

Division of Information and Communication Sciences

Discipline Profile – Electronics

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The work of academics in Electronics is divided between the three roles of Scholarship and Research, Teaching and Postgraduate Supervision, and Administration. It is normal to conduct one of these as a secondary role and devote more time to one or both of the others.

1 Scholarship and Research

1.1 Workload

All academics in Electronics are expected to devote at least 15% of their time (3 days per month) to scholarship that maintains a current working knowledge.

Research active academics are expected to additional time, to the pursuit of research. Typically, the fraction of time that should be devoted to this (in addition to 15% for scholarship) by:

- Associate Lecturers or Lecturers is up to 25% (5 days per month)
- Senior Lecturers is up to 30% (6 days per month)
- Associate Professors is up to 50% (10 days per month)
- Professors is up to 55% (11 days per month)

An academic's research obligation is reflected in their workload model. A scholarship plus research fraction (15 + 25% nominal) is applied if active research is conducted and the highest fraction is reserved for

- Associate Lecturers with research experience and with a willingness to be involved in the Electronics research program,
- Lecturers conducting funded research,
- Senior Lecturers conducting externally funded research, and
- Associate Professors and Professors supervising a medium to large research group.

The total scholarship plus research fraction may be higher, up to no more than 70%, if Scholarship and Research is the agreed principal role, or lower, down to 15% scholarship only, if teaching or administration is the agreed principal role.

1.2 Qualification

- Associate Lecturers are expected to have a Bachelor degree with first-class or second-class honours or a Masters degree in Electronics or in related interdisciplinary fields.
- Lecturers are expected to have a PhD and, frequently, postdoctoral research or industrial experience in Electronics. A candidate with outstanding potential and a demonstrated capacity to manage their postgraduate research may be appointed on the condition of acceptance of a submitted PhD thesis.
- Senior Lecturers are expected to have a PhD and more extensive research experience in Electronics than the postdoctoral research or industrial experience expected of a Lecturer.
- Associate Professors are expected to have international recognition of research work, a good publication record, and a history of teaching innovation.
- Professors are expected to have demonstrated distinction, nationally and internationally, in research and scholarship, and a history of teaching innovation.

1.1.1 Continuing Scholarship

Academics in Electronics are expected to maintain a current working knowledge of technology and practices in Electronics teaching and research. This may be part of the Academic's research activity.

1.3 Research

Research involves experimental or theoretical work in Electronics or in interdisciplinary fields in which these activities play an important part. No distinction is made between strategic and basic research, as the Department objective is to provide a mix of these.

1.1.2 Research Reputation

Research active academics are expected to have and develop a reputation in their field of research at a:

- Local level for Associate Lecturers
- Local or national level for Lecturers
- National level for Senior Lecturers
- International level for Associate Professors and Professors

A measure of recognition of a researcher is requests to referee papers for major journals.

Measures of local or national recognition are invitations to specialist meetings and requests to speak at other institutions.

Measures of national or international recognition include invitations to specialist meetings, requests to speak at other institutions, and demand for visitors to work with them.

1.1.3 Collaboration

Academics in Electronics should be involved in consultation, collaboration or provision of services, whether remunerated or not, with outside bodies. This is considered important and may in some circumstances be regarded as equivalent to publication when there are commercial restrictions on release of research results.

- Associate Lecturers are encouraged, if interested, to participate in collaboration. Appointees to Associate Lecturer are not expected have any background in this area, however.
- Lecturers are regarded highly if they have experience in collaboration.
- Senior Lecturers are expected to participate in collaboration.
- Associate Professors are expected to have a history of participation and continue to participate in collaboration that provides evidence of an ability to attract funding and possibly the development of new collaborative projects within Electronics.
- Professors are expected have an extensive history of participation and continue to participate in collaboration that provides evidence of an ability to attract funding and develop new collaborative projects within Electronics.

1.1.4 New Areas

The acquisition of expertise in new areas may be as important as the preparation of research papers. There is a real distinction between papers that develop themes in existing lines of work, however technically difficult, and those that are genuinely novel. Acquisition of expertise in new areas is:

- Encouraged, for those willing, but not expected of Associate Lecturers
- Normally not expected of Lecturers
- Not necessarily expected of Senior Lecturers
- Expected of Associate Professors and Professors

It is expected that a recently graduated candidate would continue research work based on their thesis and that work be attempted in new, possibly related, areas of research.

Usually only Associate Professors and Professors establish major new research areas.

1.4 Funding

The ability to attract competitive grants, contracts and other outside funding is a positive indicator. However, it is recognized that the availability of funds for specific activities varies widely.

- Associate Lecturers are encouraged, if interested, to seek, but are not expected to have attracted, funding for research.
- Lecturers are expected to attempt to seek funding for research.
- Senior Lecturers are expected to attract funding for research.
- Associate Professors and Professors are expected to have and continue to attract funding for research.

There is a real distinction between the quantity and the quality of funds awarded. A nominal award in a novel area might be more prestigious than substantial payments for more routine work, for example. In current circumstances success in gaining ARC Discovery Grants is a strong indication of merit. Lack of success is not necessarily a negative indicator, however.

1.5 Publication

The proceedings of major conferences are often refereed and published in journals of similar standing. Joint authorship is common in Electronics. Often, academic staff, and frequently postgraduate students, co-author papers when there has been a joint research effort. Typically, author order in Electronics gives an indication of the level of contribution and so may be used as a guide to the relative contribution level of the academic.

Little distinction is to be made between the value of letters and papers, or weight placed on the length of papers. A long paper may be a significant and major compilation, or it may not. A short paper may be a succinct description of an important finding, or the bare minimum of publishable material. Expert assessment is the only acceptable criterion for the quality of published work.

1.1.5 Rate

Academics in Electronics pursuing active research are expected to publish their work, most usually in refereed international journals or presented at conferences. Refereed papers where the academic is a major contributor to the work might be expected at an average rate of:

- Up to one per year for Associate Lecturers
- Two per year, initially arising from continuation of thesis work, for Lecturers
- Three per year, with a few attracting international attention, for Senior Lecturers
- Three per year for Associate Professors
- Four per year for Professors

1.1.6 Volume

Worthy appointees to an academic position will have published a reasonable number of papers.

- Appointees to Associate Lecturer will not be expected to have a publication record. However, one related to Electronics would be considered highly.
- Appointees to Lecturer should have two published papers arising from their thesis.
- Appointees to a position of Senior Lecturer in Electronics should have published at least eight papers during their term as a Lecturer.
- Appointees to Associate Professor should have published at least twenty papers of which ten or more would have been during their term as a Senior Lecturer. Having over thirty published papers would be considered highly.
- Appointees to Professor will have published at least thirty-five papers of which twelve or more would have been during their term as an Associate Professor. Having over forty refereed papers

would be considered highly. Professors leading large research groups would be involved in a large number of publications.

2 Teaching and Postgraduate Supervision

Academics in Electronics are expected to prepare and deliver material for the department's teaching units. Time allocated to this includes associated marking, examining and unit coordination.

2.1 Workload

An academic's teaching obligation is reflected in their workload model. A teaching fraction is reduced, to no less than 15%, only if research or administration is the agreed principal role, or increased, to no more than 70%, if teaching is the agreed principal role.

The fraction of time that would normally be devoted to teaching by:

- Associate Lecturers is 40% to 60% (8 to 11 days per month), which typically includes 8 to 11 hours of contact per term week, say 0 to 1 hours of lectures, 5 to 8 hours of tutorials and 10 to 15 hours of laboratory supervision
- Lecturers is 35% to 45% (7 to 9 days per month), which typically includes 7 to 9 hours of contact per term week, say 3 to 5 hours of lectures, 2 hours of tutorials and 6 hours of laboratory supervision
- Senior Lecturers is 35% to 50% (7 to 10 days per month), which typically includes 7 to 10 hours of contact per term week, say 3 to 5 hours of lectures, 2 hours of tutorials and 6 hours of laboratory supervision
- Associate Professors is 15% to 45% (3 to 9 days per month), which typically includes 3 to 9 hours of contact per term week, say 1 to 3 hours of lectures, 2 hours of tutorials and 3 hours of laboratory supervision
- Professors is 15% to 30% (3 to 6 days per month), which typically includes 3 to 6 hours of contact per term week, say 1 to 3 hours of lectures, 1 hour of tutorials and up to 3 hours of laboratory supervision

Fewer hours are expected from highly productive researchers or senior administrators.

A minimum expectation of Associate Professors is participation in the delivery of 400-level and postgraduate teaching.

A minimum expectation of Professors is participation in the delivery of specialized 400-level blocks and postgraduate teaching.

2.2 Breadth

Narrow specialisation in research must not impinge unfavourably on a broader grasp of the discipline.

- Associate Lecturers are expected to tutor readily in any undergraduate unit with the possible exception of some specialist material above 200 level. The ability to tutor in all undergraduate courses would be viewed favourably.
- Lecturers and Senior Lecturers are expected to be able to lecture readily in any undergraduate unit with the possible exception of some specialist material above 200 level.
- Associate Professors are expected to be able to lecture readily in any undergraduate unit with the possible exception of some specialist material above 300 level.
- Professors are expected to be able to lecture readily in any undergraduate unit including some specialist material above 300 level.

2.3 Supervision

Academics in Electronics are expected to have joint authorship on the publications of students they supervise and have worked closely with. Postgraduate work typically leads to publication of some results towards the end of the period of candidature.

- Associate Lecturers are expected to be both able and willing to supervise final-year projects conducted by undergraduate students. They may be required to provide assistance to other academic staff in the supervision of Honours projects.
- Lecturers are expected to be both able and willing to supervise postgraduate work, including the thesis component of Honours programs.
- Senior Lecturers are expected to be both able and willing to supervise postgraduate work, including the thesis component of Honours programs. Failure to attract postgraduate research students should not necessarily jeopardise applications for promotion to Senior Lecturer whilst success in attracting them should be viewed favourably.
- Associate Professors in Electronics are expected to be both able and willing to supervise postgraduate work, including the thesis component of Honours programs. An Associate Professor is also expected to attract postgraduate research students to their areas of research.
- Professors in Electronics are expected to be both able and willing to supervise postgraduate work, including the thesis component of Honours programs. A Professor is also expected to have successfully completed PhD students, and to continue to attract postgraduate research students to their areas of research.

2.4 Experience

Academics in Electronics are expected to have developed effective teaching techniques at a personal level and have excellent verbal and communication skills. Poor verbal expression and poor communication skills are not acceptable in any position that will largely involve contact with students.

Over time, it is also expected that

- Lecturers have lectured for a few of the undergraduate units offered,
- Senior Lecturers have been Lecturer-in-Charge for a few and lectured for many of the undergraduate units offered, and that
- Associate Professors and Professors have been Lecturer-in-Charge for many of the undergraduate units offered.

These expectations will generally not have been the case for most seeking promotion to the next level but a potential to do so is a significant consideration.

2.5 Course Development

- Associate Lecturers are expected to assist more senior academic staff in the development of course material, teaching aids and administrative systems for the development of existing units and the introduction of new ones. They will also be expected to prepare promotional material and may be asked to address potential students about the course.
- Lecturers are expected to be involved in both the development of existing units and the introduction of new ones.
- Senior Lecturers are expected to be involved in both the development of existing units and the introduction of new ones. Worthy appointees to a position of Senior Lecturer have demonstrated the potential to undertake teaching developments associated with revision of existing units, or establishing new ones.
- Associate Professors are expected to be involved in major initiatives including the restructuring of courses, degree programs, and in the development of existing units and the introduction of new ones. Worthy appointees to a position of Associate Professor have successfully undertaken teaching developments associated with revision of existing units, or establishing new ones.
- Professors are expected to be involved in setting strategic direction including the restructuring of courses, degree programs, and in the development of existing units and the introduction of new ones. Worthy appointees to a position of Professor have successfully undertaken teaching developments associated with revision or design of degree programs.

2.6 Teaching Roles

- Associate Lecturers may occasionally be a guest lecturer for undergraduate course units and undertake the administration associated with that unit.
- Lecturers may occasionally be the Lecturer-in-Charge of undergraduate course units and undertake the administration associated with that unit including supervision of assessment and grading.
- Senior Lecturers, Associate Professors, and Professors will generally fill the role of Lecturer-in-Charge of undergraduate course units and undertake the administration associated with those units including supervision of assessment and grading. Worthy appointees to Senior Lecturer are expected to at least demonstrate the potential to do so.

It is expected that Associate Professors and Professors are able to undertake responsibility for the overall management of the academic staff and the organisation of the course units.

3 Administration

3.1 Workload

Administration obligations are reflected in the academic workload model. The total administration fraction is reduced, to no less than 15%, in the model only if research or teaching is the agreed principal role, or increased, to no more than 70%, if administration is the agreed principal role. The latter would be for activities outside the regular duties of teaching, research and scholarship that may be both demanding of the individual and of substantial benefit to the department. Some would be considered legitimate alternatives to more formal contributions — development of administrative systems for example.

1.1.7 General Administration

Academics in Electronics are expected to perform work involving the general administration of the Department, attending seminars, and participating in promotional and advising activities (open and advising days). The fraction of time that should be devoted to this for

- Associate Lecturers is 15% (3 days per month),
- Lecturers and Senior Lecturers is approximately 15% (3 to 4 days per month), and for
- Associate Professors and Professors is 15% to 20% (3 to 4 days per month).

1.1.8 Service on Committees

Academics are expected to serve on committees and perform other duties.

- Associate Lecturers are expected to devote 5% (1 day per month) of their time on administrative duties under the direction of more senior academic staff.
- Lecturers are expected to devote 5% (1 day per month) of their time to serve on committees of the Department or of The Division.
- Senior Lecturers are expected to devote 5% (1 day per month) of their time to serve on committees of the Division or of the University.
- Associate Professors are expected to devote 5% to 10% (1 to 2 days per month) of their time to serve on committees of the Division or of the University.
- Professors to devote 5% to 20% (1 to 4 days per month) of their time to serve on committees of the Division, of the University, or of the profession.

3.2 Advice and Assistance

Senior Lecturers, by their presence in the Department, Associate Professors, by their presence in the Division, and Professors, by their presence in the Division and the University, are expected to be

available to provide advice or assistance and answer questions in relation to their academic, scholastic and administrative services.

3.3 *Occupational Health and Safety*

Academics are expected to ensure their safety and that of other staff, students and visitors. They are obligated to be aware of and cooperate with University and Division Occupational Health and Safety policy and procedures.

Academics are required to assist in managing risks to staff, students and visitors, particularly related to teaching and research experimental work. This includes exercising an authority to evict persons acting in an unsafe manner from classrooms and laboratories.

Academics are responsible for management of risks to research staff and students they supervise and visitors they host. This includes identifying and providing safety training, and monitoring compliance with safety requirements.

Leaders of research groups are required to ensure that health and safety hazards are identified and managed within the group, and that necessary training in hazard identification and risk management is provided.