



## Position Description

College/Division:	College of Science
Faculty/School/Centre:	Research School of Astronomy and Astrophysics
Department/Unit:	Advanced Instrumentation and Technology Centre (AITC)
Position Title:	Mechatronics and Project Engineer
Classification:	ANU Officer Grade 5/6 (Engineering)
Position No:	TBC
Responsible to:	Professor Michael Ireland, Pyxis Project Lead
Number of positions that report to this role:	TBC
Delegation(s) Assigned:	NA

### PURPOSE STATEMENT:

The Research School of Astronomy and Astrophysics' (RSAA) Pyxis Interferometer project, and research program requires a high-level engineering team to develop innovative state-of-the-art instrumentation for observing nearby stars, and prototyping technologies that could be launched on nanosatellites. This project involves three 7-axis robots moving in tandem, with a range of complex sensors and also fine positioning actuators. This position will provide technical expertise in support of the program in the area of Project and Mechatronics Engineering.

### KEY ACCOUNTABILITY AREAS:

#### Position Dimension & Relationships:

The Mechatronics and Project Engineer is responsible to the Pyxis Project Lead and provides design, development, validation, and maintenance support for approved RSAA technical projects and activities. A close working relationship is required with engineers in Optical, Mechanical, Electronics, Software, Detector and Systems Engineering as well as the science teams.

#### Role Statement:

Under the general direction of the Pyxis Project Lead, the Mechatronics and Project Engineer will:

- Design and implement optomechanical assemblies, contribute to software that interfaces with the sensors and actuators in these assemblies and implement nested control systems in collaboration with the engineering team.
- Apply body of broad technical knowledge and skills to develop areas of specialist systems skills on complex engineering projects
- Contribute to the development of budgets, effort estimations and schedules for assigned project tasks, and manage tasks with consideration of risks and ensure activities are delivered in a cost effective manner within agreed costs and schedules.
- Comply with Advanced Instrumentation and Technology Centre (AITC) technical management procedures to ensure optimum results for complex, multi-disciplinary instrumentation projects, often within the framework of international consortia.
- Maintain an up to date knowledge of state-of-the-art technology in the field of engineering.
- Apply training and experience to solve engineering problems and design tests to undertake assembly integration and testing of prototype and deliverable hardware.
- Prepare technical documentation and contribute to the preparation of descriptive articles for general publication.
- Maintain a working knowledge both of best-practice engineering procedures in the context of prototype and one-off constructions, and an awareness of relevant state-of-the-art technologies that might be applied to astronomical or space research within the context of AITC engineering management procedures.
- Comply with all ANU policies and procedures, and in particular those relating to work health and safety, and equal opportunity.
- Other duties as required consistent with the classification of this position.

**SELECTION CRITERIA:**

- Graduate qualifications in Science, Engineering or relevant discipline.
- Experience in mechatronics engineering, with low level programming (Arduino and C), mechanical and electrical design all highly desirable.
- Demonstrated experience in complex instrument or aerospace systems design including; requirements development, prototyping, build/manufacture and system validation is highly desirable. Experience in testing of complex systems, preferably in the context of optical /astronomical/space instrumentation and research.
- Demonstrated experience in working in multi-disciplinary team of Engineers.
- Proven level of written communication skills, including the ability to contribute to the preparation of material for publication in technical literature.
- Demonstrated interpersonal and oral communication skills, including the ability to consult, and liaise effectively with a range of stakeholders, customers, industry partners, suppliers and contractors.
- Proven ability to work flexibly, prioritise work to meet conflicting deadlines, and to quickly adapt to new environments including a demonstrated ability to use initiative, apply sound judgement and work with minimum supervision individually and within team environment.
- A demonstrated high level of understanding of equal opportunity (EO) principles and a commitment to the application of EO policies in a university context.

*ANU Officer Levels 5 and 6 are broadbanded in this stream. It is expected that at the higher levels within the broadband occupants, through experience, will have developed skills and expertise enabling them to more independently perform the full range of duties at a higher level, and that more time will be spent on the more complex functions of the position.*

*The ANU conducts background checks on potential employees, and employment in this position is conditional on satisfactory results in accordance with the Background Checking Procedure which sets out the types of checks required by each type of position.*

Supervisor/Delegate Signature:

Date:

Printed Name:

Uni ID:

**References:**

[General Staff Classification Descriptors](#)

[Academic Minimum Standards](#)



# Pre-Employment Work Environment Report

## Position Details

<b>College/Div/Centre</b>	College of Science	<b>Dept/School/Section</b>	Research School of Astronomy and Astrophysics
<b>Position Title</b>	Mechatronic and Project Engineer	<b>Classification</b>	ANU Officer 5/6 (Eng)
<b>Position No.</b>	TBC	<b>Reference No.</b>	

In accordance with the Work Health and Safety Act 2011 (Cth) the University has a primary duty of care, so far as reasonably practicable, to ensure the health and safety of all staff while they are at work in the University.

- This form must be completed by the supervisor of the advertised position and appended to the back of the Position Description.
- This form is used to advise potential applicants of work environment and health and safety hazards prior to application.
- Once an applicant has been selected for the position they must familiarise themselves with the University WHS Management System via Handbook guidance <https://services.anu.edu.au/human-resources/health-safety/whs-management-system-handbook>
- The hazards identified below are of generic nature in relation to the position. It is not correlated directly to training required for the specific staff to be engaged. Identification of individual WHS training needs must be in accordance with WHS Local Training Plan and through the WHS induction programs and Performance Development Review Process.
- 'Regular' hazards identified below must be listed as 'Essential' in the Selection Criteria - see 'Employment Medical Procedures' at [http://info.anu.edu.au/Policies/\\_DHR/Procedures/Employment\\_Medical\\_Procedures.asp](http://info.anu.edu.au/Policies/_DHR/Procedures/Employment_Medical_Procedures.asp)

## Potential Hazards

<ul style="list-style-type: none"> <li>• Please indicate whether the duties associated with appointment will result in exposure to any of the following potential hazards, either as a regular or occasional part of the duties.</li> </ul>					
TASK	regular	occasional	TASK	regular	occasional
key boarding	<input checked="" type="checkbox"/>	<input type="checkbox"/>	laboratory work	<input checked="" type="checkbox"/>	<input type="checkbox"/>
lifting, manual handling	<input type="checkbox"/>	<input checked="" type="checkbox"/>	work at heights	<input type="checkbox"/>	<input type="checkbox"/>
repetitive manual tasks	<input type="checkbox"/>	<input type="checkbox"/>	work in confined spaces	<input type="checkbox"/>	<input type="checkbox"/>
Organizing events	<input type="checkbox"/>	<input type="checkbox"/>	noise / vibration	<input type="checkbox"/>	<input type="checkbox"/>
fieldwork & travel	<input type="checkbox"/>	<input checked="" type="checkbox"/>	electricity	<input type="checkbox"/>	<input checked="" type="checkbox"/>
driving a vehicle	<input type="checkbox"/>	<input checked="" type="checkbox"/>			
<b>NON-IONIZING RADIATION</b>			<b>IONIZING RADIATION</b>		
solar	<input type="checkbox"/>	<input checked="" type="checkbox"/>	gamma, x-rays	<input type="checkbox"/>	<input type="checkbox"/>
ultraviolet	<input type="checkbox"/>	<input checked="" type="checkbox"/>	beta particles	<input type="checkbox"/>	<input type="checkbox"/>
infra red	<input type="checkbox"/>	<input checked="" type="checkbox"/>	nuclear particles	<input type="checkbox"/>	<input type="checkbox"/>
laser	<input checked="" type="checkbox"/>	<input type="checkbox"/>			
radio frequency	<input type="checkbox"/>	<input type="checkbox"/>			
<b>CHEMICALS</b>			<b>BIOLOGICAL MATERIALS</b>		
hazardous substances	<input type="checkbox"/>	<input checked="" type="checkbox"/>	microbiological materials	<input type="checkbox"/>	<input type="checkbox"/>
allergens	<input type="checkbox"/>	<input type="checkbox"/>	potential biological allergens	<input type="checkbox"/>	<input type="checkbox"/>
cytotoxics	<input type="checkbox"/>	<input type="checkbox"/>	laboratory animals or insects	<input type="checkbox"/>	<input type="checkbox"/>
mutagens/teratogens/ carcinogens	<input type="checkbox"/>	<input type="checkbox"/>	clinical specimens, including blood	<input type="checkbox"/>	<input type="checkbox"/>
pesticides / herbicides	<input type="checkbox"/>	<input type="checkbox"/>	genetically-manipulated specimens	<input type="checkbox"/>	<input type="checkbox"/>
			immunisations	<input type="checkbox"/>	<input type="checkbox"/>
OTHER POTENTIAL HAZARDS (please specify):					
<b>Supervisor/Delegate Name:</b>		<i>Professor Michael Ireland</i>		<b>Date:</b>	<i>August 2021</i>