



## FACULTY OF ENGINEERING

### DEPARTMENT OF MECHANICAL AND MANUFACTURING ENGINEERING

Telephone (868) 662-2002: Ext. 82170/82171 ♦ E-mail: [mechanical.engineering@sta.uwi.edu](mailto:mechanical.engineering@sta.uwi.edu)

Submit all applications to: Engineering Institute UWI- Tel: 662-6267 e-mail: [Continuing.Education@sta.uwi.edu](mailto:Continuing.Education@sta.uwi.edu)

#### **Engineering Asset Management [EAM] -2020 Short Courses**

**Designed to Optimize your Asset Integrity with:**

**RCM-TPM-Weibull-Pareto-Ishikawa-FMECA-RCA-Planning and Scheduling-Turnarounds**

**Receive a UWI's Certificate of Participation upon successful completion of each course**

No	Course Code	Course Name	Facilitator	Date	Time & Venue	Target Audience
<b>Zoom Presentation on Vibration Analysis (4 Contact Hours)</b>						
1	Lectures from the MSc EAM Course MENG 6703 'Condition Monitoring and Diagnostics'	<b>TOPICS:</b> <ul style="list-style-type: none"><li>➤ Alignment and balancing</li><li>➤ Vibration Analysis</li><li>➤ Proactive Alignment systems with software</li><li>➤ Maintenance and reliability programs</li><li>➤ Vibration instruments</li></ul> <b>COST: 1000TTD per participant</b>	<b>Dr. Greg Buscarello</b> Atlanta-USA  Certified ISO Category 3 Vibration Analyst	15 <sup>th</sup> Feb 2020	Sat 9am to 1pm  Design Studio 2  UWI	Managers, Engineers & Technicians in Reliability and Maintenance
<b>Zoom Presentation on Maintenance Planning &amp; Scheduling (4 Contact Hours)</b>						
2	Lectures from the MSc EAM Course MENG 6702 'Work Planning and Scheduling'	<b>A CONDENSED VERSION OF THE TOPICS:</b> <ul style="list-style-type: none"><li>➤ The Business Case for Planning and Scheduling</li><li>➤ Principles &amp; Concepts of Effective Planning &amp; Scheduling</li><li>➤ Handling Reactive Maintenance</li><li>➤ Integrating Proactive Maintenance Activities: Preventive, Predictive Projects</li><li>➤ Effective Workflow and Planning Exercises</li><li>➤ Controlling Planning &amp; Key Performance Indicators</li><li>➤ Planning and Scheduling for Plant Turnarounds</li></ul> <b>COST: 1000 TTD per participant</b>	<b>Doc Palmer</b> Atlanta-USA  Author of "Maintenance Planning & Scheduling Handbook" (used in The UWI's MSc EAM Programme)	22 <sup>nd</sup> Feb 2020	Sat 9am to 1pm  Design Studio 2  UWI	Managers Engineers Technicians Planners Schedulers
<b>Workshop on Vibration Analysis-Case Studies (4 contact Hours)</b>						
3	Lectures from the MSc EAM Course MENG 6703 'Condition Monitoring and Diagnostics)	<b>TOPICS:</b> <ul style="list-style-type: none"><li>➤ Use of equipment and software in vibration Monitoring</li><li>➤ Case Studies in Vibration analysis</li><li>➤ Field techniques in vibration used to solve problems</li><li>➤ Guides to the Interpretation of vibration Analysis readings</li><li>➤ New Trends in Vibration Analysis</li></ul> <b>COST: 1500 TTD per participant</b>	<b>Mr Haffiz Yathali</b>  CMRP Managing Director YATZ Engineering Limited.	29 <sup>th</sup> Feb 2020	Sat 8.30am to 12.30pm  Room 5 Block 6  UWI	Managers Engineers and Technicians in Reliability and Maintenance
<b>Maintenance Analysis &amp; Optimization-one of the EAM MSc course (32 Contact hours)</b>						
4	Lectures in the MSc EAM Course- MENG 6704 'Maintenance Analysis and Optimization'	<b>TOPICS:</b> <ul style="list-style-type: none"><li>➤ Physical Asset Management Maintenance Policies</li><li>➤ Weibull Analysis and other statistical tools/software</li><li>➤ Component Replacement Decisions</li><li>➤ Inspection Decisions &amp; Spare Parts Provisioning</li><li>➤ Capital Equipment Replacement</li><li>➤ Maintenance Resource Management</li><li>➤ Evidence Based Asset Management (EBAM)</li></ul> <b>COST: 6500 TTD per participant</b>	<b>Professor A.K.S. Jardine</b> University of Toronto  Author of "Maintenance, Replacement, & Reliability Theory & Applications" (used in The UWI's MSc EAM programme)	14-15 March 2020  28-29 March 2020	Sat and Sun 9am to 5pm  Room 5 Block 6  LT3 and Design Office 1  UWI	Managers Engineers Senior Technicians in Reliability and Maintenance



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No	Course Code	Course Name	Facilitator	Date	Time & Venue	Target Audience
<b>Strategies for the Optimization of Asset Integrity in all Industries (6 Contact hours)</b>						
5	Lectures from the MSc EAM Courses- MENG 6704 'Maintenance Analysis and Optimization' and MENG 6701 Asset Maintenance Technologies	<b>DAY ONE WORKSHOP:</b> <ul style="list-style-type: none"><li>➤ Basics statistical calculations and decision-making analyses for the non-engineer.</li><li>➤ Failure Analysis and Decision making Processes for optimal Maintenance and Reliability recommendations in the Heavy and Manufacturing environment</li><li>➤ Strategies to optimize the Implementation of improvement decisions in Maintenance and Reliability from the Strategic Plan to the Daily Plan</li></ul> <b>COST: 1500 TTD per participant</b>	<b>Professor A.K.S. Jardine</b> <i>University of Toronto</i>  Author of "Maintenance, Replacement, & Reliability Theory & Applications" (used in The UWI's MSc EAM programme)  <b>Mr. Kishore Jhagroo</b> <i>Senior Lecturer -UWI</i>  <i>Coordinator - MSc EAM Retired Maintenance Manager with 37 years of field experience.</i>	16 <sup>th</sup> March 2020	Mon 1.30pm to 7.30pm  Room 1 Block 13  UWI	Managers Engineers Senior Technicians in Reliability and Maintenance
<b>Zoom Presentation Machine Learning and Artificial Intelligence (4 Contact Hours)</b>						
6	Lectures from the MSc EAM Course	<b>TOPICS:</b> <ul style="list-style-type: none"><li>➤ Introduction to data science, AI and machine learning (ML):<ul style="list-style-type: none"><li>- History of AI and other Concepts in AI and ML</li></ul></li><li>➤ Basic ML algorithms:<ul style="list-style-type: none"><li>- Supervised learning :<ul style="list-style-type: none"><li>* Algorithms and case studies</li><li>* Deep learning and case studies</li></ul></li><li>- Unsupervised learning:<ul style="list-style-type: none"><li>* Clustering algorithms and case studies</li></ul></li><li>- Reinforcement learning:<ul style="list-style-type: none"><li>* Markov decision processes</li><li>* Basic algorithms: Q-learning, SARSA, DQL</li></ul></li></ul></li><li>➤ Issues and remedies:<ul style="list-style-type: none"><li>- Sample efficiency and transfer learning</li><li>- Safety</li><li>- Explainability</li></ul></li><li>➤ Other emerging technologies<ul style="list-style-type: none"><li>- Industry 4.0</li><li>- Digital twin</li></ul></li></ul> <b>COST: 1000 TTD per participant</b>	<b>Professor Chi-Guhn Lee</b> <i>University of Toronto</i>	21 <sup>st</sup> March 2020	Sat 9am to 1pm  Design Studio 2  UWI	Managers Engineers & Technicians in Reliability and Maintenance
<b>Optimization of Plant Turnaround/ Shutdown Processes (8 contact Hours)</b>						
7	Lectures from the MSc EAM MENG 6702 'Work Planning and Scheduling'	<b>TOPICS:</b> <ul style="list-style-type: none"><li>➤ Maintenance Philosophy</li><li>➤ Strategic Planning</li><li>➤ Worklist Preparations-Scope Freezing</li><li>➤ Turnaround Organization Structure</li><li>➤ Tendering Process &amp; Post Turnaround Reviews</li><li>➤ Execution, Emergent work strategies and Post Turnaround Reviews</li><li>➤ CMMS Turnaround Optimization</li></ul> <b>COST: 2500 TTD per participant</b>	<b>Mr. Kishore Jhagroo -CRE</b> <i>Senior Lecturer - UWI</i>  <i>Coordinator of the MSc EAM Retired Maintenance Manager with 37 years of field experience.</i>	4 <sup>th</sup> April, 2020	Sat 9am to 4pm  Room 5 Block 6  UWI	Managers Engineers Technicians Planners Schedulers Reliability and Maintenance Personnel