UNIVERSITY OF WOLLONGONG

POSITION DESCRIPTION
Academic Positions
(In addition to the Position Classification Standards)

Position Title:	Lecturer/Senior Lecturer in Machine Dynamics and Mechanisms
Level:	B/C
Faculty/Division:	Engineering and Information Sciences
Department/Location:	School of Mechanical, Materials and Mechatronic Engineering

Primary Purpose of the Position:

The successful candidate will play a key role in strengthening the research and teaching of the School of Mechanical, Materials and Mechatronic Engineering in the fields of machine dynamics and mechanisms. Research expertise coupled with any of the following sub-fields is highly preferred, but not mandatory: engineering design, optimisation and manufacturing, automotive engineering, dynamic systems, mechanical vibrations, MEMS, biomechanics, thermo-fluid science, bio-instrumentation, mechatronics and control, and medical robotics and devices. The successful candidate is expected to teach at all levels of the curriculum including the team-taught introductory engineering subjects and specialised subjects on machine dynamics, mechanisms, machine design, automotive dynamics, engineering mechanics, emerging manufacturing technologies and similar, depending on the expertise of a successful candidate.

The successful candidate will be expected to establish a vigorous research program that *complements* and enhances the extensive interdisciplinary engineering network at the University of Wollongong, particularly in the areas of smart materials and structures, robotics and advanced manufacturing, bulk materials handling technologies, renewable and sustainable energy systems, mechanics of materials, advanced materials for novel device concepts, innovative fabrication methodologies, and tribology. We are seeking an individual who will be the thought leader of their research field.

Position Environment:

The School of Mechanical, Materials and Mechatronic Engineering, which is one of the top 10 Engineering Schools in Australia, is committed to research and teaching excellence through its world-class undergraduate and postgraduate programs in a range of exciting technological areas.

Our teaching programs are designed to provide undergraduate and postgraduate students with up to date and high quality training in both the foundations of engineering science and the application of the latest techniques and practices used throughout industry. We pride ourselves on giving our students a comprehensive education program that is not only relevant to the needs of both industry and the engineering profession with an international focus, but also provides them with lifelong learning attributes for a wide range of careers.

One of the strengths of the School is the high number of collaborative links with industries within our local region and also nationally and internationally. As a result, we have an extremely strong track record in developing collaborative research programs with industry and in attracting competitive grants from governmental and industrial sources. The research strengths of our school received the research ranking of "above world standard" in the recent Australian Research Council (ARC) ERA (Excellence in Research for Australia) initiative. Our research ranking of "well above world standard" in "Interdisciplinary Engineering" is also worth mentioning.

Currently we have a number of significant research programs and projects associated with the Faculty of Engineering and Information Sciences including: ARC Industrial Transformations Research Hub-- Australian Manufacturing Research Hub ($5m); the Intelligent Polymer Research Institute (and associated ARC Centre of Excellence in Electromaterials Science); Institute for Superconducting and Electronic Materials (ISEM); the SMART Infrastructure Research Facility (>$50m); the Energy Pipelines Cooperative Research Centre (EPCRC) $17m; the Retrofitting for Resilient and Sustainable Buildings (RRSB) $25m; the Defence Materials Research Centre (DMTC) and many other exciting fundamental, applied and commercial research projects.

The successful candidate will benefit the funding and research networking opportunities provided by the UOW Global Challenges Program which is a significant new investment by the university in inter-disciplinary research addressing major world problems. The Global Challenges Program is UOW's primary strategic research investment, initially funded from 2013-2018, and has the specific aim to bring together researchers from a diverse range of disciplines. The researchers are encouraged to work together and exchange knowledge and skills, via collaborative projects and workshops, to address a significant real-world problem. The successful candidate is expected to be part of the Global Challenges: Manufacturing Innovation, which aims to reposition the Illawarra as a place of creative industrial innovation and experimentation.

Major Accountabilities/Responsibilities:

Responsibilities		Outcome	Office Use Only
1.	Teach at all levels of the curriculum including the team-taught introductory engineering subjects and specialised subjects to a high standard as assigned by the Head of School	Completion of assigned teaching duties to a high standard as assessed by peer review, student surveys and other performance review systems.	
2.	Contribute to the development of research activity and research outcomes in an appropriate area of machine dynamics and mechanisms, and their possible application to medical devices and assistive technologies, automotive engineering, advanced manufacturing and robotics, industrial, civil, and consumer products, energy harvesting, novel bio-inspired device concepts and similar.	Improved UOW research outcomes and reputation. Attraction of research students to UOW to study.	
3.	Collaborate strongly with various industry partners and research centres within and outside the School.	Secure substantial national competitive grant funding and commercial research funding to support research activities.	
4.	Supervise Higher Degree Research Students	Successful completions of PhD and Masters by research students.	
6.	Administrative duties as specified by the Head of School	On-time completion of assigned tasks to an acceptable standard	
7.	Observe principles and practices of Equal Employment Opportunity	To ensure fair treatment in the workplace	
8.	Have WH&S responsibilities, accountabilities and authorities as outlined in the OHS Roles and Responsibilities Document	To ensure a safe working environment for self & others.	

Inherent Requirements:

This position description outlines the major accountabilities/responsibilities and the selection criteria against which you will be assessed as suitable for the position. As such there will be specific job requirements that we refer to as Inherent Requirements.

Inherent Requirements refer to your ability to:

- Perform the essential duties and functional requirements of the job;
- Meet the productivity and quality requirements of the position;
- Work effectively in the team or other type of work organisation concerned; and
- Do the job without undue risk to your own or others health, safety and welfare at work.

If you have any injuries, illness, disorder, impairment, condition or incapacity that may affect your ability to perform the inherent requirements of the position, we encourage you to discuss this with the University to assist in the process of identifying reasonable adjustments to enable you to perform the duties of the position. The University wants to place you in the best situation to use your skills effectively in the position you are applying for at the University.

Reporting Relationships:

Position Reports to:	Head of School
The position supervises the following positions:	
Other Key Contacts:	School Discipline (Mechanical, Materials and Mechatronic) Advisors

Key Relationships:

Contact/Organisation:	Purpose & Frequency of contact
Administrative staff within and outside the faculty	Course administration/Student matters/ Research support
Cross-faculty relationships	Liaison involving cross faculty activities generally and teaching specifically.
School/Faculty committees	Course and subject administration

Key Challenges:

1. To be a world class teacher and to secure good learning outcomes for all students. This will involve delivery of subjects/programs that provide a strong link to both theory and practical application and provide students with strong motivation and interest.
2. To secure national competitive grants (eg. ARC Discovery and Linkage Grants)
3. To maintain a high level of research productivity with large numbers of publications in high impact factor journals.
4. To help maintain an enthusiastic and productive collegial environment.

SELECTION CRITERIA - Knowledge & Skills:

Essential:

- Capability to teach subjects at all levels of the curriculum including the team-taught introductory engineering subjects and specialised subjects in machine dynamics, mechanisms, machine design, automotive dynamics, engineering mechanics, emerging manufacturing technologies and similar, depending on the expertise of a successful candidate.
- Ability to teach large classes.
- High quality research experience and capability in machine dynamics and mechanisms, and their possible application to any or some of these: medical devices and assistive technologies, automotive engineering, advanced manufacturing and robotics, industrial, civil, and consumer products, sensors, actuators, energy harvesting, novel bio-inspired device concepts and similar that *complement* research activities in the School of Mechanical, Materials and Mechatronic Engineering, and in the interdisciplinary engineering network at the University of Wollongong.
- Ability to supervise undergraduate and postgraduate research students.
- A strong track record of publications relative to opportunity.
- Ability to win external competitive research grants (such as ARC grants).

Desirable

- Ability to research and teach in topics involving engineering design, optimisation and manufacturing, automotive engineering, dynamic systems, biomechanics, thermo-science, instrumentation, mechatronics and control, and medical robotics and devices.
- Leadership in curriculum development.

SELECTION CRITERIA - Education & Experience:

Essential:

- PhD in an appropriate area of Mechanical Engineering or Mechatronic Engineering.
- Demonstrated teaching and research experience.

Desirable

- Industrial experience or substantial engagement with industry (eg through academic/commercial research) in an area related to Inter-disciplinary Engineering.
- Documentary evidence (such as formal teaching evaluations) to demonstrate candidate's capability to teach to a high standard.

Personal Attributes:

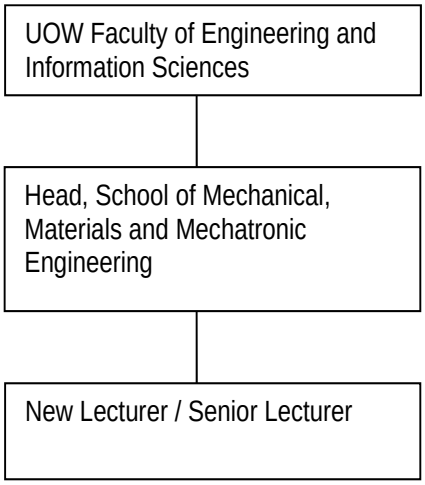
Essential:

- Team player
- Excellent time management skills
- Excellent interpersonal skills
- Excellent communication skills
- Flexibility and adaptability in a wide range of teaching requirements
- Understanding of international student needs
- Capacity to develop links with professional networks and the industrial community

Special Job Requirements:

May be required to deliver subjects on flexible learning basis during week-ends and out of normal work hours
Possible delivery of courses on UOW satellite campuses, and overseas on behalf of UOW.
Attendance at international and national conferences

Organisational Chart:



Approval:

Approved by Head of Unit: _____

Date: _____

Approved by Human Resources: _____

Date: _____

POSITION CLASSIFICATION STANDARD - Teaching and Research
Level: B
Title: Lecturer

Description

A position classification standard describes the broad categories of responsibility attached to academic staff at different levels. The standards are not exhaustive of all tasks in academic employment, which is by its nature multi-skilled and involves an overlap of duties between levels. Therefore the standards should not be applied mechanistically. Quality of performance is the principal factor governing level of appointment of individuals, and a broadly-worded skill base is set out for each level.

All levels of academic staff can expect to make a contribution to a diversity of functions within their institutions. Such functions include teaching research participation in professional activities and participation in the academic planning and governance of the institution. The balance of functions will vary according to level and position and over time.

- General Standard
- Specific Duties
- Skill Base

General Standard

A Level B academic is expected to make contributions to the teaching effort of the institution and to carry out activities to maintain and develop her/his scholarly, research and/or professional activities relevant to the profession or discipline.

Specific Duties

Specific duties required of a Level B academic may include

- The conduct of tutorials, practical classes, demonstrations, workshops, student field excursions, clinical sessions and studio sessions.
- Initiation and development of subject material.
- Acting as subject coordinators.
- The preparation and delivery of lectures and seminars.
- Supervision of the program of study of honours students or of postgraduate students engaged in course work.
- Supervision of major honours or postgraduate research projects.
- The conduct of research.
- Involvement in professional activity.
- Development of course material with appropriate advice from and support of more senior staff
- Marking and assessment.
- Consultation with students.
- A range of administrative functions the majority of which are connected with the subjects in which the academic teaches.
- Attendance at departmental and/or faculty meetings and/or membership of a number of committees.

Skill Base

A Level B academic shall have qualifications and/or experience recognised by the institution as appropriate for the relevant discipline area. In many cases a position at this level will require a doctoral or masters qualification or equivalent accreditation and standing. In determining experience relative to qualifications, regard is had to teaching experience, experience in research, experience outside tertiary education, creative achievement, professional contributions and/or to technical achievement.

UNIVERSITY OF WOLLONGONG

POSITION CLASSIFICATION STANDARD - Teaching and Research
Level: C
Title: Senior Lecturer

Description

A position classification standard describes the broad categories of responsibility attached to academic staff at different levels. The standards are not exhaustive of all tasks in academic employment, which is by its nature multi-skilled and involves an overlap of duties between levels. Therefore the standards should not be applied mechanistically. Quality of performance is the principal factor governing level of appointment of individuals, and a broadly-worded skill base is set out for each level.

All levels of academic staff can expect to make a contribution to a diversity of functions within their institutions. Such functions include teaching research participation in professional activities and participation in the academic planning and governance of the institution. The balance of functions will vary according to level and position and over time.

- General Standard
- Specific Duties
- Skill Base

General Standard

A Level C academic is expected to make significant contributions to the teaching effort of a department, school, faculty or other organisational unit or an interdisciplinary area. An academic at this level is also expected to play a major role in scholarship, research and/or professional activities.

Specific Duties

Specific duties required of a Level C academic may include

- The conduct of tutorials, practical classes, demonstrations, workshops, student field excursions, clinical sessions and studio sessions.
- Initiation and development of course material.
- Course co-ordination
- The preparation and delivery of lectures and seminars.
- Supervision of major honours or postgraduate research projects.
- Supervision of the program of study of honours students and of postgraduate students engaged in course work.
- The conduct of research.
- Significant role in major research projects, including, where appropriate, leadership of a research team.
- Involvement in professional activity.
- Consultation with students.
- Broad administrative functions.
- Marking and assessment.
- Attendance at departmental and/or faculty meetings and a major role in planning or committee work.

Skill Base

A Level C academic will normally have advanced qualifications and/or recognised significant experience in the relevant discipline area. A position at this level will normally require a doctoral qualification or equivalent accreditation and standing. In determining experience relative to qualifications, regard shall be had to teaching experience, experience in research, experience outside tertiary education, creative achievement, professional contributions and/or to technical achievement. In addition a position at this level will normally require a record of demonstrable scholarly and professional achievement in the relevant discipline area.