

MECHANICAL DEPARTMENT

Chair: Mr. Raphael Johnson

This department manages five programmes. They are Automotive Technology, Automotive Collision Repair, Machine Shop Practice, Welding and Industrial Engineering Technology. We are also preparing to introduce a programme in Marine Repairs.

A staff of dedicated and experienced professionals is ready to serve.

Programs offered and Teaching Faculty

No.	Programs Offered	Teaching Faculty
1.	Associate of Applied Science Degree in Industrial Engineering Technology Level II Certificate in Industrial Engineering Technology	Mr. Martin Williams Mr. Michael Church
2.	Level II Certificate in Automotive Technology Level I Certificate in Automotive Technology Competency Certificate in Automotive Technology	Mr. Volney Chasteau Mr. Rhett Dopwell
3.	Level II Certificate in Automotive Collision Repair Technology Level I Certificate in Automotive Collision Repair Technology Competency Certificate in Automotive Collision Repair Technology	Mr. Cuthbert Stuart (adjunct)
4.	Level II Certificate in General Mechanical Engineering (Machine Shop Technology) Level I Certificate in General Mechanical Engineering (Machine Shop Technology) Competency Certificate in General Mechanical Engineering (Machine Shop Technology)	Mr. Jorge Infante Mr. Andres Scull
5.	Level II Certificate in Welding Technology	Mr. Eduardo Fages (adjunct)

	Level I Certificate in Welding Technology	
	Competency Certificate in General Mechanical Engineering (Machine Shop Technology)	

PROGRAMMES

Associate of Applied Science Degree in Industrial Engineering Technology Level II Certificate in Industrial Engineering Technology

ENTRY REQUIREMENTS

- **Associate Degree and Level II Certificate:** Applicants must have passes in four (4) CSEC/GCE subjects including English at levels I, II or III. Mathematics would be an asset. However, students without the English requirement may be given provisional entry with the proviso that the student submits evidence of having acquired the equivalent qualification before the beginning of the second year.
- Mature students (25 years and older) with the relevant work experience will be considered.

PROGRAM OUTLINE

Course Number	Course Name	Credits
MAJOR COURSES		
IET110	Introduction to Industrial Engineering	2 Credits*
IET111	Quality Assurance	3 Credits*
IET121	Maintenance Management and Control	3 Credits*
IET122	Facility Design	3 Credits
IET123	Planning and Control of Production	3 Credits*
IET211	Human Dimensions	3 Credits
IET212	Performance Measurement and Control of Operation	3 Credits*
IET221	Introduction to Unitary Operations	3 Credits*
PSY105	Industrial Psychology	3 Credits*
OHS101	Occupational Health and Safety	3 Credits*
IET213	Industrial Hygiene and Toxicology	3 Credits
ACC242	Costing Systems	3 Credits*
IET222	Advanced Statistics	3 Credits
IET130	Independent Study/ Project/Internship	3 Credits*
RELATED AREAS <i>Please note that Technical Drawing BTG110, Introduction to Statistics MAT101 and Metal Working: Principles and Practice MSE101 are requirements.</i>		
BTG 110	Architectural Drawing	2 credits*
MAT101	Introduction to Statistics	3 credits*

CAD 211	Computer aided design	3 credits
MSE101	Metal Working: Principles and Practices	3 credits*
PLB 110	Related Plumbing	2 credits
ELY111	Related Electricity & Electronics	2 Credits
GENERAL EDUCATION		
MAT110	Fundamentals of Mathematics	3 credits*
MAT121	Applied Mathematics I	3 credits
COM100	English & Communication I	3 credits*
COM121	English & Communication II	3 credits*
SOS111	Social Skills	3 credits
ENT211	Entrepreneurial Skills	3 credits
ICT110	Introduction to Computers	3 credits*
CAS101	Caribbean Society and Culture	3 Credits
PHI200	Critical Thinking	3 Credits
COS101	Community Service	1 Credit
Total Credits Possible for Program		81Credits

** These courses are required for Level II Certification*

GRADUATION REQUIRMENTS

1. A candidate for graduation must meet the requirements in one of the following areas:

- **Associate Degree:** The student must accumulate a minimum of 72 credits, 38 of which must be within the majors, 12 in the related and 22 in General Education.

For the above, the students will required to obtain credits from approved courses in the following areas: 6 credits from Communication Skills, 3 credits from Mathematics, 3 credits from Computing, 3 credits from Critical Thinking, 3 credits from Caribbean Studies, 3 credits from Social Skills, and 1 credit from Community Services / Physical Education.

- **Level 11 Certificate:** A student must obtain a minimum of 55 credits, 30 of which must be within the majors, 10 credits in related areas, and 15 credits in General Education.

For the above, students are required to successfully complete 3 credits of Communication Skills, 3 credits of Mathematics, 3 credits of Social Skills, 3 credits of Entrepreneurial Skills, and 3 credits of Computing.

2. A minimum of 85% attendance is required.

3. Obtain a cumulative Grade Point Average (GPA) of at least 2.00.

Level II Certificate in Automotive Technology/Level I Certificate in Automotive Technology/Competency Certificate in Automotive Technology

ENTRY REQUIREMENTS

- **Level II and Level I Certificate:** Applicants must have a minimum of three (3) CSEC/GCE subjects. Students with passes in Mathematics and English Language will have an advantage.
- Mature students (25 years and older) with relevant employment experience and proven knowledge of the field will be considered.

PROGRAMME OUTLINE

Course Number	Course Name	Credits
MAJOR COURSES		
AUT 111	Introduction to Automotive Mechanics	3 Credits*
AUT 112	Engine Fundamentals	3 Credits*
AUT 121	Electrical and Electronic systems	3 Credits
AUT 122	Fuel Systems	3 Credits
AUT 211	Exhaust and Emission Control systems	3 Credits
AUT 212	Clutches Transmission and Transaxles	3 Credits
AUT 221	Braking, Steering and Suspension systems	3 Credits
AUT 227	Individual/Student Project	3 Credits*
AUT 225	Internship (compulsory)	6 Credits*
RELATED AREAS		
BTG 110	Technical Drawing	2 credits

MSE 111	Bench Fitting Technology	3 Credits
WEL 211	Gas Welding	3 Credits
RAC 125	Air Conditioning for Auto	2 Credits
ELY 110	Related Electricity	2 Credits
GENERAL EDUCATION		
MAT110	Fundamentals of Mathematics	3 credits*
COM100	English & Communication 1	3 credits*
CAD 211	Computer Aided Designs	3 Credits
SOS111	Social Skills	3 credits
ENT211	Entrepreneurial Skills	3 credits
ICT110	Introduction to Computers	3 credits
Total Credits Possible for Program		60 Credits

GRADUATION REQUIREMENTS

1. A candidate for graduation must meet the requirements in one of the following areas:

- **Level 11 Certificate:** A student must obtain a minimum of 55 credits: 30 credits in the major courses, 10 credits in the related areas and 15 credits from general education disciplines. All major and related courses must be passed with at least a Grade “C”.

For the above, students are required to successfully complete 3 credits of Communication Skills, 3 credits of Mathematics, 3 credits of Social Skills, 3 credits of Entrepreneurial Skills, and 3 credits of Computing.

- **Level 1 Certificate:** A student must gain a minimum of 33 credits: 21 credits in the major courses, 6 credits in the related courses, and 6 credits in the general education courses. All major and related courses must be passed with at least a Grade “C”.

For the above, students are required to successfully complete 3 credits of Communication and 3 credits of Mathematics.

- **Competency Certificate:** A student who has successfully completed three majors with at least a ‘C’ grade in each, a ‘C’ grade from any related discipline, and passes in Mathematics and Communication is entitled to a competency certificate.

2. A minimum of 85% attendance is required.

3. Obtain a cumulative Grade Point Average (GPA) of at least 2.00.

Level II Certificate in Auto-Collision Repair Technology/Level I Certificate in Auto-Collision Repair Technology/Competency Certificate in Auto-Collision Repair Technology

ENTRY REQUIREMENTS

- **Level II and Level I Certificate:** Applicants must have a minimum of three (3) CSEC/GCE subjects at level III or better. Students with passes in Mathematics and English Language will have an advantage.
- Mature students (25 years and older) with relevant employment experience and proven knowledge of the field will be considered.

PROGRAMME OUTLINE

Course Number	Course Name	Credits
MAJOR COURSES		
ACR111	Fundamentals of Collision Repair	2 Credits
ACR113	Non-structural Repair 1	2 Credits
ACR214	Non-structural Repair 11	2 Credits
ACR112	Refinishing and Painting 1	2 Credits
ACR212	Refinishing and Painting 11	2 Credits
ACR121	Structural Damage Repair 1	2 Credits
ACR211	Structural Damage Repair 11	2 Credits
ACR122	Plastic Repair 1	2 Credits
ACR124	Collision Welding 1	2 Credits
ACR215	Collision and Welding	2 Credits
ACR231	Estimating Management & Appraisal	2 Credits
ACR135/235	Auto Collision Repair (Internship)	3 Credits
ACR223	Glass and Interior Installation	2 Credits
ACR224	Electrical Components	2 Credits
ACR227	Student Project	2 Credits
RELATED AREAS		
MSE 111	Bench Fitting Technology	3 Credits
RAC 125	Air Conditioning for Auto	3 Credits
MSE241	Mechanical Repair, Suspension, Steering, Alignment	3 Credits
GENERAL EDUCATION		

MAT110	Fundamentals of Mathematics	3 credits*
COM100	English & Communication 1	3 credits*
CAD 211	Computer Aided Designs	3 Credits
SOS111	Social Skills	3 credits
ENT211	Entrepreneurial Skills	3 credits
ICT110	Introduction to Computers	3 credits
Total Credits Possible for Program		58 Credits

GRADUATION REQUIREMENTS

1. A candidate for graduation must meet the requirements in one of the following areas:

- **Level 11 Certificate:** A student must obtain a minimum of 55 credits: 31 credits in the major courses, 9 credits in the related areas and 15 credits from general education disciplines. All major and related courses must be passed with at least a Grade “C”.

For the above, students are required to successfully complete 3 credits of Communication Skills, 3 credits of Mathematics, 3 credits of Social Skills, 3 credits of Entrepreneurial Skills, and 3 credits of Computing.

- **Level 1 Certificate:** A student must successfully complete three programme outcomes, 6 credits in the related courses, and 6 credits in the general education courses. All major and related courses must be passed with at least a Grade “C”.

For the above, students are required to successfully complete 3 credits of Communication and 3 credits of Mathematics.

- **Competency Certificate:** A student completing one of the programme outcomes with a minimum of a “C” grade, a grade “C” from any related discipline, and passes in Mathematics and Communication may be awarded a competency certificate in that area.

Programme Outcomes:

Upon successful completion of the Collision Repair programme the graduate will be able to:

- perform structural analysis and damage repair of vehicles (ACR111, ACR121, ACR211, ACR231, ACR124 and ACR215)
- paint or refinish vehicles or vehicle components (ACR111, ACR112, ACR122, ACR212)
- read and write estimates for repair of damaged vehicles (ACR111, ACR231)

- diagnose and service front end problems and electrical components (ACR111, ACR224, MSE241)
- repair and replace plastics and adhesives (ACR111, ACR223, ACR122)

2. A minimum of 85% attendance is required.

3. Obtain a cumulative Grade Point Average (GPA) of at least 2.00.

Level II Certificate in General Mechanical Engineering (Machine Shop Technology)/Level I Certificate in General Mechanical Engineering (Machine Shop Technology)/Competency Certificate in General Mechanical Engineering (Machine Shop Technology)

ENTRY REQUIREMENTS

- **Level II and Level I Certificates:** Applicants must have passes in a minimum of three (3) CSEC/GCE subjects. Students with passes in Mathematics and English Language will have an advantage.
- Mature students (25 years and older) with relevant employment experience in the field, and the correct aptitude will be considered.

PROGRAMME OUTLINE

Course Number	Course Name	Credits
MAJOR COURSES		
<i>Successful completion of MSE 225 and MSE 227 are required for Levels I and II Certification.</i>		
MSE 111	Bench Fitting Technology	3 Credits*
MSE 112	Centre Lathe Technology I	3 Credits*
MSE 123	Engineering Materials	3 Credits
MSE 211	Milling Machine Technology	3 Credits
MSE 221	Shaping Machine Technology	3 Credits
MSE 222	Centre Lathe Technology II	3 Credits*
MSE 223	Sheet Metal Technology	3 Credits
MSE 224	Grinding Technology	3 Credits
MSE 227	Individual/Student Project	3 Credits*
MSE 225	Internship	6 Credits*

RELATED AREAS		
WEL 112	Fundamentals of Arc Welding	3 Credits
WEL 211	Gas Welding	3 Credits
BTG 110	Technical Drawing	2 Credits
MSE 129	Blueprint & Schematic Reading	2 Credits
ELY 110	Related Electricity	2 Credits
GENERAL EDUCATION		
MAT110	Fundamentals of Mathematics	3 credits*
COM100	English & Communication 1	3 credits*
CAD 211	Computer Aided Designs	3 Credits
SOS111	Social Skills	3 credits
ENT211	Entrepreneurial Skills	3 credits
ICT110	Introduction to Computers	3 credits
Total Credits Possible for Program		63 Credits

** These courses are required for Level I Certification.*

GRADUATION REQUIREMENTS

1. A candidate for graduation must meet the requirements in one of the following areas:

- **Level 11 Certificate:** A student must obtain a minimum of 55 credits: 30 credits in the major courses, 10 credits in the related areas and 15 credits from general education disciplines. All major and related courses must be passed with at least a Grade “C”.

From the above, students are required to successfully complete 3 credits of Communication Skills, 3 credits of Mathematics, 3 credits of Social Skills, 3 credits of Entrepreneurial Skills, and 3 credits of Computers.

- **Level 1 Certificate:** A student must gain a minimum of 33 credits: 21 credits in the major courses, 6 credits in the related courses, and 6 credits in the general education courses. All major and related courses must be passed with at least a Grade “C”.

From the above, students are required to successfully complete 3 credits of Communication and 3 credits of Mathematics.

- **Competency Certificate:** A student who has successfully completed three majors with at least a ‘C’ grade in each, a ‘C’ grade from any related discipline, and passes in Mathematics and Communication is entitled to a competency certificate.

2. A minimum of 85% attendance is required.
3. Obtain a cumulative Grade Point Average (GPA) of at least 2.00.

Level II Certificate in Welding Technology/Level I Certificate in Welding Technology/Competency Certificate in Welding Technology

ENTRY QUALIFICATION

- **Level II and Level I Certificate:** Applicants should have a minimum of 3 CSEC/GCE subjects. Mathematics and English Language will be an advantage.
- Mature students (25 years and older) with relevant employment experience will be considered.

PROGRAMME OUTLINE

Course Number	Course Name	Credits
MAJOR COURSES		
<i>Successful completion of MSE 225 and MSE 227 are required for Levels I and II Certification.</i>		
WEL 111	Introduction to Welding	3 Credits*
WEL 112	Fundamentals of Arc Welding	3 Credits*
WEL 121	Arc Welding II	6 Credits*
WEL 211	Gas Welding	3 Credits*
WEL 212	Pipe Welding, Vertical & Overhead Welding	3 Credits
WEL 222	MIG and TIG Welding	3 Credits
WEL 227	Individual/Student Project	3 Credits
WEL 224	Internship	6 Credits*
RELATED AREAS		
MSE 111	Bench Fitting Technology	3 Credits
BTG 110	Technical drawing with Freehand Sketching	3 Credits
AUT 125	Auto Mechanics	1 Credit
ELY 100	Basic Electricity	3 Credits
GENERAL EDUCATION		
MAT110	Fundamentals of Mathematics	3 credits*

COM100	English & Communication 1	3 credits*
CAD 211	Computer Aided Designs	3 Credits
SOS111	Social Skills	3 credits
ENT211	Entrepreneurial Skills	3 credits
ICT110	Introduction to Computers	3 credits
Total Credits Possible for Program		58 Credits

GRADUATION REQUIREMENTS

1. A candidate for graduation must meet the requirements in one of the following areas:

- **Level 11 Certificate:** A student must obtain a minimum of 55 credits: 30 credits in the major courses, 10 credits in the related areas and 15 credits from general education disciplines. All major and related courses must be passed with at least a Grade “C”.

For the above, students are required to successfully complete 3 credits of Communication Skills, 3 credits of Mathematics, 3 credits of Social Skills, 3 credits of Entrepreneurial Skills, and 3 credits of Computing.

- **Level 1 Certificate:** A student must gain a minimum of 33 credits: 21 credits in the major courses, 6 credits in the related courses, and 6 credits in the general education courses. All major and related courses must be passed with at least a Grade “C”.

For the above, students are required to successfully complete 3 credits of Communication and 3 credits of Mathematics.

- **Competency Certificate:** A student who has successfully completed three majors with at least a ‘C’ grade in each, a ‘C’ grade from any related discipline, and passes in Mathematics and Communication is entitled to a competency certificate.

2. A minimum of 85% attendance is required.

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