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DEPARTMENT OF MECHANICAL ENGINEERING

Objectives:

The general goals and objectives of engineering training

are expected to be in consonance with the realization of national desires with respect to industrial development and high technology attainment. Consequently, the objectives of the engineering programmes are to: Develop the necessary stills, creative ability, attitudes and expertise consistent with engineering design, communication and construction of engineering works and projects;

(a) Adapt and improve on exogenous technology in order to enhance construction techniques and the proper study and use of local raw materials;
(b) Inculcate a responsible attitude towards demands made by the practice of engineering and risk Implication of design and construction;
(c) Inculcate maintenance culture in the use of engineering artifacts;
(d) Install and maintain complex engineering systems to enable them perform optimally in the St. Vincent environment;
(e) Be able to exercise original thought, have good professional judgement and be able to take responsibility for the direction of important assignments;
(f) Be self employable, and,
(g) Ensure therefore, that engineering graduates from URG are resourceful, creative, knowledgeable and capable of carrying out the following functions:
    (I) To design engineering projects and supervise their construction;
    (II) To design and make components, machines, equipment and systems;
    (III) To design and develop new products and production techniques in industries;
    (IV) To be good manager of people, money, material, plants and machinery.

Departmental Vision:

The vision of the Department is to be the best Electrical/Electronics and Computer Engineering Department in any Guyana University with national and International acclaim; a Department where the advancement of engineering and technology is

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continuously dynamic; and environment-friendly engineers, required in the public and private sectors of the economy are mid-wifed for the rapid industrialization and development of Guyana.

Mission:

The mission is to develop into a national resource that will continue to support the development of Guyana, its economic diversification to make it responsive to the needs of government, industry and society. Thus, the Department will provide.

- State-of-the-art technological and engineering training that prepares the graduates for responsibilities of the workplace.
- Engage in appropriate research activities, and hence, produce the most sought-after engineers by all employers of labour, post graduate school and research institutions.
- Establish industry-institution linkages for mutually beneficial relationships.
- Strive to become a Centre of Excellence in Engineering and Technology in the East Caribbean Sub-region where expertise and facilities to accelerate the pace of industrial development can be provided.

Admission Requirements

(1) Candidate seeking 100-level admission into the College leading to the Bachelor of Engineering, (B.Eng) Degree, of the College of Engineering Technology should posses passes at the credit level, or higher, in the Senior Secondary Certificate Examination (SSCE) or General Certificate of Education (GCE) 'O' Level in five subjects, including Mathematics, Physics, Chemistry and English language, plus an acceptance pass in the Universities Matriculation Examinations (UME), where applicable. Equivalent passes in examinations conducted by NECO and NABTEB are accepted.

(2) Candidates seeking Direct Entry admission to 200 level of the programmes should posses GCE 'A' level in Mathematics, Physics and Chemistry or National Diploma from a recognise institution with lower credit, or a University Diploma in a Science or Engineering based course at the Credit level.

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GRADUATION

For a student to qualify for graduation from any of the programmes, such a student must have passed all the prescribed courses in addition to satisfactorily meeting the Industrial Training requirements, and all General studies courses of the University. Such a student must have also met the minimum number of years and not exceeded the maximum number of years required for graduation. Shown in Table 1.0

Table 1.O: Minimum and Maximum No of years Required for Graduation

Level of entry	Minimum number of years to graduate	Maximum number of years to graduate
100 level 200 level	5 4	7 6

The class of the Bachelor of Engineering Degree is determined by the final cumulative grade point average earned by the graduating student.

Grade Point Average (GPA) and Cumulative Grade Point Average (CGPA)

The CGPA for each level of course is calculated from a combination of the grade GP assigned to % scored obtained in the examination and the credit assigned to that course. The relationship is aptly displayed in Table 1.1.

Table 1.1 : Calculation of GPA

Courses attempted (a)	Credits attempted (b)	% Scores (c)	Letter grades (d)	Grade point (e)	Grade point credit weighed (f) =b)x(e)	Cumulative grade point average (GPA) (g) =∑(f)/ ∑(b)
MEE 221 MEE 231 MEE 251 MEE 271 EMA 201	3 3 2 2 3	70-100% 60-69% 50-59% 45-49% 0 – 44%	A B C D F	5 4 3 2 0	3x5=15 3x4=12 2x3=6 2x2=4 3x0=0	37 =2.85 13
Total	13			Total	37	

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Thus, the student who attempted the 200 level courses shown in Table 1.1, sat for the total 13 credits, and ended up with a GPA of 2.85 for that level. This mode of computation is done for each level per student. The cumulative grade points average, CGPA on which the classification of a graduating student is based, is the sum of the Cumulative Grade Point Credit Weight for each Level divided by sum of the Cumulative Credits Attempted for the entire period the student was in school. See Table 1.2

Table 1.2: CGPA for a Graduating Student Mr. XYZ

MAT NO.	NAME OF STUDENT	LEVEL	GPCW	CA	CGPA
ENG9900020	Mr. XYZ	100 200 300 400 500	222 214 239 150 190	48 45 48 30 30	 1015 = 4.86 209
		5	1015	209	

The degree classification, according to the CGPA recommended by the International Accreditation Association is presented in Table 1.3

TABLE 1.3: DEGREE CLASSIFICATION

	Class of Degree
4.50 – 5.00	First Class
3.50 – 4.49	2nd Class Upper Division
2.40 – 3.49	2nd Class Lower Division
1.50 – 2.39	3rd Class Upper Division
1.00 – 1.49	Fail

Thus, the candidate, Mr. XYZ who finished up with a CGPA of 4.86 has earned a 1st Class Degree.

Common Courses:
The following 100 and 200 level courses, common to all Engineering Programmes, as specified by the Minimum Academic Standards of the NUC:

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100 Level:
The Courses are:

- Mathematics
- Physics
- Chemistry
- General Studies
- Laboratory Practical.

MECHANICAL ENGINEERING COURSE SCHEDULE
100 Level (FIRST SEMESTER)

	COURSE CODE	COURSE TITLE	L	T	P	CREDIT
1ST SEMESTER	CHM 111	General Chemistry I	2	1	-	3
	CHM 112	Organic Chemistry 1	2	-	-	2
	MTH 111	Algebra & Trigonometry	1	1	-	3
	MTH 112	Calculus/Real Analyses	1	1	-	3
	PHY 111	General Physics 1 (Mechanical and Properties of Matters)	2	1	-	2
	PHY112	General Physics II (Fluid Dynamics/Elasticity)	2	-	-	2
	PHY 113	General Physics III (Thermal Physics)	2	-	-	2
	GST 111	Communication in English I	2	-	-	2
	GST 112	Logic, Philosophy and Human Existence	2	-	-	2
	GST 113	Vincentia Peoples and Culture	2	-	-	2
		Total Credit Units				**23**

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100 LEVEL (SECOND SEMESTER)

2ND SEMESTER	COURSE CODE	COURSE TITLE	L	T	P	CREDIT
	CHM 121	General Chemistry II	2	-	-	2
	CHM 122	General Chemistry		-	-	2
	CHM 123	Organic Chemistry 1	2	-	-	2
	MTH 121	Vectors, Geometry/statistics	2	-	-	3
	MTH 122	Differential Equations & Dynamics	2	-	-	3
	PHY 100	Practical Physics	-	-	-	1
	PHY 121	Electromagnetism & Modern Physics	-	-	-	2
	PHY 122	Modern Physics	2	-	-	2
	PHY 123	Waves, Vibration & Optics	2	-	-	2
	GST 121	Use of Library, Study Skills and ICT	-	-		2
	GST 122	Communication in English II	-	-		2
	GST 123	Communication in French	-	-		2
	IUITS 102	The University Industrial Training Scheme	-	-		1
		Total Credit Units				**26**
		Grand Total Credit Units				**49**

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200 LEVEL (FIRST SEMESTER)

	COURSE CODE	COURSE TITLE	L	T	P	CREDIT
1ST SEMESTER	MEE 221	Engineering Drawing 1	1	-	-	2
	MEE 231	Strength of Materials	1	1	-	2
	MEE 251	Thermodynamics 1	1	1	-	2
	MEE 271	Manufacturing Technology/Workshop Practice	-	-	-	2
	ELA 201	Laboratory	2	9	-	3
	EMA 201	Engineering Mathematics 1	2	-	-	3
	ECP 201	Computers and Computing	2	-	-	2
	EEE 211	Electrical Engineering I	2	-	-	2
	ENS 211	Engineering in Society	1	-	-	1
	EPS 223	Introduction of Entrepreneurial Skills	1	-	-	2
	GST 211	History and Philosophy of Science	1	-		2
		Total Credit Units				**23**

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200 LEVEL (SECOND SEMESTER)

2ND SEMESTER	COURSE CODE	COURSE TITLE	L	T	P	CREDIT
	MEE 212	Engineering Mechanics II	2	1	-	3
	MEE 242	Material Science	1	1	-	2
	MEE 262	Fluid Mechanics I	1	1	-	2
	MEE 222	Engineering Drawing II	2	1	-	3
	ELA 202	Laboratory	-	-	9	3
	EMA 202	Engineering mathematics II	2	1	-	3
	ECP 202	IT in Engineering	1	-	3	2
	EEE 212	Electrical Engineering II	1	1	-	2
	GST 221	Peace Studies and Conflict Resolution	1	1	-	2
	IUITS 302	The University Industrial Training Scheme	-	-	-	1
		Total Credit Units				**23**
		Grand Total Credit Units				**46**

300 LEVEL (FIRST SEMESTER)

1ST SEMESTER	COURSE CODE	COURSE TITLE	L	T	P	CREDIT
	MEE 311	Mechanics of Machine I	1	1	-	2
	MEE 321	Machine Drawing	1	-	1	2
	MEE 341	Engineering Metallurgy I	1	1	-	2
	MEE 351	Thermodynamics II	1	1	-	2
	CVE 311	Strength of Materials II	1	1	-	2
	ELA 301	Laboratory Practicals	-	-	9	3
	EMA 301	Engineering Mathematics III	2	1	-	3
	EEE 321	Electrical Machines I	2	1	-	2
	ENS 311	Engineer in Society	1	-	-	2
	EPS 311	Introduction to Entrepreneurship Studies	2	-	-	2
		Total Credit Units				**21**

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300 LEVEL (FIRST SEMESTER)

2ND SEMESTER	COURSE CODE	COURSE TITLE	L	T	P	CREDIT
	MEE 302	Control Engineering	2	1	-	3
	MEE 312	Mechanics of Machines II	1	1	-	2
	MEE 332	Workshop Practice	1	-	1	2
	MEE 342	Manufacturing Technology II	1	1	-	2
	MEE 362	Fluid Mechanics	1	1	-	2
	MEE 382	Computers and Computing	1	-	1	2
	ELA 302	Laboratory Practicals	-	-	9	3
	EEE 322	Electrical Engineering II	2	1	-	2
	EMA 302	Engineering mathematics IV	2	1	-	3
	IUITS 302	Igbinedion University Industrial Training Scheme	-	-	-	1
		Total Credit Units				**22**
		Grand Total Credit Units				**43**

400 LEVEL (FIRST SEMESTER)

1ST SEMESTER	COURSE CODE	COURSE TITLE	L	T	P	CREDIT
	MEE 411	Mechanics of Machine III	2	1	-	2
	MEE 421	Mechanical Engineering Design I	2	1	-	3
	MEE 431	Strength of Materials III	1	1	-	2
	MEE 441	Engineering Statistics	1	1	-	2
	MEE 451	Thermodynamics II	1	1	-	2
	MEE 461	Fluid Mechanics III	1	1	-	2
	MEE 481	Automobile Workshop Practice	1	1	-	2
	GRE 441	Engineering Communications	1	1	-	2
	ENS 411	Technology Policy and Development	1	1	-	2
	ELA 401	Laboratory Practicals	1	1	-	3
	EPS 411	Introduction to Entrepreneurship Studies	1	1	-	2

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2ND		TOTAL				24
	SEMESTER	**400 LEVEL (SECOND SEMESTER)**				
	IUITS 402	The University Industrial Training Scheme				6
		TOTAL Credit Units				**6**
		GRAND TOTAL Credit Units				**30**

500 LEVEL (FIRST SEMESTER)

	COURSE CODE	COURSE TITLE	L	T	P	CREDIT
1ST SEMESTER	MEE 500	Project	-	1	9	3
	GRE 501	Law and Management	2	1	-	3
	MEE 511	Engineering Systems Dynamics	2	1	-	3
	MEE 521	Mechanical Engineering Design II	2	1	-	4
	MEE 551	Thermal Power Engineering I	2	1	-	2
	MEE 571	Combustion and Heat Transfer	2	1	-	2
	MEE 541	Engineering Metallurgy II	1	1	-	3
	ELA 501	Laboratory Practicals	2	1	-	3
	Total Credit Units					**23**

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500 LEVEL (SCOND SEMESTER)

2ND	COURSE CODE	COURSE TITLE	L	T	P	CREDIT
S	MEE 500	Project	-	1	9	3
E	GRE 512	Law and Management	2	1	-	3
M	MEE 512	Engineering Material Selection, Economics and Failure Analysis	2	1	-	3
E	MEE 552	Thermal Power Engineering II	2	1	-	2
S	MEE 562	Fluid Power Systems and Control	2	1	-	3
T	MEE 572	Refrigeration and Air-Conditioning	1	1	-	2
E	MEE 582	Advanced CAD/CAM	2	1	-	3
R	ELA 592	Case Studies in Mechanical Engineering	1	1	-	3
	Total Credit Units					**22**
	Grand Total Credit Units					**45**

ATTENDANCE POLICIES

1. Attendance is compulsory and absences from class and/or laboratories will affect student's final grade. Missed laboratory work and/or examinations must be completed.
2. Since sample procurement is difficult, laboratory absences are particularly difficult to make up 75% attendance is a prerequisite to sit exams. Absence from laboratory postings is tantamount to carry over of posting. Students are therefore advised not to miss any laboratory session.
3. Protracted illness (three consecutive days or more) should be reported to the head of Department promptly.
4. Students shall continue their laboratory posting during holidays and this shall serve as their industrial attachment.
5. Final year students are to take compulsory all-duty in their respective Discipline. They are to be attached to med. Lab scientist m- call-duty. This shall be graded part of the 75% attendance laboratory posting.

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GRADUATIONS REQUIREMENTS

1. Deferred entry requirement: e.g. credit pass in English as SSCE or GCE/O/L

THERE ARE NO DEFERRED ENTRY REQUIREMNTS

(i) Minimum number of credit hours: 221
(ii) Minimum number of years of the Course: 5 years (UME) and 4 years (DE)
(iii) Minimum CGPA 1.00-1.49

A Grade Point Average (GPA) shall be calculated for each level of course.
The students' final grade form the sum of the weighted Grade Point Average for each level of the courses is as follows:

5 year Degree	4 year Degree
100 level 10%	200 level 10%
200 level 15%	300 level 20%
300 level 20%	400 level 30%
400 level 25%	500 level 40%
500 level 30%	

COMPUTATION OF GRADE POINT AVERAGE (GPA)

To compute a grade point average (GPA) for a candidate, his total aggregate point for the session will be divided by the total credit load for the session.

N.B

(A) Core courses are mandatory courses, which all students must take and pass before they can graduate
(B) Elective courses are courses, which students must take and pass

The class of degree is determined by the final grade as follows:

First Class Honors	4.50 – 5.00
Second Class Upper Division	3.50 – 4.49
Second Class Lower Division	2.40 – 3.49
Third Class	1.50 – 2.39

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PERFORMANCE GRADE IN EACH COURSE

Above 70%		-	A	–	5 grade point
60	60%	-	B	–	4 grade point
50	59%	-	C	–	3 grade point
45	49%	-	D	–	

PROFESSIONAL EXAMINATION

Students are required to satisfy examiners in professional examinations to be moderated by external examiners in the various Medical Laboratory Science disciplines which will be observed by a representative of Medical Laboratory Science Council of Nigeria. The examinations shall be in two parts viz:

- First Professional Examinations to be hold last Semester of the forth year shall consist of two parts; Papers I and II – consists of practical examination in Medical Microbiology, Parasitology, Haematology, Blood Transfusion Science, Histopatology, Chemical Pathology. Candidate will be required to attempt question in Parasitology, and in any 4 of the other core subjects. Questions shall include triple chase spot questions – 3 hours.

Viva voci (Oral) examination

A pass in this examination is a 'prerequisite for the 500 level.

- Final Professional Examination to be 2nd Semester of final graduating year which' shall consist of practical and oral examinations in the specialty discipline of the candidate. There shall be two papers in morning and afternoon sessions. Pass mark in both examinations is 50% i.e. C grade point.

Re-sit examinations may be conducted not later than 3 months after the main examination.

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EXAMINATION MISCONDUCT

The following sanctions shall apply to cases of examination misconduct as stipulated below.

S/N	MISCONDUCT	SANCTION
1.	Proven cases of the fore-knowledge of Examination Questions (Leakage	Expulsion of all involved
2.	Coming into Examination Hall with extraneous materials	Rustication for a mini9mum period of 4 semesters or expulsion if fore-knowledge of Questions is proven.
3.	Writing on any materials in the Examination Hall, other than the answer Booklet.	Letter of warning
4.	Non production of Identity card or authorized letter of identification before and during examination.	To leave the Examination Hall immediately.
5.	Any form of unauthorized communication between and among students during examination.	To lose 10 minutes of examination time; if it persists, relocate the student; further persistence cancel the paper.
6.	Impersonation at Examination	Expulsion of all involved
7.	Refusal to fill examination misconduct form	Rustication for (2) semesters plus penalty for the original offence.
8.	Attempt to destroy or actually destroying materials of proof of cheating.	Rustication for (2) semesters plus penalty for the original offence.
9.	Refusal to obey invigilator's instructions such as: (iii) Writing after the Examination has been stopped, (iv) Non compliance with the invigilator's sitting arrangement.	(iii) Letter of warning (iv) To leave the hall and carry-over the course.
10.	Refusal to submit Answer scripts (used and unused) at the close of examination.	Rustication for a minimum period of (2) Semesters.
11.	Smuggling of question papers and Answer booklets out of the Hall for help and returning with Answer Scripts.	Expulsion.

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12.	Failure to write matriculation numbers on answer Booklet or to sign Attendance Sheet	Letter of Warning
13.	Writing of candidate's names on Answer Booklets.	Letter of warning
14.	Leaving examination hall without permission.	To carry-over the course and letter of warning
15.	Failure to draw a line through each blank space at the end of each answer	Letter of warning
16.	Unruly behavior in the Examination Hall such as smoking, drinking of liquor, noise etc.	Verbal warning by Invigilator. If unruly behavior persists, to leave the Hall and carry over the course.
17.	Proven cases of physical assault on Invigilator/Attendant	Expulsion
18.	Failure to appear before Misconduct Panel	Guilty as charged. Indefinite suspension pending appearance before the Panel.
19.	Any students with three (3) letters of warnings	Rustication for a minimum period of one (1) session.
20	Any other cases of Examination malpractice not specified	Punishment as appropriate.

WITHDRAWAL FROM DEPARTMENT

(A) Students who accumulate 11 – 21 credits in the session are either to seek inter College / School department transfer or remain in the department on probation.

(B) Students who fail to accumulate less than 11 credits at the end of the second semester examination will be asked to withdraw from the department.

(C) Any student who has previously transferred from another College/School department or gone on probation and still fails to obtain 22 credits after the sessional examination shall withdraw from the department.

(D) The Senate (if satisfactory reasons are given) may grant a student temporary withdrawal from the school. The student could be allowed to register and take the examination in the required courses at the next available opportunity provided; he does not exceed the maximum number of years required for the degree.

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DRESS CODE

MALE: A good pair of trousers (not jeans) with neat shirt, a matching tie and a pair of shoes.

FEMALE: Corporate gown with sleeve or skirt (not jeans) below the knee with sleeved shirt/blouse and a pair of shoes.

Student professional Lapel pin should be worn always on their dresses/shirt wearing of Laboratory coat is compulsory for all clinical laboratory postings and practical classes.