

Maintenance & Reliability Engineering

Off Campus Graduate Education Program

Graduate courses by off campus learning from **Monash University, Australia** in collaboration with the **Maintenance and Reliability Center of The University of Tennessee College of Engineering**

2009 Graduate Program Information and Course Catalog

“Make the Difference in Your Career”

Maintenance & reliability engineering and asset management have become powerful tools in improving industrial profitability.

Demand for skilled professionals and managers with education in advanced technologies and certification in these fields continues to increase.

Since 1985, hundreds of engineers, managers and senior technical people worldwide have increased their skills and capability by completing Monash courses in these fields.



**The University
of Tennessee**



MONASH University



The “Hill” at The University of Tennessee



Gippsland Campus of Monash University

About The University of Tennessee and The Maintenance and Reliability Center

The University of Tennessee has a proud heritage forged over more than 200 years of dedicated, imaginative educating. A land grant institution, the university has always had a special affinity to working with industry and the community.

The Maintenance and Reliability Center is a university - industry association dedicated to improving industrial productivity, efficiency, safety and profitability through advanced maintenance and reliability technologies and management principles.



About Monash University

As Australia's largest university, Monash is a firmly established and well-recognized institution. The Monash University undergraduate programs are accredited by the Institution of Engineers, Australia in a manner similar to the USA's ABET accreditation procedures. As with USA universities, Monash's internal quality control processes then govern their graduate programs. *Visit Monash University's web site at www.monash.edu.au for more information.*

Monash has extensive experience in teaching by the off campus learning mode from its Gippsland Campus, 100 miles east from Melbourne. Monash has developed a global view, establishing campuses in Malaysia and South Africa, and having Centers in England and Italy.

Beginning with the 2000 school year, Monash University and the University of Tennessee began collaborating in an academic graduate education program via off campus learning in North America.

About Off Campus Learning

Monash University is among Australia's leading off campus educators, providing study materials that enable effective study at home, at work, or on the road. Study materials are paper-based with web-enhanced delivery. At any time, there are several thousand students studying a wide range of courses through off campus learning from Monash, with 30% of these outside Australia.

Instructors are Monash University faculty and other engineers, all experienced in their field. They can be contacted by telephone, fax, or by e-mail. Assessments and exams vary among courses, and are a mixture of assignments (two to four typically) and exams (some mid-semester, some end-of-semester). Assignments are normally submitted by e-mail and arrangements are normally made to take exams near students' homes throughout North America.



The Certificates and Degrees in these programs are all conferred by Monash University—not The University of Tennessee

Credits are normally transferable to other institutions, although each institution reserves the right to make that judgment and limit the total amount of credits transferred.

Our Track Record -- Years Of Success

Since 1985, several hundred graduates have completed these courses. They come from a wide range of industries and businesses such as mining, chemicals, paper, cement, metals, transportation, power, petroleum, water, hospitals, commercial, government, military and consulting.

Since this program began in North America in 2000, the number of enrollees and the number of classes taken has continued to grow.

About The Programs (Courses of Study)

Entry into any of the Courses of Study requires the applicant to hold a four-year degree in Engineering or Science

The normal process is for students to enroll and complete one or more of the three specific academic programs available to qualified students. The programs do have some individual unit flexibility to allow options to best meet each student's needs. See the requirement paths on page 6 and the unit descriptions on pages 8 and 9 for more details.

#1) Master of Maintenance and Reliability Engineering Degree (Course # 2319):

The Master's degree requires successful completion of 8 units as shown on page 6 of this catalog.

#2) Graduate Certificate in Maintenance Management (Course # 1764):

The Graduate Certificate in Maintenance Management requires successful completion of 4 units as shown on page 6 of this catalog.

#3) Graduate Certificate in Reliability Engineering (Course # 1765): *The Graduate Certificate in Reliability Engineering requires successful completion of 4 units as shown on page 6 of this catalog.*

Taking Single Units

(not in a Course of Study)

Single units may also be taken and credits earned without enrolling in one of the specific programs shown above.



Enrollment And Typical Study Load

Units are delivered on a semester basis with two semesters each year. Students may enroll in a maximum of two (2) units per semester and up to four (4) units per year. Each successful unit completion awards 6 Monash academic credit hours (roughly equivalent to 4.5 semester hours in the U.S.). Each unit typically requires about 150 hours



“I very much enjoyed the assignment as it was very relevant to my experiences in my work place. I found the course content very much in line with real life experiences.”

Residential School

There is no longer a Residential School as part of this program. Web-based systems will now be used to fulfill the previous functions and requirements.

When To Apply

Applications open in mid-August, 2008 and are preferred by December, 2008.

Although applications for the first semester may be made up through January 15, 2009, quotas may apply, and acceptance is based on the order of receipt.

Applications for the second semester will be accepted through June 1, 2009. Again, quotas may apply and acceptance is based on order of receipt.

How To Apply

**** (Applicant must have a four-year BS degree in Engineering or Science.**

- 1) Complete the enclosed one-page Application Cover Sheet on page 10 of this catalog **or** obtain and complete an Application Cover Sheet from www.engr.utk.edu/mrc
- 2) Go to www.gippsland.monash.edu/science/mre and print out and complete the Monash Off-Campus Learning Application Form for 2009. You should find the **Explanatory Notes** under the Applications page most helpful in completing the Monash application.
- 3) Obtain, or have your academic institution send, directly to the address below, a certified copy of your college transcripts or other formal accredited qualifications for inclusion with your application (please do NOT send certificates from private non-award short courses).

Previously awarded academic credits may be allowed for students who have completed similar courses at Monash or another university, and full details should be supplied with the application form.

- 4) Prepare and include a resume covering your industrial experience with details of responsibility.
- 5) Send the Application Cover Sheet, the Monash Application and the accompanying paperwork with a \$30 (US) non-refundable application fee to:

Maintenance & Reliability Center
University of Tennessee
506 East Stadium Hall
Knoxville TN 37996-0750

Payment of the \$30 application fee may be made by check, money order or credit card (VISA or MasterCard only). See the Application Cover Sheet on page 10 for details.

Costs

The following cost schedule applies to 2009.

Original application fee (one-time).....	\$30
Tuition per unit subject	\$2,400
Textbooks (typical average per subject)	\$100—\$150

Note: Most employers reimburse costs but if not, costs may be eligible for tax credits.

“I applied my learning from the unit I studied and gained an \$80,000 value for my company”

What Happens Next?

Your Application and accompanying paperwork will be reviewed by the MRC office, and if complete and satisfactory, will be passed on to the Monash University Admissions people for final review. You should be advised of your application acceptance or denial within a few weeks of receipt of the application and accompanying paperwork. If accepted by Monash, you will then be required to complete and sign an acceptance document committing yourself to go forward. You will also be asked to complete a demographic survey for a required statistical report for Monash and you will be asked for a passport-size picture for a student ID card.

Meanwhile, you will also receive a tuition invoice from the MRC for the units you have requested. Payment of the full tuition for each semester will be due no later than the dates listed on page 7 of this catalog. Study materials for each subject are normally not released to you until your tuition is paid, so it is helpful to pay your tuition sooner and receive your study materials earlier.

Withdrawal from one or more subjects is allowed at minimal cost if done by the dates listed on page 7 of this catalog.

Should significant extenuating circumstances occur that prevent a student from having the time to complete their studies, students may request a one-year intermission in their studies (all units). Granting of that intermission status is not guaranteed and is determined solely by the Monash Administration.

Other changes to commitments may be able to be arranged later by agreement of the instructor and approval of program coordinators.

Additional Monash Information

For additional specific and current information about the programs, unit content, off-campus learning policies and other miscellaneous activities, please visit the Monash MRE website at:
www.gippsland.monash.edu/science/mre.



Course Exemptions

Exemptions may be allowed where a candidate has already completed a similar course to any of those included in these programs. However, this exemption does not apply where the course formed part of another qualification gained (i.e. the same course cannot be counted twice).

Exemptions for courses completed at other universities may apply only up to a maximum allowance of 25% of this program.

When a course exemption is granted in the Master's program, candidates will be required to study another course from the postgraduate courses offered by another Monash school or department.

Further Information

For general and administrative matters, contact:

**Maintenance & Reliability Center
The University of Tennessee
Phone: (865) 974-9625
Fax: (865) 974-4995
e-mail: mrc@utk.edu**

"I just wanted to pass on my appreciation for the course and express what a benefit it has been for me vocationally and of course financially. I would recommend any level of the course to anyone serious about a career in Maintenance."

"My team and I laid the foundations for significant changes. We are currently progressing from being driven by daily production targets to asset management of the facility .

The training from Monash and your program was the basis of the new foundations we laid."

"The course was right for my job."



The official regulations governing courses are contained in Monash University publications, which can be accessed via the

The University of Tennessee does not discriminate on the basis of race, sex, color, religion, national origin, age, disability, or veteran status in provision of educational programs and services or employment opportunities and benefits. This policy extends to both employment by and admission to the University.

The University does not discriminate on the basis of race, sex, or disability in its education programs and activities pursuant to the requirements of Title VI of the Civil Rights Act of 1964, Title IX of the Education Amendments of 1972, Section 504 of the Rehabilitation Act of 1973, and the Americans with Disabilities Act (ADA) of 1990.

Inquiries and charge of violation concerning Title VI, Title IX, Section 504, the ADA, the Age Discrimination in Employment Act (ADEA), or any of the other above referenced policies should be directed to the Office of Affirmative Action, 711E Andy Holt Tower, Knoxville, TN 37996-0174, telephone (865) 974-2243. Requests for accommodation of a disability should be directed to the ADA Coordinator at the above address.

A project of the Maintenance and Reliability Center, 506 East Stadium Hall, Knoxville, TN 37996-0750
PA# E01-1309-001-002-08

Requirements for the Various Programs

For the **Master's Degree in Maintenance and Reliability Engineering** (Course 2319), there are two typical paths as outlined below. A minimum of eight (8) units are required to earn this degree.

Path 1—8 Units

MRE5001 (was GEG7014)

MRE5002(was GEG7024)

MRE5003(was GEG7044)

MRE5004(was GEG7064)

Plus 3 electives from

MRE5005 (was GEG7034)
or MRE5101 (was GEG7114)
or MRE5107 (was GEG7154)
MRE5006 (was GEG7054)
MRE5102 (was GEG7124)
MRE5103 (was GEG7134) **
MRE5104 (was GEG7144) **

Plus MRE5008—Project
(was GEG 7094)

OR

Path 2—8 Units

MRE5101 (was GEG7114)

MRE5102 (was GEG7124)

MRE5103 (was GEG7134) **

MRE5104 (was GEG7144) **

Plus 3 electives from

MRE5001 (was GEG7014)
MRE5002 (was GEG7024)
MRE5003 (was GEG7044)
MRE5004 (was GEG7064)
MRE5006 (was GEG7054)

Plus MRE5008—Project
(was GEG 7094)

** MRE5101 & MRE5102 are Prerequisites to MRE5103 and MRE5104

For the **Graduate Certificate in Maintenance Management** (Course 1764)

4 Units

MRE5001 (was GEG7014)
MRE5002 (was GEG7024)
MRE5003 (was GEG7044)
MRE5004 (was GEG7064)

For the **Graduate Certificate in Reliability Engineering** (Course 1765)

4 Units

MRE5101 (was GEG7114)
MRE5102 (was GEG7124)
MRE5103 (was GEG7134)**
MRE5104 (was GEG7144)**

The Certificates and Degrees in these programs are all conferred by Monash University, and are ONLY available through off campus learning.

NOTE: In the UT-Monash Program, Monash refers to each award program as a “course” (in the US, we often refer to this as a Degree program).

Monash refers to each specific subject as a “unit” (In the US, we often refer to this as a course).

Critical Dates for Participating in the 2009 UT-MONASH Programs

	<u>Semester 1</u>	<u>Semester 2</u>
Applications Close	Jan. 15	Jun. 15
Tuition Due	Feb. 16	Jun. 30
Class Start	Mar. 2	Jul. 20
Withdrawal w/o Penalty	Mar. 31	Aug. 17
Classes End	Jun. 10	Oct. 28
Final Exams	Jun. 13—Jul. 5	Oct. 31—Nov. 16

SCHEDULE OF 2009 UNIT OFFERINGS

<u>Unit #</u>	<u>Unit Title</u>	<u>Semester 1</u> (Mar—Jun)	<u>Semester 2</u> (Jul—Nov)
(<u>NEW</u>) (<u>PREVIOUS</u>)			
MRE5001 (GEG7014)	Terotechnology & Life Cycle Costs	X	
MRE5002 (GEG7024)	Maintenance Management	X	
MRE5003 (GEG7044)	Industrial Techniques in Maintenance Management		X
MRE5004 (GEG7064)	Asset Management Techniques		X
MRE5005 (GEG7034)	Quantitative Techniques for Asset Management	X	
MRE5006 (GEG7054)	Machine Condition Monitoring & Fault Diagnosis		X
MRE5007 (GEG7154)	Risk Engineering		X
MRE5008 (GEG7094)	Maintenance & Reliability Engineering Project	X - full year -	X
MRE5101 (GEG7114)	Basic Quantitative Skills for Reliability Engineering	X	
MRE5102 (GEG7124)	Understanding Reliability	X	
MRE5103 (GEG7134)	Advanced Reliability (pre-requisite 5101,5102)		X
MRE5104 (GEG7144)	Reliability Applications (pre-requisite 5101,5102)		X

Unit Descriptions

Note 1: The unit descriptions listed here are generally accurate, but students should check for updates and current information on content, assessments, and textbooks by visiting www.gippsland.monash.edu/science/mre.

Note 2: All units are valued at six Credit Points which is equivalent content to an on-campus nominal class contact time of 6 hours for 13 weeks (or typically 4.5 semester hour credits in the U.S.)

MRE5001: Terotechnology and Life Cycle

Costs (was GEG7014)

Introduction to asset management and terotechnology. Application of terotechnological techniques to increase profitability. Life cycle costs and the costs of ownership; assets as the profit generators; impact of maintenance on profitability. Maintenance budgets and cost control. Terotechnological aspects of engineering economics and accountancy. Terotechnology and maintenance performance ratios. Introduction to asset purchase/replacement policies and those techniques concerned with economic decisions to buy or replace major units of plant. Design/re-design of plant to improve maintainability and reduce life cycle costs; design maintenance.

ASSESSMENT: Assignments (50%); exam (50%).

Textbooks required: Canada, Sullivan & White: *Capital investment analysis for management and engineering*. 3rd Ed PrenticeHall 2005 ISBN 013143408X (\$A117) (hardcover)

MRE5002: Maintenance Management (was

GEG7024) Maintenance planning and control, objectives of the maintenance department, availability of plant, types of failures, types of maintenance and maintenance strategies. Structures of maintenance departments, job descriptions of maintenance personnel, communication within the maintenance function, use of multi-skilled maintenance personnel to reduce re-sourcing difficulties. Documentation and computer control systems, selection of appropriate manual or computerized control systems for a maintenance department depending on size and type of organization. The implementation of maintenance planning systems, including plant inventories, coding, asset registers, scheduling, resource planning, work order control, history and feedback.

ASSESSMENT: Assignments (50%); exam (50%).

Textbooks required: none

MRE5003: Industrial Techniques in Maintenance Management (was GEG7044)

Work measurement, method study and activity sampling applied to maintenance activities. Personal time management. Stock control of materials and parts within the maintenance function. Stores layout, establishing inventories, stock levels, re-order levels. Project management techniques applied to shutdowns and major maintenance project activities: critical path networks and analysis, Gantt Charts. Motivation and control of the workforce. Motivation: leadership and management in maintenance.

ASSESSMENT: Assignments (50%); exam (50%).

Textbooks required: none

MRE5004: Asset Management Techniques

(was GEG7064)

Asset Operations Optimization (also called Total Productive Maintenance). Reliability Driven Maintenance (also called Reliability Centered Maintenance). Designing for Operability and Maintainability (including Hazops and the Bretby Maintainability Index analyses) and Value Methodology.

ASSESSMENT: Four project assignments.

Textbooks required: available only from the Unit Adviser, Dr Emile Eerens eercons@i.net.au. The titles are: *Improving Asset Performance with Total Productive Maintenance*; *Developing a maintenance plan with Reliability Centered Maintenance*, *Better business results through Improving Asset Operability and Maintainability* and *Improving asset management with Value Methodology*. [Cost is about \$A220 plus postage and packing].

MRE5005: Quantitative Techniques for Asset Management (was GEG7034)

Introduction to the techniques applicable to the analysis of feedback data obtained in the maintenance planning system, statistical techniques applied to maintenance activities, the need for data analysis, methods of presenting analyzed data; Weibull Analysis; Pareto Curves. Mathematical modeling of maintenance data; Monte Carlo simulation; Queuing theory; Determining optimum frequencies for fixed-time maintenance activities/shutdowns. Reliability and application of reliability data. Introduction to risk analysis.

ASSESSMENT: Four Assignments; Exam.

Textbooks required: *Basic Reliability Engineering*, available only from the Unit Adviser, Dr. Emile Eerens eercons@i.net.au

MRE5006: Machine Condition Monitoring and Fault Diagnosis (was GEG7054)

What CM is and its benefits. Techniques: Visual Inspection techniques. Non-Destructive Testing. Analysis techniques for wear debris/contaminants in lubricants; CM of electrical machines. Performance analysis and obtaining data: application to pumps, boilers, heat exchangers, steam turbines, air compressors. Vibration analysis: overall level, assessment of severity, frequency analysis, phase angle. Appreciation of balancing methods. Getting the condition monitoring program going: justification, resources available to help. Fault diagnosis techniques applied to maintenance activities.

ASSESSMENT: Assignments (60%); exam (40%).

Textbooks required: Beebe: *Machine Condition Monitoring* MCM Consultants 2001 reprint. ISBN 0646250884 (available only from the Monash Bookshop at www.bookshop.monash.edu)

MRE5007: Risk Engineering (was GEG7154)

Introduction to Risk Engineering. Risk Engineering terminologies. Human perception of risk and ALARP. Risk and Reliability mathematics. System modeling and analysis. Technical tools for Risk Engineers. Loss forecasting and prevention methods for fire, explosion, machine breakdown. Human element in engineering risk management. Modeling of accidents. Industrial hazards and their risk assessment. Case studies. Emergency planning, documentation and management. Recent issues in Risk Engineering. Engineering risk management report writing and communication.

ASSESSMENT: Assignments (60%), exam (40%).

Textbooks required: none

MRE5008: Maintenance and Reliability Engineering Project (was GEG7094)

The project gives the student an opportunity to assume personal responsibility for the solution of a maintenance or reliability problem, or study of improvement in plant or maintenance management practices. It therefore enables the student to gain confidence in their ability to apply the techniques, skills and knowledge acquired in the structured coursework units, while still having academic staff available to provide general guidance and constructive criticism. This is an opportunity to take on a problem which lies outside the student's expertise, and thereby increase and broaden capability. The student will be required to review the literature relevant to the project. The result is to be presented on-line, followed by a written paper.

ASSESSMENT: Proposal and progress reports, presentation and final paper.

Textbooks required: none

MRE5101: Basic Quantitative Skills for Reliability Engineering (was GEG7114)

Introduction to reliability mathematics. Introduction to reliability data analysis. Computer applications. Planned maintenance and replacement analysis. Financial analysis of equipment logistics. Maintainability.

ASSESSMENT: Four Assignments, exam.

Textbooks required: O'Connor: *Practical Reliability Engineering* 4th Ed John Wiley ISBN 0470844639 [\$A80.95] (or hardback 0470844620) (www.bookshop.monash.edu); Student edition of RELCON (software)

MRE5102: Understanding Reliability (was GEG7124)

Introduction to reliability. Reliability in management and quality control. Reliability procurement impact on equipment selection. Reliability, availability and maintainability. Reliability prediction and modeling. Reliability testing.

ASSESSMENT: Three Assignments (40%); exam (60%).

Textbooks required: O'Connor: *Practical Reliability Engineering* 4th Ed John Wiley ISBN 0470844639 [\$A80.95] (or hardback 0470844620), and Smith, D.: *Reliability, maintainability and risk* 7th Ed Butterworth-Heinemann ISBN 0750666943 [\$A105]

MRE5103: Advanced Reliability (was GEG7134)

Special areas of prediction and definition. Designing reliability into safety critical systems. Practical techniques for reliability improvement. Synthesis of fault trees and criticality analysis. Human reliability modeling. Reliability optimization techniques, Knowledge Engineering.

ASSESSMENT: Assignments (50%); exam (50%).

Textbooks required: O'Connor: *Practical Reliability Engineering* 4th Ed John Wiley ISBN 0470844639 [\$A80.95] (or hardback 0470844620)

MRE5104: Reliability Applications (was GEG7144)

A project related to the application of several reliability tools and techniques to a work-based topic and the introduction of some new techniques, such as the Markov process, FMEA, reliability data analysis, accelerated testing and fault tolerant systems.

ASSESSMENT: Assignment 40%; Project 60%.

Textbooks required: none

Cover Sheet for Application for Admission - Year 2009

(this page for UT MRC Office use only)

Maintenance and Reliability Engineering Graduate Program Monash University/University of Tennessee

Mail this Cover Sheet (one page) and Monash Application (5 pages) with your \$30 non-refundable application fee, plus attachments (certified transcripts, resume, etc.) to:

Maintenance & Reliability Center
University of Tennessee
506 East Stadium Hall
Knoxville, TN 37996-0750

Phone (865) 974-9625

Fax: (865) 974-4995

Personal Information: (Please Print Clearly)

Name: Last, First, Middle (Maiden) _____

Mailing Address: _____

City _____ State _____ Zip _____

Shipping Address: (for study materials - do not use P.O. Box) _____

City _____ State _____ Zip _____

(If non USA, Country + Postal Code) _____

Phone (including area code): Home (____) _____ Office (____) _____

Best Time to Call/Where (H or O) _____

E-mail _____ Fax _____

Citizenship: US Permanent resident (alien reg#) _____ Date _____

Other [Visa type (attach copy) _____ Country of Citizenship _____

Declaration: I declare that the information supplied on this form, and the information given in support of my application for admission as a student, is correct and complete. I acknowledge that I am bound by the statutes and regulations of the universities, and agree to pay all fees and levies charged directly to me arising from enrollment and re-enrollment consequent to this application.

Signature _____ Date _____

Your non-refundable application fee of \$30 must accompany application.

_____ Check # _____

_____ Money Order # _____

Make payable to: The University of Tennessee (U.S. Dollars)

OR

_____ Visa _____ Mastercard

Card # _____ Exp. Date _____

Signature _____

Frequently Asked Questions

1. Are these programs accredited? Yes. The engineering undergraduate programs in Australian universities are accredited by the Institution of Engineers Australia, similar to the USA, where the ABET has this function. Reciprocity between these programs and 6 other countries was established by the Washington Accord. Graduate programs in Australia and the USA are not accredited by any external body, but by each university's internal quality control processes. At Monash, proposals for new programs and the subjects to be contained in them are detailed in a stringent form, and pass from a Department's Board to the Graduate Affairs Committee, and so on to gain final approval. Regulations are drafted by the University legal department. Any changes in the programs must also follow this path. This process, although lengthy, insures thorough scrutiny and a high quality outcome.

2. Who is the teaching staff, and how can I be sure that they know their subject? The teaching staff is comprised of academics on campus and sessional staff off campus. The academics have long experience and interest in their subject fields. The sessional staff has been selected for their particular expertise and current work in their field.

3. Is the diploma from UT or Monash or both? All awards are from Monash University only. Their faculty has developed the content and is responsible for maintaining the high quality of the program.

4. Sometimes my job at work builds up with a sudden high demand. What if I can not meet the deadlines for submission of assignments? Students are encouraged to establish and maintain a close relationship with the Subject Adviser, keeping in touch regularly, usually by email. When emergencies arise, contact your Subject Adviser/s and request an extension. It is also a good idea to propose a new date that you consider that you can meet. Note that the final grades are awarded soon after the end of a semester, and if all work has not been completed, an "Incomplete" grade is normal. Once the work is submitted as arranged, this grade is converted to the final grade.

5. I see that the study materials are mostly paper-based. Isn't this a little old fashioned? Students tell us that paper-based is the most convenient form for them. Sections can be removed for reading when commuting, and an overview is readily possible. Research also shows that the eye takes in print material on paper 30% more effectively than screen-based text. There is also a copyright problem in placing reference material on the web. We believe that it is the message, not the medium that is important. Notwithstanding the above, studies are web-enhanced with each unit having a dedicated Monash University Studies Online (MUSO) site containing further resources and activities. All units have a Unit Guide (administrative details and assessment information), a Unit Book (study guides), and in most cases, a Reader (selected materials).

6. I see that some subjects have an examination. What if I am unable to sit the examination at the date set? Special arrangements can be made to sit the examination at another time. The request must give good reasons and be made in advance of the set date (unless in the case of illness). The Monash Co-ordinator is the person to contact.

The information contained is subject to alteration or amendment without notice by the University.
Any updates are shown on www.gippsland.monash.edu/science/mre 8/2007

Monash University Fast Facts

- Australia's largest university; top reputation for quality education and research
- Headquartered in Melbourne; eight campuses serving 50,000-plus students world-wide
- Founded in 1961; named to honor Sir John Monash, a distinguished Australian engineer and military officer
- Includes engineering institutions with pedigrees dating from 1930
- 3600 engineering students, 150-plus in the Maintenance, Reliability, and Asset Management Off Campus Learning Programs
- The Off Campus Learning Center (based on the Gippsland, Victoria campus) serves about 6000 students from more than 80 countries
- The Maintenance, Reliability, and Asset Management Off Campus Learning Program has awarded more than 500 Graduate Certificates, Graduate Diplomas, and Master's degrees since 1985

“Make the Difference in Your Career”

**With the University of Tennessee
College of Engineering
Maintenance and Reliability Center
and
Monash University (Australia)**

- **Earn certificates, diplomas, and/or master’s degrees** (all awards conferred by Monash University)
- **Continue your educational, professional, and career growth and development;** update and expand your technical skills; develop expertise in new areas
- **Differentiate yourself from your peers,** be recognized as a leader in your profession
- **Accelerate your earnings** progression/trajectory
- **Do it at your own pace,** in the convenience of your own home, with flexibility and minimal disruption, in the most economical manner
- **Work with world-renowned educators** and leaders in the advanced maintenance and reliability engineering, asset management and distance education fields
- **Costs may be reimbursable** under your employer’s continuing education program; tax credits may apply

Contact for more information:
Maintenance and Reliability Center
Phone: (865) 974-9625
Fax: (865) 974-4995
E-mail: MRC@utk.edu
Or visit our web site—
www.engr.utk.edu/mrc



MONASH University

