

MONA SCHOOL OF ENGINEERING



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Head of School

OVERVIEW

The Mona School of Engineering (MSE) added the Bachelor of Science in Electrical Power Engineering (EPE) to its list of programme offerings for the 2015/2016 academic year. The Programme has the full support of the Jamaica Public Service (JPS). Staff members from the JPS will commence teaching in Semester 2 of the 2015/2016 academic year.

Student enrollment continues to increase in spite of the challenges of financing the US\$10,000 tuition that was implemented in academic year 2013–14. Four (4) additional teaching staff were employed to the Mona School of Engineering to commence teaching and research in academic year 2015–16. These include Drs. Adrian Lawrence, David Smith, Carlton Hay and Noel Brown.

MonaTech, the commercial arm of the Mona School of Engineering, was formed in November 2014 and commenced operations on April 7, 2015. Mona-Tech provides world class engineering services to local companies while simultaneously providing apprenticeship training for

graduates, thereby facilitating an easy transition from academic development, into practical applications.

Partnerships and collaborations with external institutions were also forged during the 2014/2015 academic year. In light of this, Memoranda of Understanding were signed between the University of the West Indies and Advanced Integrated Systems (AIS) and also with the Jamaica Public Service (JPS).

STAFFING

Four PhD candidates were recruited during the 2014/2015 academic year:

Name	Qualification (expertise)	PhD Granting Institution	Position in MSE	Terms of Contract
Adrian Lawrence	PhD, Civil Engineering	University of Florida	Lecturer, Civil Engineering	Full time contract
Carlton Hay	PhD, Civil Engineering	University of Florida	Lecturer, (Geotechnical, Materials)	Fixed Term Contract
David Smith	PhD, Civil Engineering	Queens University (Canada)	Lecturer, (Fluids and Coastal Engineering)	Fixed Term Contract
Noel Brown	PhD, Civil Engineering	Queens University (Canada)	Lecturer, Civil Engineering	Fixed Term Contract

Student Enrollment for the 2014/2015 academic year

Programme	No. of Applicants	No. of Offers	No. Accepted	No. Registered
Civil Engineering	254	108	74	36
Computer Systems Engineering	195	37	24	12
Electronics Engineering	215	69	43	23
Total	664	214	141	71

EMPLOYMENT STATISTICS

The MSE is proud to report that 100% of its students who graduated in the 2014/2015 academic year are fully employed. These students are employed to companies such as Digicel, HUAWEI, Advanced Integrated Systems (AIS), KPMG and WISYNCO. All 14 students at the MSE who have completed their graduation requirements for the 2014/2015 academic year [eligible for graduation in October 2015) are also fully employed.

FIRST CLASS HONOURS RECEIVED

Mr. Raymour Wilson, student in the Electronics Engineering Programme, was awarded a Bachelor of Science degrees with First Class Honours.

New Programmes

Final arrangements were put in place for the start of the Electrical Power Engineering Programme in September 2015. The Programme has the full support of the Jamaica Public Service (JPS). Staff members from the JPS will commence teaching in Semester 2 of the 2015/2016 academic year.

INCOME AND EXPENDITURE

For the 2014/2015 academic year, the Mona School of Engineering's budgetary statement showed a consolidated surplus brought forward of J\$11,052,446.57, consolidated income for the period of J\$96,329,153.61 and expenditure of J\$71,263,861.89 resulting in a cumulative surplus of J\$36,117,738.29.

MEMORANDA OF UNDERSTANDING

Advanced Integrated Systems

Dr. Paul Aiken (Director of the School of Engineering), Doug Halsall (Chairman of Advanced Integrated Systems Ltd.), Everton Grennell

(Director of Sales at AIS) along with other members of the UWI Community witnessed the signing of a Memorandum of Understanding between the Mona School of Engineering and Advanced Integrated Systems (AIS) in November 2014. The Principal, Professor Archibald McDonald, and Mr. Doug Halsall signed the MOU which will facilitate student integration of classroom and lab work with practical experiences. The aim is to help students develop their entrepreneurial skills and gain the necessary work experience whilst completing the degree programme. The students are expected to transition as junior engineers into MonaTech where maintenance services will be provided to AIS.

Jamaica Public Service

Members of the UWI Community were on hand to witness the official signing of the Partnership Agreement between the Jamaica Public (JPS) Foundation and the Mona School of Engineering on Tuesday, May 12, 2015 in the Council Room. The Principal, Professor Archibald McDonald and Ms. Kelly Tomblin, President and CEO, JPS signed the Agreement which will hallmark the start of the new Electrical Power Engineering Programme which is slated to commence in September 2015.

The Bachelor of Science in Electrical Power Engineering is a 3-year Programme which is designed to serve students who are desirous of pursuing a career path in electrical power generation, transmission and distribution. It offers in-depth study of the generation of electricity from fossil fuel (oil, coal and gas), renewable sources (sun, wind, biomass, etc.) and nuclear energy.

The JPS Foundation, under the Agreement, will provide trained electrical engineers to assist with teaching of the Programme; facilitate site visits for students at various generation, transmission and distribution locations under the control of JPS; facilitate student internships where the business and operations of JPS can accommodate such interns; assist with the development of the curriculum for the Programme; and assist in supplying equipment for electrical laboratories.

Mona-Tech Engineering Services Limited

Mona-Tech Engineering Services Limited (M-Tech) was formed in February 2015 and officially opened its doors on April 7, 2015. Mona-Tech Engineering Services is the commercial branch of the UWI Mona School of Engineering. Mona-Tech provides world class engineering services to local companies while simultaneously providing apprenticeship training for graduates, thereby facilitating an easy transition from academic development, into practical applications.

Mona-Tech's service offerings include: 1) maintenance of equipment and engineering systems; 2) research and development geared towards addressing national, regional and international engineering challenges; 3) engineering support services and energy conservation strategies for corporate, industrial and residential clients; 4) maintenance of biomedical and clinical equipment and systems; 5) maintenance of analytical and industrial equipment and systems; 6) training, apprenticeships and internships; 7) engineering consultations.

Mona-Tech is 60% owned by the University of the West Indies and is governed by a seven-member Board of Directors, led by a Managing Director and a 7 member support staff including an engineering manager, administrative services manager, engineering, technical and ancillary employees. Mona-Tech's partners include: The University Hospital of the West Indies, The University of the West Indies, Equipment Manufacturers and other biomedical facilities.

OUTREACH

The MSE continues outreach activities via partnerships with Physics Department, the Faculty of Science and Technology and the UWI Mona recruitment team. This activity included visits to various institutions across the island as well as participation in a number of Open House, Orientation and Research Day activities. Outreach initiatives will increase during the 2015–16 to include the staging of our local open –house activities [to showcase student final year project and engineering research], visits to institutions across the Caribbean and workshops geared at

improving the performance of high school students in the [Physics] CAPE examinations.

TEACHING, LEARNING AND DEVELOPMENT

Inaugural Lectures

The Mona School of Engineering (MSE) hosted two Inaugural Lectures as part of an initiative to introduce its students and the wider public to LEED, or Leadership in Energy & Environmental Design, a green building certification programme that recognises best-in-class building strategies and practices. The Lectures were aimed at sensitizing persons to new and innovative methods in building and construction and to the benefits of adopting this framework.

The first lecture in the series entitled “The LEED Rating System – an Introduction” was presented by Mr. Gary Hamilton, a LEED accredited professional with a specialty in building design and construction LEED AP BD+C on Thursday, March 5, 2015 in Physics Lecture Room B.

The second in the series of lectures entitled “Jamaica’s First LEED® Building: A Case Study” was delivered by Mr. Federico Aguilar, Caribe Hospitality’s Project Director for Central America and the Caribbean on Thursday, April 9, 2015.

The Mona School of Engineering also arranged for students in its Civil Engineering Programme to visit the Marriott Hotel in New Kingston, which is currently under construction. The 129-room Marriott Hotel will be the first LEED® accredited building in Jamaica.

Staff Contributions to Teaching, Learning and Development

Dr. Tania Henry

Fall 2014

- Fall Seminar Presentation - Physics Department Seminar Series
- Facilitated Site Visit by National Minority Business Council (NMBC)

Mona School of Engineering

Director Mr. Fritz McLymont (Future sites for Nanomaterials Lab and LED Light Testing Center)

- Purchase of polymers for Polymer Nanofiber Experiments through Mona School of Engineering
- Acquisition of Solar Simulator through Mona School of Engineering
- Supervised MPhil Thesis Project (Physics Graduate Student-UWI)
- Attended Carimet (Regional Workshop on Metrology and Technology Challenges of Climate Science and Renewable Energy) put on by OAS, NIST and Bureau of Standards
- Began construction of Nanomaterials Lab and LED Light Testing Center.
- Facilitated second Site Visit by NMBC Director Mr. Fritz McLymont (Nanomaterials Lab and LED Light Testing Center)

Dr. Nicolas McMorris

Publications

- JIE Conference Paper with Dr. Omar Thomas. “Emerging Trends in Effective Bridge Management versus Bridge Maintenance.” Omar Thomas, Ph.D., M.JIE, P.E.1; Nicolas McMorris, Ph.D., P.E.2

Student Development Workshops

The Mona School of Engineering hosted a Career 101 Workshop for final year students in the Electronics Engineering Programme on April 24, 2015. Guest presenters and topics included:

- Mr. Roger Bent, Director of Student Affairs, University College of the Caribbean (UCC) – **Effective Public Speaking**
- Ms. Brigitt Hoosang, Member of the Board, Placement & Career Services – **Dress for Success**
- Ms. Silina Patterson – Manager, HR Business Services, Jamaica Public Service Company Limited – **Interview Techniques**
- Mr. Doug Halsall – CEO, Advanced Integrated Systems – **Qualities of a Successful Leader**

JAMPRO Symposium

Mr. Lindon Falconer, lecturer at the Mona School of Engineering, along with Mr. Chadwick Barclay and Mr. Alfred Fullwood [both final year students at the Mona School of Engineering] were invited to participate in the JAMPRO Symposium on Opportunities in Electronics Manufacturing. The students were exposed to a number of discussions surrounding the manufacturing sector in Jamaica; the challenges and opportunities, the benefits of entrepreneurship and students were able to forge relationships with prominent members of that sector.

Student Chapters

- Dr. Nicolas Mcmorris started the student chapter of the Institute of Structural Engineers, Jamaica Chapter.

Scholarship Opportunities

Mr. Chadwick Barclay, Mr. Moran Singh and Mr. Kevaun Stewart, all final year students in the Electronics Engineering Programme, were recipients of the LIME Foundation 10th Anniversary Scholarship. The scholarships were awarded based on academic performance, financial need and general citizenship. The recipients are expected to complete 100 hours of community service, either with the LIME Foundation or UWI Development and Endowment Fund.

Student Awards

Mr. Raymour Wilson, a recent graduate of the Mona School of Engineering, was recognized by the Jamaica Institution of Engineers [at its annual Awards Ceremony on December 2, 2014] as the Top Engineering Student at the UWI, Mona Campus for the 2013/2014 academic year.

RESEARCH AND INNOVATION

Dr. Tania Henry

Spring 2015

- UWI Research Day Presentation-Poster Presentation (Physics MPhil Student)
- Supervised Undergraduate Research Project (Physics Undergraduate-UWI)
- Supervised MPhil Thesis Project (Physics Graduate Student- UWI)
- Established ongoing research collaboration and signed Visiting Scientist Agreement with SUNY Polytechnic Institute's, College of Nanoscale Science and Engineering at the University of Albany.

Summer 2015

- FST Conference Presentation-Oral Presentation (Physics MPhil Student)
- Panelist: Women in Motion Networking Series™: Women in Technology, New York, NY, hosted by the National Minority Business Council (NMBC)
- Supervised Physics Summer Research Project (Physics Undergraduate-UWI)
- Supervised Engineering Summer Research Projects (Two Physics Undergraduates- UWI)
- Supervised MPhil Thesis Project (Physics Graduate Student- UWI)
- Visiting Scientist at SUNY Polytechnic Institute's, College of Nanoscale Science and Engineering at the University of Albany. Research activities involve group III-Nitride Semiconductor nanostructures.

Dr. Omar Thomas

- Research focused on Non Destructive Evaluation of Concrete.
- Collaborations with:

- Dr. Kirk Spence to begin work on 3-D printed Buildings.
- Brian Alberga to help create the Jamaica Green Building Council.
- Heather Pinnock & the Institute for Sustainable Development to help review the design & plans for the first “Net-Zero Energy Building in Jamaica”. Funded by UN & Global Environmental Fund.