155 hours of student work per unit.

Practice courses are zero unit courses and each involves approximately 50 hours of student work. The only grades available for a Practice Course are Pass (P) and Fail (F). A Practice Course is designed to enable students to acquire specific competencies associated with their major study. These competencies range from specific practical and communication skills through to generic competencies relating to ethical and social responsibility, awareness of the environment, teamwork, etc. For an external student a Practice Course generally involves attendance on-campus for a one-week [residential school](#).

The components of the program are shown in the following table:



|   |     |     |
|---|-----|-----|
| Civil Engineering                       | Yes | Yes |
| Computer Systems Engineering            | Yes | Yes |
| Electrical and Electronic Engineering   | Yes | Yes |
| Environmental Engineering               | Yes | Yes |
| Instrumentation and Control Engineering |     | Yes |
| Mechanical Engineering                  | Yes | Yes |
| Mechatronic Engineering                 | Yes | Yes |
| Power Engineering                       | Yes | Yes |

### **Required time limits**

Full-time students have a maximum of six years to complete this program. Part-time students have a maximum of 10 years to complete this program.

- Electrical and Electronic Engineering
- Environmental Engineering
- Instrumentation and Control Engineering
- Mechanical Engineering
- Mechatronic Engineering
- Power Engineering

### **Electives/Approved courses**

In the Bachelor of Engineering, students are not required to undertake the Elective courses until the third and fourth levels of the program. This enables students enrolled in the second level of the program to discuss their choice of Electives with their Faculty. The most popular choices of courses for Electives may thus be timetabled to allow students to attend in their third and fourth years of study. Appropriate Electives are shown in the tables in the Recommended Enrolment Pattern section. Students may undertake only one appropriate level five or level eight course from the Bachelor of Engineering or another Engineering and Built Environment program as an Elective with the approval of the Faculty of Health, Engineering and Sciences. The Faculty may approve a variation in Elective studies where the student can demonstrate that there is a sound academic argument for the change. Arguments based on timetable difficulties, quota problems etc. will not normally be entertained. Note however that students who wish to enrol in courses other than those listed must obtain the written approval from the Faculty of Health, Engineering and Sciences prior to enrolling in the course if they want the course to count as credit towards their award.

Students should note that quota restrictions may preclude their enrolment in particular Elective study courses as students enrolling in these courses as part of their core or major studies will be given enrolment priority.

### **Practical experience**

To be eligible to graduate from the Bachelor of Engineering, students must obtain an aggregate of at least 60 days of suitable practical experience during their program. This experience may be in an engineering office or laboratory where the student would be working principally with professional engineers and engineering associates. It may, however, be preferable for students to spend some time in field or factory activities to gain insight into industrial practice and to see what is involved in converting designs into finished products. Students are required to enrol in [ENG4909 Work Experience - Professional](#) in the latter part of their program and keep a record of appropriate experience as specified in the Course Specification. The work experience is to be endorsed by an appropriate person in the organisation providing the experience and submitted to the examiner. The student must meet all costs associated with the acquisition of practical experience to satisfy this requirement. The record of work experience must be made available for perusal by the Faculty of Health, Engineering and Sciences upon request. The acceptability or otherwise of employment e

course. Practice courses **may not** be taken earlier than shown except with the permission of the Faculty of Health, Engineering and Sciences. In some cases students may enrol in two Practice courses in one term so they can complete the two residential schools in a two-week period. The actual dates for each residential school are shown in the [Residential School schedule](#) in this Handbook.

Safety boots are compulsory in engineering laboratories for several of the Practice courses and are strongly recommended for all other Practice courses.

### **Practice courses**

The majority of the practical and professional experience requirements for the program are contained within the major recommended enrolment pattern in the following table. These are zero unit courses, which are a **compulsory part** of the program, however they do not attract a student contribution charge for Australian Residents or a tuition fee for international students.

[ENG3902 Professional Practice 1](#) is to be studied in the student's penultimate year. Upon completion of [ENG3902 Professional Practice 1](#), students must study [ENG4111 Research Project Part 1](#) and [ENG4112 Research Project Part 2](#) and [ENG4903 Professional Practice 2](#) in the same academic year.

### **Elective courses**

Elective courses are included in the list of Academic courses. Students should select these courses from the Electives listing.

### **Related programs**

Students may combine the Bachelor of Engineering with a program from another area of study. Currently the following combined programs have been accredited by the University and Engineers Australia:

- [Bachelor of Engineering and Bachelor of Business](#)
- [Bachelor of Engineering and Bachelor of Information Technology](#)
- [Bachelor of Engineering and Bachelor of Science](#).

### **Exit points**

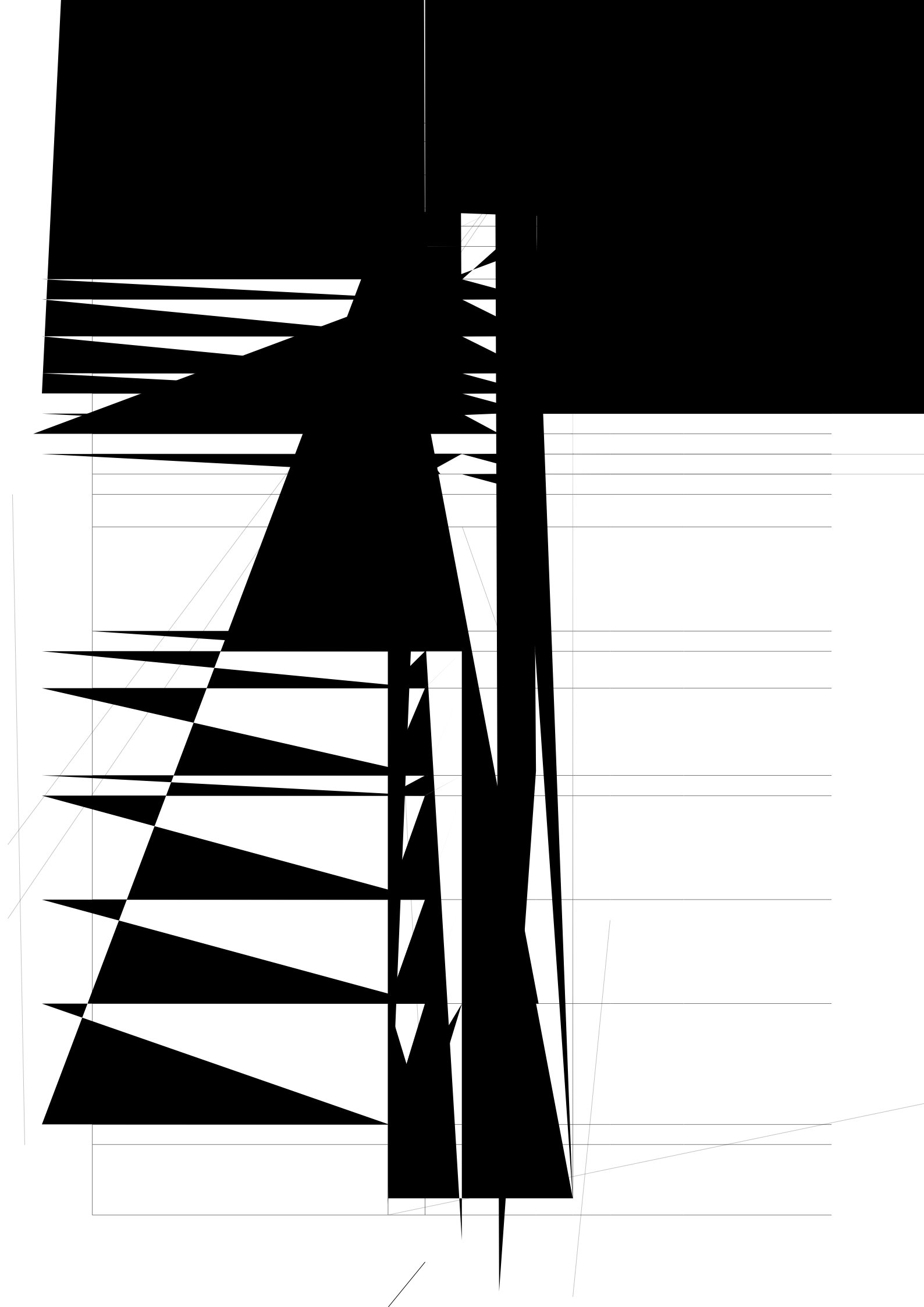
Students who, for whatever reason, are unable to complete the Bachelor of Engineering and who satisfy all of the requirements of either the [Bachelor of Engineering Technology](#), the [Associate Degree of Engineering](#) or the

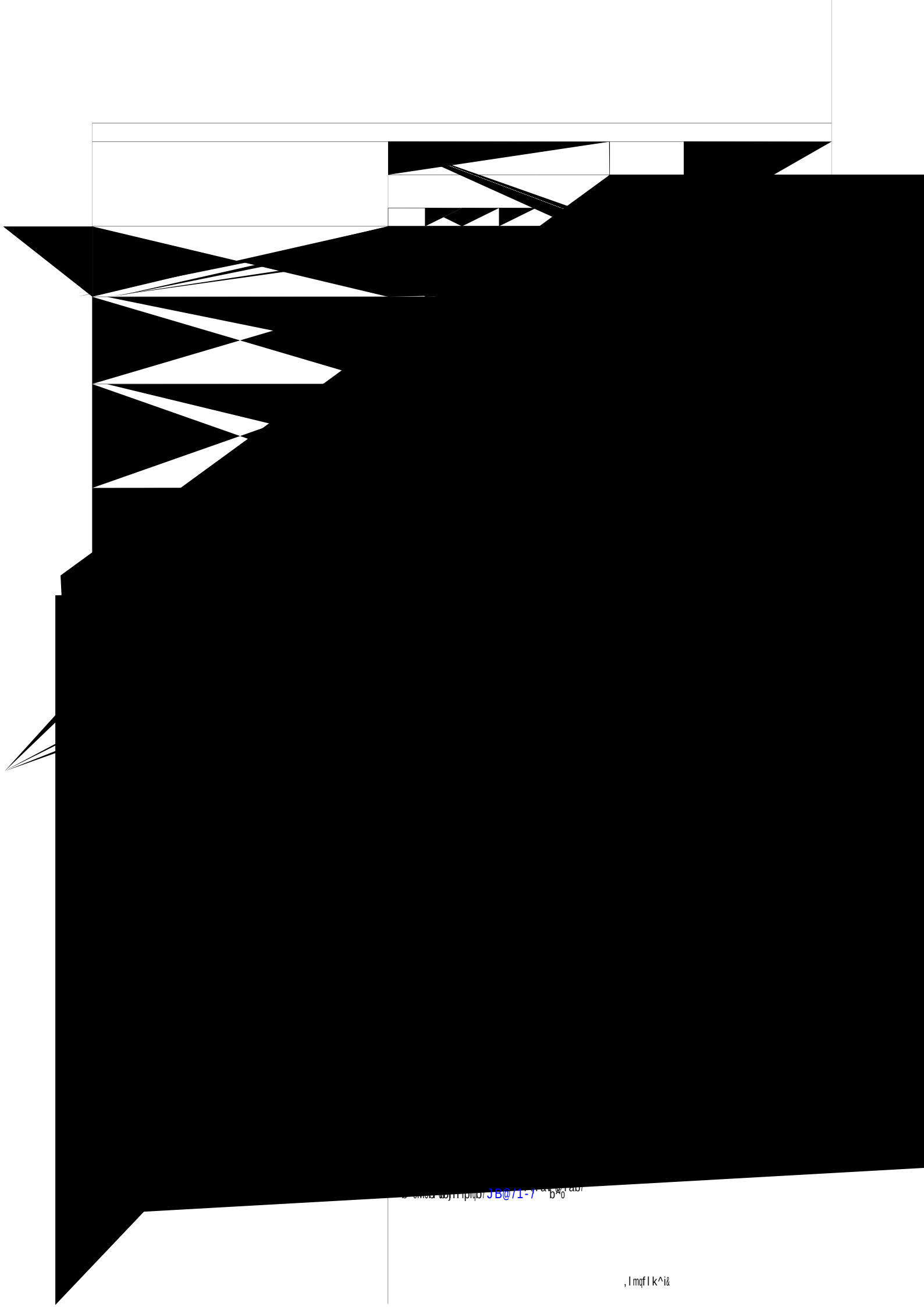
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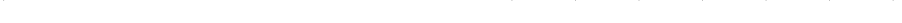


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|--|---|------|-------------------|------|-----------------|------|---|---------------------------|--|
| @l ropb  | Vb^o lc mo ldo^ j ^ka pb j bpqbo fk t ef^ e `l ropb<br>fp klo j ^iiv pqraba |      |                   |      |                 |      | Obpfabkqf^i<br>p^elli<br>%`l j mriplov<br>, lmqf l k^i& | Bkoli j bkq obnrfov j bkq |  |
|  | Lk*^ ^ j mrip<br>%LK@&  |      | Buqbok^i<br>%BUQ& |      | Lkifkb<br>%LKI& |      |   |                           |  |
|  | Vb^o  | Pb j | Vb^o              | Pb j | Vb^o            | Pb j |   |                           |  |
| <b>Electives (Select from the following)</b>                                 |   |      |                   |      |                 |      |   |                           |  |
| >DO00-1 P l fi P`fbk`b   |   |      | .                 |      | .               |      |   |                           |  |
| @fS03-0 @l k p q r `q f l k J b q e l a p                                    |   |      |                   |      | /               |      |   |                           |  |
| BKD1--1 Bkdfkbbfokd Mo l g b `q ^ka L m b o ^q f l k p<br>J^k^db j bkq       |   |      | /0                |      | /0              |      |   |                           |  |
| BKS// - . l^ka P q r a f b p   |   |      | .                 |      | .               |      |   |                           |  |
| BKS1. -4 T^qbo Obp l r o `bp Bkdfkbbfokd                                     |   |      | /                 |      | /               |      |   |                           | Mob*obnrfov j b7 %BKS0. -1 ^ka<br>BKS0. -2& lo Pqrabkq j r p q<br>_b b k o l i i b a f k l k b l c q e b c l i<br>i l t f k d M o l d o ^ j p 7 D @ B K l o<br>J B Q @ l o J B M O l o D @ K P l o<br>D A K P l o J B K P  |
| BKS1/ -1 Bkso l k j bkq^i Qb`ek l i l d v                                    |   |      | .                 |      | .               |      |   |                           | Mob*obnrfov j b7 J>Q. -- lo<br>J>Q. 2-- lo B K J . 3-- lo P<br>q r a b k q j r p q _b b k o l i i b a f k<br>l k b l c q e b c l i i l t f k d M o l d o ^ j<br>p 7 D @ B K l o J B Q @ l o J B K P<br>l o D @ K P l o D A K P l o J P P Q<br>l o J B M O                |
| DfP.1- / D b l d o ^ m e f ` f k c l o j ^q f l k P v p q b j p              |   |      | .                 |      | .0              |      |   |                           |  |
| OBK. / - . Bkso l k j bkq^i P q r a f b p                                    |   |      | .                 |      | .               |      |   |                           |  |
| PSV. . -1 P r o s b v @ l j m r q ^q f l k p >                               |   |      | /                 |      | /               |      |   |                           | Mob*obnrfov j b7 PSV. . - / l o<br>PSV. 2-- lo Pqrabkq j r p q<br>_b b k o l i i b a f k l k b l c q e b c l i<br>i l t f k d M o l d o ^ j p 7 D @ P Q l o<br>D A P Q l o J P M Q   |
| ROM0/ - . P r p q ^f k ^ _j b R o _ ^k A b p f d k ^ka A b s b i l m j b k q |   |      | /                 |      | /               |      |   |                           |  |
| <b>Either</b>  |   |      |                   |      |                 |      |   |                           |  |
| @fS55- / >as^k`ba Mobpqbppba @l k `obqb ;                                    |   |      |                   |      |                 |      | /   |                           |  |
| <b>or</b>  |   |      |                   |      |                 |      |   |                           |  |
| @fS55-0 J b `e^k^p ^ka Qb`ek l i l d v l c C f _ob<br>@l j m l p q b p       |   |      |                   |      |                 |      | .   |                           | Mob*obnrfov j b7 @fS02-3 lo<br>J B @ 0 / - 0 l o P q r a b k q j r p q<br>_b b k o l i i b a f k l k b l c q e b c l i<br>i l t f k d M o l d o ^ j p 7 D @ B K l o<br>M D @ K l o J B Q @ l o J B M O l o<br>D @ K P l o D A K P l o J B K P l o<br>J B K @ l o J > B K |

**Footnotes**

- † The semester 3 offering of this course is offered in odd numbered years only.
- ^ On-campus students should enrol in the external mode.
- \* Students need to enrol in [ENG4909 Work Experience - Professional](#) to record their relevant work experience.
- ‡ The semester 3 offering of this course is offered in even numbered years only.
- > Offered Odd Years Only

**Computer Systems Engineering Major recommended enrolment pattern**

Students are able to enrol in any offered mode of a course (on-campus, external or online), regardless of the program mode of study they enrolled in.

To satisfy the requirements of the program students must complete all of the Academic and Practice courses in the following table that shows the recommended enrolment patterns for on-campus and external students for our Toowoomba campus. Students following a non-standard enrolment pattern should consult the [course specification](#) to ascertain if a course is offered in another term.

All students granted exemption from [ELE1801](#) are strongly advised to purchase the [ELE1801](#) study guide from the [USQ Bookshop](#) and work through this prior to attempting courses for which [ELE1801](#) is an enrolment requirement.

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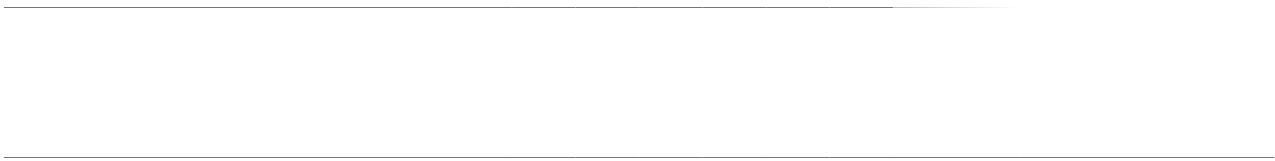
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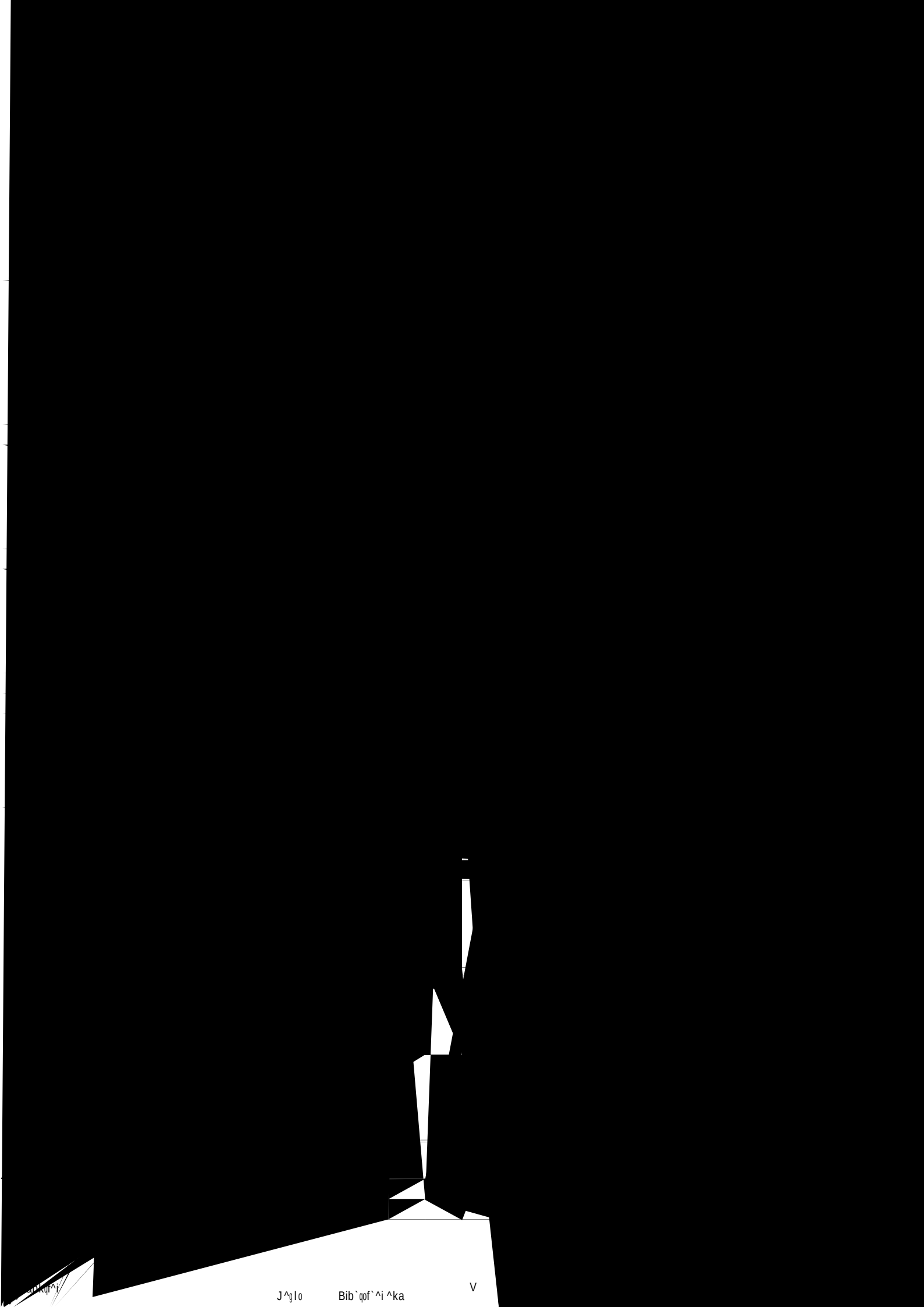
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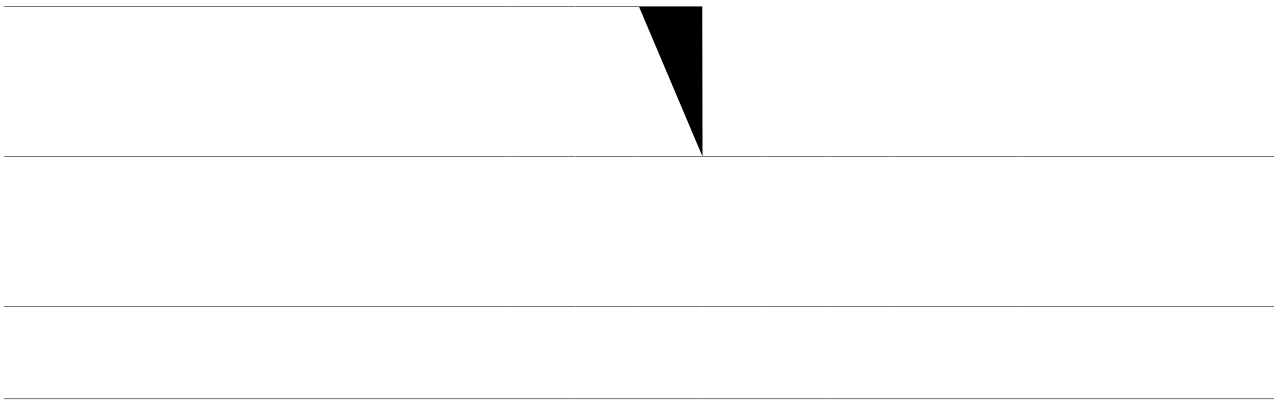
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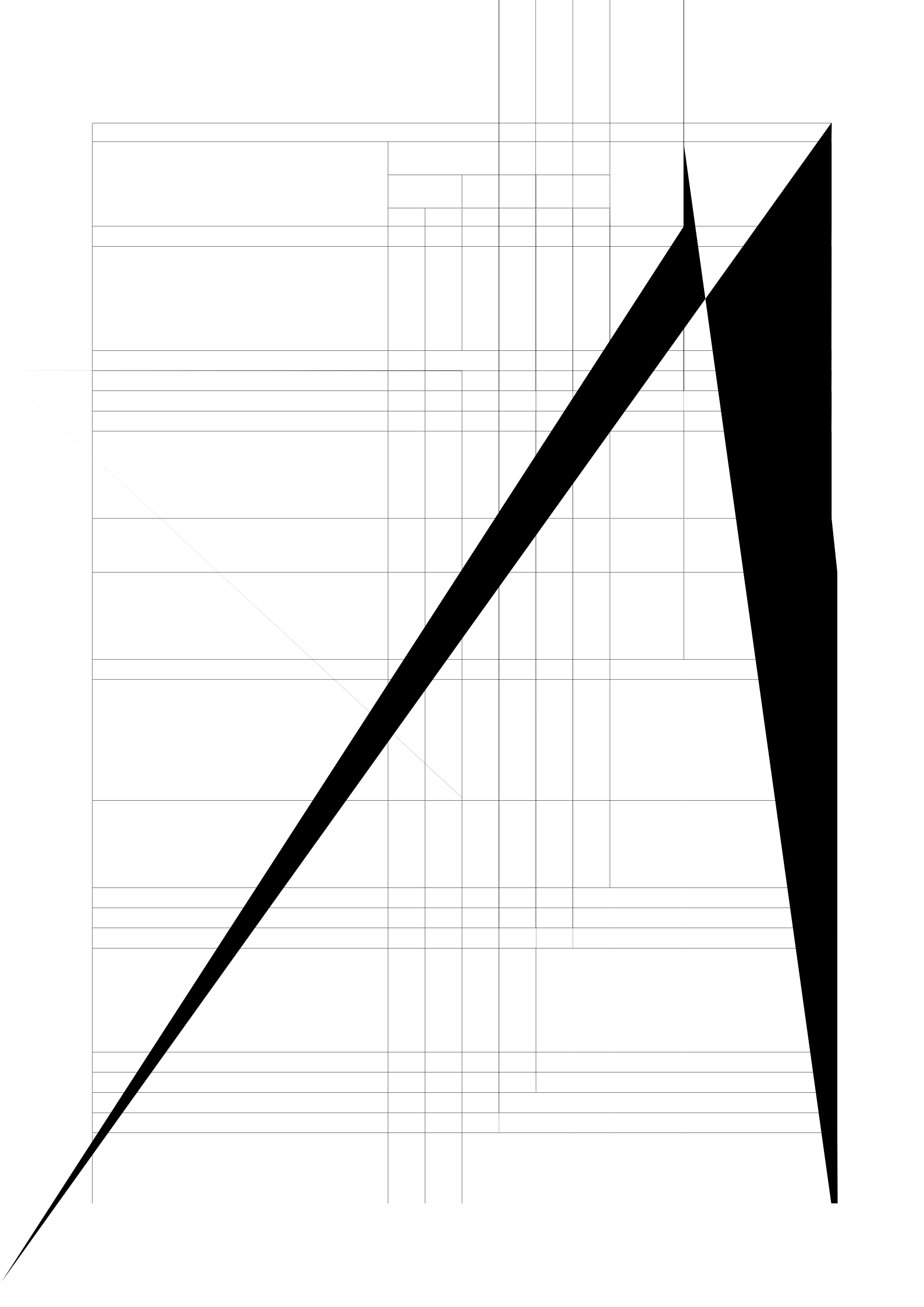












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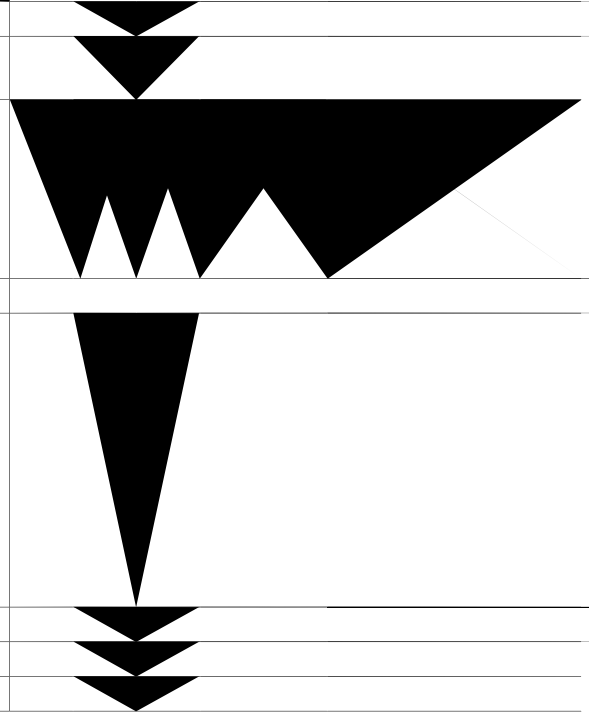
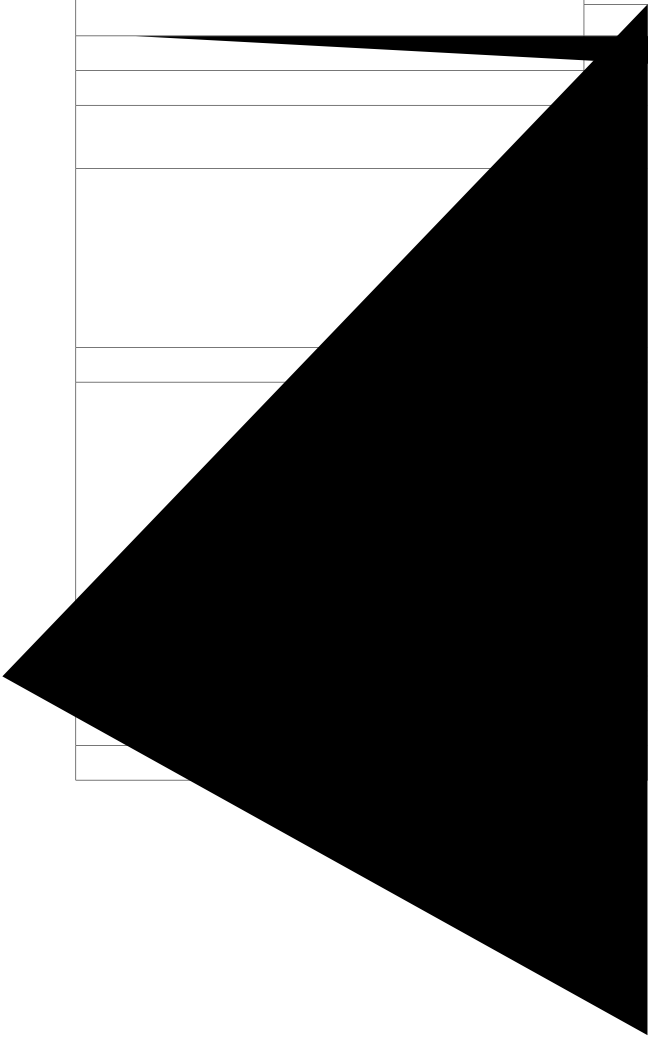
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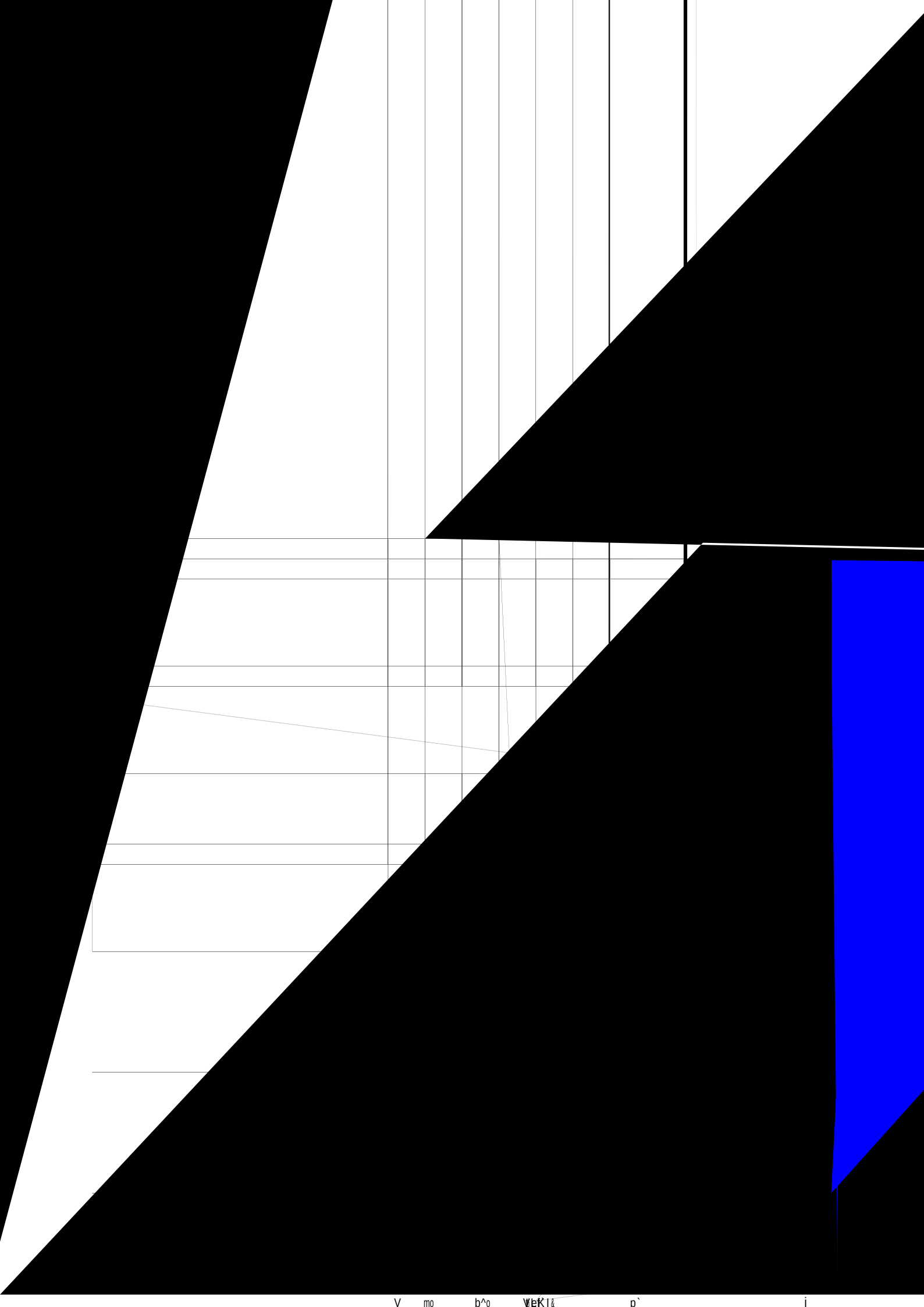


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|--|---|------|-------------------|------|-----------------|------|---|---|
| @l ropb  | Vb^o l c mo l do^ j ^ka pb j bpqbo fk t ef^ e `l ropb<br>fp klo j ^iiv pqraba |      |                   |      |                 |      | Obpfabkqf^i<br>p`elli<br>%`l j mriplov<br>, lmqf l k^i& | Bkoli j bkq obnrfo b j bkq  |
|  | Lk^`^ j m rp<br>%LK@&   |      | Buqbok^i<br>%BUQ& |      | Lkifkb<br>%LKI& |      |   |   |
|  | Vb^o  | Pb j | Vb^o              | Pb j | Vb^o            | Pb j |   |   |
| BKD1--1 Bkdfkbbofkd Mo l qb`q ^ka Lmbo^qf l kp<br>J^k^db j bkq           |   | /0   |                   | /0   |                 |      |   |   |
| BIB00-2 @l j m r qbo Pvpqb j p ^ka @l j j r kf^`qf l kp<br>Mo l q l` lip |   | .    |                   | .    |                 |      |   |   |
| BIB02-3 Bib`qo l kf` Jb^`prob j bkq                                      |   | /    |                   | /    |                 |      |   | Mob*obnrftqb7 %BIB.2- / ^ka<br>%BIB/ .-. lo BIB/ .-0& ^ka<br>%BIB/2-0 lo BIB/2-1&& lo<br>Pqrabkq j rpq_b bko liiba fk<br>l kb l c qeb cl iil t fkd Mo l do^ j<br>p7 D@BK lo JBQ@ lo JBMO<br>lo JBKP |
| JB@/ .-. Qebo j lavk^ j f`p  |   | .    |                   | .    |                 |      |   |   |
| JB@0.- / Cirfa Jb`e^kf`p   |   | .    |                   | .    |                 |      |   | Mob*obnrftqb7 %J>Q/2-- lo<br>BKJ/3--& ^ka JB@/ .-. & lo<br>Pqrabkq j rpq_b bko liiba fk<br>l kb l c qeb cl iil t fkd Mo l do^ j<br>p7 D@BK lo JBQ@ lo JBMO<br>lo D@KP lo DAKP lo JBKP               |
| JB@0/ -0 J^qbof^ip Qb`ek li l dv   |   | .    |                   | .    |                 |      |   | Mob*obnrftqb7 JB@/ .-. lo<br>Pqrabkq j rpq_b bko liiba fk<br>l kb l c qeb cl iil t fkd Mo l do^ j<br>p7 D@BK lo JBQ@ lo D@KP<br>lo DAKP lo JBMO lo JBKP   |
| JB@0/ -1 Mo lar`qf l k Bkdfkbbofkd                                       |   | /    |                   | /    |                 |      |   |   |
| JB@01-0 Avk^ j f`p #   |   | /    |                   | /    |                 |      |   | Mob*obnrftqb7 %JB@/1-. ^ka<br>%J>Q/2-- lo BKJ/3--&& lo<br>Pqrabkq j rpq_b bko liiba fk<br>l kb l c qeb cl iil t fkd Mo l do^ j<br>p7 D@BK lo JBQ@ lo JBMO<br>lo D@KP lo DAKP lo JBKP                |
| JB@1.-1 Bkbodv Qb`ek li l dv   |   | .    |                   | .    |                 |      |   | Mob*obnrftqb7 %JB@/ .-.<br>^ka JB@0.- /& lo JB@/ .-3&<br>lo Pqrabkq j rpq_b bko liiba<br>fk l kb l c qeb cl iil t fkd Mo l<br>do^ j p7 D@BK lo JBQ@ lo<br>JBKP                                      |

**Footnotes**

- † The semester 3 offering of this course is offered in odd numbered years only.
- # On-campus students should not be confused by the recommended pre/co-requisites for this course and should enrol in Year 1 Semester 1. This Practice course, comprising a number of modules, is undertaken throughout the program. These modules will be undertaken in combination with the relevant academic course work in the prescribed semester.
- ^ On-campus students should enrol in the external mode.
- \* Students need to enrol in [ENG4909 Work Experience - Professional](#) to record their relevant work experience.
- ‡ The semester 3 offering of this course is offered in even numbered years only.

**Power Engineering Major recommended enrolment pattern**

Students are able to enrol in any offered mode of a course (on-campus, external or online), regardless of the program mode of study they enrolled in.

Students who have been granted an exemption from [ELE1801 Electrical Technology](#) are strongly advised to purchase the [ELE1801](#) study guide from the [USQ Bookshop](#) and work through this prior to attempting courses for which [ELE1801](#) is an enrolment requirement.

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