COURSE OUTLINE : CAM 211
D Credit – Degree Applicable
COURSE ID 001369
NOVEMBER 2020

COURSE DISCIPLINE : CAM

COURSE NUMBER : 211

COURSE TITLE (FULL) : Intermediate Milling

COURSE TITLE (SHORT) : Intermediate Milling

CATALOG DESCRIPTION

CAM 211 (Computer Aided Manufacturing) is an intermediate course in the use of computers to aid in the programming of numerical control milling machines in manufacturing.

Total Lecture Units: 3.00

Total Laboratory Units: 0.00

Total Course Units: 3.00

Total Lecture Hours: 54.00

Total Laboratory Hours: 0.00

Total Laboratory Hours To Be Arranged: 0.00

Total Contact Hours: 54.00

Total Out-of-Class Hours: 108.00

Prerequisite: CAM 210 or equivalent.

ENTRY STANDARDS

	Subject	Number	Title	Description	Include
1	CAM	210	Computer Aided Manufacturing Basic Milling	compile a reference guide to be used in following classes later in the field;	Yes
2	CAM	210	Computer Aided Manufacturing Basic Milling	demonstrate organizational skills by completing the reference guide and submitting it for a grade at the end of the course;	Yes
3	CAM	210	Computer Aided Manufacturing Basic Milling	perform basic drawing of geometric shapes and translating them into the proper numerical format required by the equipment;	Yes
4	CAM	210	Computer Aided Manufacturing Basic Milling	demonstrate a basic knowledge of the principles required to successfully complete a simple project.	Yes

EXIT STANDARDS

1 perform a series of intermediate Computer Numerical Control (CNC) machining operations and exercises;
2 perform intermediate drawings of geometric shapes and translate them into the proper numerical format required by the equipment;
3 evaluate the principles required to successfully complete advanced Computer numerical control (CNC) programming projects.

STUDENT LEARNING OUTCOMES

1 demonstrate intermediate skills through projects on the Computer Numerical Control (CNC) milling machine;
2 articulate the appropriate uses for each Computer Numerical Control (CNC) machine and tooling, including manufacturing processes;
3 produce parts accurately on the Computer Numerical Control (CNC) machines using a wide range of techniques.

COURSE CONTENT WITH INSTRUCTIONAL HOURS

	Description	Lecture	Lab	Total Hours
1	General Introduction • Scope or curriculum • Course requirements • Grading standards • Methods of work preparation	7	0	7
2	Familiarization • Overview of textbook requirements • Overview of workbook requirements	3	0	3

3	Levels • Assigning • Coloring • Numbering • Naming	6	0	6
4	Three Dimensional Drawing • Lines • Arcs • Translation	6	0	6
5	Dimensioning: All views	3	0	3
6	Surfaces • Coons • Lofted • Lined • Ruled	12	0	12
7	Splines • Creation • Modification • Uses	6	0	6
8	Contoured Surfacing • Radius end mill • Ball end mill • Form cutters	6	0	6
9	Review	5	0	5
				54

OUT OF CLASS ASSIGNMENTS

1 programming assignments;
2 reading assignments.

METHODS OF EVALUATION

1 quizzes;
2 projects (e.g. rectangular block, bottle opener);
3 final examination.

METHODS OF INSTRUCTION

- [x] Lecture
- [ ] Laboratory
- [ ] Studio

- [x] Discussion
- [ ] Multimedia
- [ ] Tutorial
- [ ] Independent Study
- [ ] Collaboratory Learning
- [x] Demonstration
- [ ] Field Activities (Trips)
- [ ] Guest Speakers
- [ ] Presentations

TEXTBOOKS

Title	Type	Publisher	Edition	Medium	Author	IBSN	Date
Instructor mastercam workbook							