SENIOR RESEARCH ENGINEER

DEPARTMENT/UNIT  Mechanical and Aerospace Engineering

FACULTY/DIVISION  Faculty of Engineering

CLASSIFICATION  HEW Level 7

DESIGNATED CAMPUS OR LOCATION  Clayton campus

ORGANISATIONAL CONTEXT

There’s a certain feeling you get from working at Monash University. It’s the feeling that you’re a part of something special. Something significant. And that’s because you’re not just starting your career, or taking on a bigger challenge. You’re making a real contribution – surrounded by energetic, inspiring people who are driven to make a difference as well. Monash is a place where you’ll be able to develop your career in exciting, sometimes unexpected ways – putting you in the best possible position for a rewarding future. Discover more at www.monash.edu.

The Faculty of Engineering is one of the largest in Australia, renowned worldwide for the quality and calibre of our teaching, research and graduates. We offer a comprehensive range of undergraduate, graduate, postgraduate and higher degree by research programs in a wide range of engineering disciplines. Our research activities provide a platform for establishing a thriving educational enterprise and our staff are committed to creating a dynamic learning environment. The research activities range from fundamental studies to research with a strong applications orientation. To learn more about the Faculty of Engineering, please visit our website: www.monash.edu/engineering.

The Department of Mechanical and Aerospace Engineering aims to educate the next generation of leaders in the profession of mechanical engineering, generate new knowledge and insight into the processes that govern our discipline, and provide service to the community, our profession and industry. We are the largest department within the faculty in terms of student numbers, offering a range of undergraduate and higher degree programs and a strong and ever growing contingent of students working towards a PhD or Master’s Degree. Research is a vital part of the Department’s activities and we are renowned for our expertise and world class facilities. For more information about our Department and the work we do, please visit our website: www.monash.edu/engineering/departments/mechanical.

The Maintenance Technology Institute (MTI) is a commercially orientated, professional research and engineering organisation located at Monash University, which provides focused and comprehensive research and development and high-level technical services for the mining and heavy engineering industries. MTI has been providing professional engineering services to the major mining companies; such as BHP, Rio Tinto, Glencore, Anglo American; since 2000. MTI has also developed Real-Time Monitoring solutions to manage the structural integrity of various mining equipment, with a focus towards improving reliability and productivity. For more information about our institute and the work we do, please visit our www.monash.edu/engineering/mti.

Modified date: June 2022
POSITION PURPOSE

The Senior Research Engineer contributes to the planning, implementation, commissioning and maintenance of remote monitoring systems on heavy engineering equipment in the mining industry. The equipment involved include mobile equipment and fixed plants. Some of the equipment commonly dealt with are: draglines, shovels, drills, large mining trucks, excavators, stackers, stacker reclaimers, ship loaders.

Reporting Line: The position reports to the Team Leader – Business Development & Remote Structural Monitoring Systems of the Maintenance Technology Institute (MTI) under broad direction

Supervisory Responsibilities: On a project needs basis many need to supervise and instruct field technicians and sub-contractors, whilst on site, under the broader direction of the customer management

Financial Delegation: Not applicable

Budgetary Responsibilities: Will have budget responsibilities based on project scope and will have to manage within the overall project budget

KEY RESPONSIBILITIES

1. Manage and coordinate repair, maintenance and installation projects from initiation to final delivery including; scoping project needs and identifying project deliverables, developing plans, schedules, budgets and other supporting documents, reporting on progress and performance against project schedules and performance indicators, and undertaking post-implementation reviews

2. In coordination with the SMS Project Manager, coordinate the implementation of the project deliverables including planning, overseeing and implementing change management strategies associated with project outcomes, and ensure project KPI’s are met for the support, repair and maintenance of SMS systems across the nominated client mine sites

3. Undertake field work to set up and implement data acquisition systems, including installation of various sensors, cabling, terminations and commissioning activities on remote mine sites Perform configuration and commissioning of proprietary software, validate data and system integrity by interpreting field data, troubleshoot system failures and carry out FMEA

4. Setup and implement test environments, procedures and processes for data acquisition systems and participate in the development and delivery of training packages to field staff, sub-contractors & site maintenance personnel this will include development of Standard work procedures and other technical documentation

5. Act as key contact with site staff, maintaining close and clear communication regarding field work, including in relation to planning and scheduling of work, implementation, housekeeping, removal of equipment and closure

6. Take a leading role in developing Risk Assessments and safety procedures in accordance with MTI, Monash and Customer safety policies and expectations

7. Ensure all relevant statutory regulations, site safety requirements and Monash safety requirements are followed while undertaking field work, while ensuring safety and wellbeing of MTI and any other contractor site staff involved in field work, including during travelling for field work

8. Prepare presentations and written reports to customers, as well as preparing project reports for customers and maintaining project records for quality assurance purposes

9. Actively participate in and implement continuous improvement activities relating to data collection, analysis, reporting and presentation, practices/protocols, quality assurance standards and customer service excellence

10. Other duties as directed from time to time
KEY SELECTION CRITERIA

Education/Qualifications

1. The appointee will have:
   - A degree in mechanical or mechatronic engineering with subsequent relevant experience; or
   - an equivalent combination of relevant experience and/or education/training.

Knowledge and Skills

2. Proven technical proficiency and experience within mechanical or mechatronic engineering
3. Advanced knowledge of analog sensor networks
4. Excellent oral and written communication skills, including strong presentation and report writing skills with proven ability to effectively analyse information and produce clear, succinct reports and documents
5. Well-developed organisational and time management skills, including the ability to plan and organise work to meet priorities and deadlines and a proven ability to work independently and be self-driven
6. Proven ability to troubleshoot system failures and carry out FMEA/root cause analysis
7. Ability to work as an effective member of a team and provide effective supervision and on the job training to team members including subcontractors
8. Sound computer literacy, including the ability to learn new software packages, investigate and troubleshoot failures in hardware and software effectively, and a basic understanding of IT systems
9. Analytical and field research skills including the ability to analyse data/trends for strategic modelling, make recommendations and use information to monitor progress and resolve issues
10. Flexibility to undertake travel, field work, and emergency or urgent work to fulfil business and customer needs
11. Sound knowledge and proficiency in the use/application of hand and power tools and field work or mine site practices

OTHER JOB RELATED INFORMATION

- Appointment to the position will be subject to the satisfactory completion of medical assessment(s) in accordance with various mining and statutory legislations
- All personnel during field visits will be subjected to random alcohol and drug screening
- Safety inductions and training will be mandatory in accordance with relevant site requirements
- Travel to remote sites, both interstate and overseas, on short notice will be required, as well as travel to campuses of the University from time to time will be required
- Shift work, overtime and out of hours work may be required (including evenings, weekends and public holidays), for the successful delivery of projects
- During peak periods of work, the taking of leave may be restricted
- Australian Driver’s License is required

GOVERNANCE

Monash University expects staff to appropriately balance risk and reward in a manner that is sustainable to its long-term future, contribute to a culture of honesty and integrity, and provide an environment that is safe, secure and inclusive. Ensure you are aware of and adhere to University policies relevant to the duties undertaken and the values of the University. This is a standard which the University sees as the benchmark for all of its activities in Australia and internationally.