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FOREWORD

On behalf of all staff, I welcome all new and returning students in the Department of Mechanical and Manufacturing Engineering.

The Department is firmly committed to high standards in education, research and outreach. The Department's goals are to:

- educate engineers who will be the future Industry Managers and Leaders in the Caribbean.
- carry out research to respond to the needs of the Caribbean Society, and
- provide effective professional and public service.

The discipline of Mechanical / Industrial Engineering is very wide and connects with other areas of engineering. Broadly stated, Mechanical / Industrial Engineers are the professionals who design, manufacture, install, operate and improve components, devices, products and systems that are beneficial to society. The work of the Mechanical / Industrial Engineer is multi-disciplinary. Professional opportunities for Graduate Engineers of the Department are listed later in this Guide. Our alumni have attained prominence not only in engineering practice, but also as corporate leaders as well as in the legal profession, accounting, politics and other fields of endeavour.

Our competent and dedicated staff in the Department are ready and willing to facilitate your journey towards becoming a professional engineer.

This Guide has been compiled to enable you to quickly access and understand some of the rules and regulations that you must adhere to throughout your stay in the Department. Web-Links are also provided to documents which contain the complete set of rules and regulations.

Whichever programme you are pursuing, I wish that you would have a fulfilling and productive experience in the Department.

BOPPANA V. CHOWDARY
Professor and Head
Department of Mechanical and Manufacturing Engineering
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THE VISION & MISSION OF THE DEPARTMENT

“Our vision is to become an internationally acclaimed Academic Department recognised for its high quality education, research and outreach programmes”.

“Our mission is to provide a sound education in Mechanical, Manufacturing, Industrial, and Biosystems Engineering, encouraging entrepreneurship, innovation, and development to improve the quality of life of our people”.

1. INTRODUCTION

**Mechanical Engineering** is concerned with the design, manufacture, testing, operation and maintenance of various types of components, machinery, structures and industrial plants as well as the executive management of industries. There are several broad areas of Mechanical Engineering practice. These include design, fabrication/construction, manufacturing, aeronautics, and provision of utilities/services, such as water, electricity, air-conditioning, and transportation, etc.

**Industrial Engineering** is concerned with the identification, analysis and synthesis of the various components (people, machines, materials, management and money) that are necessary for the design, construction and operation of systems and organisations that produce goods and/or services of high quality. Industrial Engineers therefore provide the necessary technological and management inputs for rational and effective decisions, and to control these inputs to ensure objectives are met.

**Biosystems Engineering** (which has replaced Agricultural Engineering in the Department) is defined as the application of engineering principles to modern food and fibre production, and to bulk handling, storage and processing systems for biological products. It covers the areas of mechanisation (field, transport and plant), land and water development, infrastructural development, post-harvest technology and food engineering, including food plant machinery.

The Department has several undergraduate and postgraduate programmes. These include:

**B.Sc. programmes** in:

- B.Sc. Mechanical Engineering
- B.Sc. Mechanical Engineering with a Minor in Biosystems
- B.Sc. Industrial Engineering

(See Appendix A for details)

**M.Sc. programmes** in:

- Production Engineering and Management
- Production Management
- Engineering Management
- Manufacturing Engineering and Management
- Engineering Asset Management

M.Phil. and Ph.D. research programmes are available.

*Please refer to the following link for more information*: [http://sta.uwi.edu/faculty-booklet-archive](http://sta.uwi.edu/faculty-booklet-archive)
2. STUDENT’S RESPONSIBILITIES

It is the responsibility of each student to:

1. **READ THE UNDERGRADUATE STUDENTS’ GUIDE** and **ENGINEERING FACULTY BOOKLET – Undergraduate Regulations & Syllabuses** – in addition to other relevant documents (available at the University’s website: [http://sta.uwi.edu/](http://sta.uwi.edu/)) **thoroughly**. These publications are intended to provide details of University regulations and other useful information for compliance and success at the University.

2. Bring any issues as they arise, to the attention of relevant person – tutors, lecturers or the Head of Department, as the case may be.

3. Be aware of and engage the various facilities of the Student Support Services as illustrated in Figure 1 (pp.4).

4. **IT IS INCUMBENT ON EACH STUDENT TO READ THE NOTICE BOARDS AND LOGIN TO THE MYELEARNING PORTAL regularly** to access information regarding class and laboratory schedules; in-course examinations; assignment deadlines; examination timetables; consultations with staff and other information, including changes necessary for the proper conduct of the academic programmes.

5. Adhere to appropriate codes of conduct particularly in classrooms and laboratories (a code of conduct is displayed in each lab).

6. Endeavour to be present and on time for all classes, tutorials, examinations and laboratories sessions and submit all assignments by the stipulated deadline.

As the most important stakeholders of the University, students are expected to seek the welfare and advancement of the institution and to protect it from misuse, abuse and all other detrimental activities and influences.
3. ORGANISATIONAL STRUCTURE OF THE DIVISION OF STUDENT SERVICES AND DEVELOPMENT
4. DEPARTMENTAL SUPPORT COMMITTEES & SYSTEMS

Within the Department there are also specific committees and systems to be of benefit to the students. These include:

4.1 Head of Department (HOD)
All students have access to the Head of Department if they have difficulties in resolving issues within the Department.

4.2 Student – Staff Liaison Committee
The Student – Staff Liaison Committee meets at least once a semester and provides a platform for dialogue on matters of concern toward enhancing the delivery of the programmes within the Department. This committee comprises a group of students (including Student Representatives) and staff (including the HOD and Departmental Level Coordinators). *(Please refer to Appendix H for schedule)*

4.3 Industrial Liaison Committee
The Industrial Liaison Committee serves to bridge the gap between the Department and the Industry with the aim of ensuring that our graduates are a credit to the profession and relevant to the society.

4.4 Engineering Students’ Society (ESS)
Students in the Department, all belong to the Engineering Students’ Society, which organizes special activities for students and represents their interests in Campus Academic Board, Faculty Boards and other Committees within the Campus and University.
4.5 Tutor – Tutee System

The Tutor – Tutee System pairs a student (the tutee) with a tutor (member of academic staff) who provides appropriate advice/guidance and assistance on academic and other personal matters where possible. Mechanical/Industrial Engineering Project Supervisors serve as personal tutors for the students they supervise. (Please refer to Appendix B for listing)

4.6 Help Desk

a. Physical Help Desk

A Physical Help Desk has been created for Levels 1 and 2. The main aim of the Help Desk is to provide academic assistance to students on departmental courses at Level 1 and 2. The desk will be staffed by postgraduate students and students will be informed of the schedule during the 2nd week of the semester. (Please refer to Appendix C for schedule)

b. Virtual Help Desk

The Department has launched a Virtual Help Desk Initiative which takes effect from September 2016. The Virtual Help Desk is implemented via myeLearning and provides a forum for student support with undergraduate Math-based courses. This Virtual Help Desk Initiative aims to provide assistance to students outside of the brick and mortar constraints of the physical campus. Students who require support with Math-based courses can register for the Virtual Help Desk by signing up for the MENG 0001 Virtual Help Desk course on Banner.

4.7 Bridging Courses

The Department of Mechanical and Manufacturing Engineering will be conducting a zero (0) credit Bridging Applied Mathematics course in the first two weeks of Semester 1. The aim of this course is to prepare students for many of the Math-based engineering courses such as Statics and Strength of Materials (MENG 1010), Engineering Dynamics (MENG 1004), Engineering Thermodynamics 1 (MENG 1001) and Engineering Fluid Mechanics (MENG 1011). The course will cover the following topics: Vectors, Trigonometry, Differentiation and Integration. (Please refer to Appendix C for schedule)
4.8 myeLearning

The myeLearning platform is available to all registered students.

The myeLearning portal provides access to:

- course materials,
- class announcements and other important information,
- uploading of assignments,
- Turnitin software,
- other resources stipulated by individual course lecturers.

4.9 Mechanical Engineering Lab and Systems Lab

- All registered students in the Department have access to computers and software packages located in the Mechanical Engineering Lab and the Systems Lab during the hours of 8:30 a.m. and 4:30 p.m.
- These labs are also used for teaching purposes and are therefore restricted for use during such times (the lab schedule is posted in the lab).
- Students may access the required software packages for practice or assignment purposes by downloading trial/student licences or purchasing full versions at their own expense, from the developers’ websites. (Please refer to Appendix D for a list of these software packages and download instructions/purchase links)

4.10 Turnitin

The University has a strong policy against plagiarism:
https://sta.uwi.edu/resources/documents/Exam_Regulations_Plagiarism.pdf

At the Departmental level, student projects will be processed through Turnitin software and results will be dealt with according to University policy as stipulated on plagiarism.
4.11 Campus Library Services

The Campus has a Main Library which not only provides the required teaching books for the various courses in the programmes but also provides reading space, past examination papers, newspapers, databases, journals, e-Journals, as well as West Indiana and other Special Collections of academic materials required by students. In addition, the Department has a BSc Mechanical/Industrial Engineering Project Library which houses some BSc projects that are made accessible to students by request.

4.12 Student Feedback/Course Evaluation

Student feedback is integral to improving the delivery of the programmes within the Department. In addition to having a voice at the Student-Staff Liaison Committee meetings, each student has the opportunity to provide feedback on the delivery of each course undertaken via a Student Feedback/Course Evaluation Form distributed at the end of each semester. These forms are analysed by the Centre for Excellence in Teaching and Learning (CETL) and results are sent to the HOD and the respective lecturers. Any issues raised by the students are addressed and measures are taken to resolve these concerns.

4.13 Departmental Open Day

The Department hosts an annual Open Day event which showcases outstanding Mechanical/Industrial Engineering Projects and other major accomplishments and research initiatives of the Department to the public (including industry).

4.14 Departmental Newsletter

The Department publishes a Newsletter which is used to disseminate information about the achievements and accomplishments of staff and students as well as news about other significant activities in the Department.
4.15  Professional Engineering Bodies – Student Chapters

BSc students are encouraged to join local and international professional engineering bodies as Student Members. These include: The Association of Professional Engineers of Trinidad and Tobago (APETT); The American Society of Mechanical Engineers (ASME); The Institution of Mechanical Engineers (IMechE) and The Society of Manufacturing Engineers (SME). The Department currently has two (2) active Student Chapters associated with the IMechE and SME. (Refer to Appendix E for more information)

4.16  Accreditation

All programmes in the Department are accredited by the Institution of Mechanical Engineers (IMechE). Visit www.imeche.org for more information on the IMechE.
5. REGISTRATION & EXAMINATION GUIDELINES

It is the responsibility of each student seeking to register in the Department of Mechanical and Manufacturing Engineering to ensure that the courses for which he/she is registered, are in accordance with the regulations of the Faculty of Engineering. Where such regulations are not adhered to, the Department will take appropriate action.

In addition, the Department has imposed its own constraints on the registration and examination process. These are listed below along with the more significant Faculty Regulations:

5.1 Orientation and Academic Advising

The Department strongly advises all new students to attend the Orientation Seminar (which takes place before the start of the academic year) while both new and returning students are required to attend the respective Academic Advising sessions (which take place before the start of each semester). The dates of these sessions are posted on the Department’s website and are also circulated via the respective Class Representatives. (Please refer to Appendix F for schedules)

5.2 Pre-Requisite Courses

Pre-requisites for a given course must be passed before a student is allowed to enrol for that course. For a list of courses and their associated pre-requisites, please refer to the ENGINEERING FACULTY BOOKLET – Undergraduate Regulations & Syllabuses.

http://sta.uwi.edu/faculty-booklet-archive

5.3 Trailing Courses

Students must register in the first instance, for all courses being carried forward i.e. trailing courses. Students are required to attend Academic Advising and consult the respective Level Coordinators (listed in Appendix G) for details.
5.4 Resit Examinations

There is **no Resit Examination** at the undergraduate level in the Faculty of Engineering. A student who fails an examination is required to repeat the module in the following academic year. Courses **may be** offered during the Summer School period and students who pass these examinations are credited with the marks obtained.

5.5 Students on Grade Boundaries

Examinations at the University of the West Indies are subject to a system of second examination. Thus, scripts of students which fall just short of the passing mark have been scrutinised separately by two examiners.

After this process, there is no further consideration for “grade boundaries”. Students who have not achieved the pass mark in a specific course are deemed to have failed the course and are required to repeat it. However, the University allows students to appeal for review of the examination script with the examiner or re-mark of the examination script by an independent examiner (neither the original first nor second examiner). [As per item 141 of The Examinations Regulations: http://sta.uwi.edu/resources/documents/Exam_and_GPA_regulations.pdf].

5.6 Leave of Absence

In cases where a student needs to leave campus before completing the semester or needs to be away from campus for a period of time, please refer to the following University guidelines: https://sta.uwi.edu/admissions/undergrad/faqs_absence.asp

5.7 Required to Withdraw (RTW) from the programme of study

A student with a **GPA of less than 2.00 (for those registered under the SOI Section) and less than 1.00 (for students registered under the ENC Section)** in any given semester, is placed on **warning** and if his/her **GPA does not increase to 2.00 (for SOI candidates and 1.00 (for ENC candidates) or above in the subsequent semester**, the student is automatically **required to withdraw** from the system for a period of one (1) academic year.
Students who are on “Required to Withdraw” at the end of the first or second semester of any academic year can attend the Summer School, but the results obtained will not affect their status.

It is the responsibility of the student (who is required to withdraw) to re-apply to the Admissions Office, at least three (3) months prior to the time they are supposed to return to the University.

5.8 Grade Point Average

For details of the University’s Grading Scheme and the Department’s Award Classification:
http://sta.uwi.edu/resources/documents/GPAbooklet.pdf
https://sta.uwi.edu/eng/ugrad/ClassificationofDegree.asp

5.9 Graduation Requirements

The following minimum number of credits are required for graduation:

(i) Mechanical Engineering - 95 credits
Industrial Engineering - 97 credits
Mechanical with a Minor in Biosystems - 96 credits

The requisite number of courses indicated in the schedules for different programmes in the ENGINEERING FACULTY BOOKLET – Undergraduate Regulations & Syllabuses
http://sta.uwi.edu/faculty-booklet-archive, must also be passed.

(ii) All the prescribed courses must be passed before graduation. All core/compulsory courses must be completed. Students who have failed an elective course can choose to repeat the failed course or do another elective course instead. Students who, in the first semester, have failed elective courses are encouraged to register for make-up elective courses in the second semester if they have not registered for the maximum number of courses already.
5.10 Level 3 Schedule

The Level 3 schedule of courses for each programme in the Department is specified in the ENGINEERING FACULTY BOOKLET – Undergraduate Regulations & Syllabuses http://sta.uwi.edu/faculty-booklet-archive. Note that students are allowed course options (electives) at Level 3. Students must attend Academic Advising to ensure that their chosen electives are currently being offered. Note also that students are required to select course options from streams of specialisation for the Mechanical Engineering programme while there are no specialisation streams for the Industrial and Mechanical with a Minor in Biosystems programmes (refer to Appendix E for details). These course options represent what the Department considers to be the minimum requirements for proficiency within the relevant stream for an engineer operating in the regional environment.
6. MENG 3019 / IENG3012
MECHANICAL/INDUSTRIAL ENGINEERING PROJECT

As part of the credit requirements for graduation, each student must complete an individual research, analytical or design and build project in his/her final year. This Mechanical/Industrial Engineering Project carries six (6) credits and is weighted at 20% of the graduate’s final Honours standing. The project is an essential component to the student’s education and training allowing him/her to practically apply and utilise the knowledge and skills developed throughout the programme toward the completion of a specific objective and is designed to bring out the students’:

(i) ability to arrange matters/subjects in proper priority;
(ii) time management skills;
(iii) ability to conduct and complete:
   • design/fabrication procedures;
   • research/analysis procedures;
(iv) ability to work with technical staff in fabricating prototypes;
(v) initiative, creativity/imagination and innovativeness;
(vi) ability to analyse results and properly report the findings (in terms of correct and appropriate language, clarity and presentation) concisely and in a timely manner, both in a written report and orally;
(vii) ability to identify, analyse and propose solutions to societal needs.

Students who fail the BSc Mechanical/Industrial Engineering Project must undertake a different project in the following academic year and are not allowed to graduate with an Honours degree. The following documents are available to all students registered for the Mechanical/Industrial Engineering Project via myeLearning (please follow this link to login: http://myelearning.sta.uwi.edu/login/index.php) :

- Guidelines for Preparing and Writing a Final Year Project
- Managing your Final Year Project
- Guidelines for Preparing a Project Log Book
(Please refer to Appendix H for Presentation dates)