COURSE OUTLINE: AMF101 - INT. MANUFACT. SYS.

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Course Code: Title	AMF101: INTEGRATED MANUFACTURING SYSTEMS
Program Number: Name	4069: AUTOMATED MANUFACT.
Department:	ROBOTICS GRADUATE CERTIFICATE
Academic Year:	2023-2024
Course Description:	In this course, students are introduced to Integrated Manufacturing Processes involving a variety of materials used in modern manufacturing industries. The topics cover an overview of common production machines, automated systems, robotics, computer controlled machines, modern material handling processes, inspection systems and process control. The course will include topics involving economics of integrated manufacturing as well as the societal and environmental issues related to manufacturing.
Total Credits:	3
Hours/Week:	3
Total Hours:	42
Prerequisites:	There are no pre-requisites for this course.
Corequisites:	There are no co-requisites for this course.
This course is a pre-requisite for:	AMF201, AMF205
Vocational Learning Outcomes (VLO's) addressed in this course: **Please refer to program web page for a complete listing of program outcomes where applicable.**	**4069 - AUTOMATED MANUFACT.** VLO 1 Solve automated manufacturing problems found in a typical industrial environment by applying engineering principles and decision-making strategies. VLO 2 Analyze and synthesize technical data to develop graphics and related technical documents conforming to engineering standards. VLO 7 Exercise professionalism, leadership, and effective communication in an industrial work setting to increase overall productivity and support a positive work environment.
Essential Employability Skills (EES) addressed in this course:	EES 1 Communicate clearly, concisely and correctly in the written, spoken, and visual form that fulfills the purpose and meets the needs of the audience. EES 2 Respond to written, spoken, or visual messages in a manner that ensures effective communication. EES 4 Apply a systematic approach to solve problems. EES 5 Use a variety of thinking skills to anticipate and solve problems. EES 6 Locate, select, organize, and document information using appropriate technology and information systems. EES 7 Analyze, evaluate, and apply relevant information from a variety of sources. EES 9 Interact with others in groups or teams that contribute to effective working relationships and the achievement of goals.

	EES 10 Manage the use of time and other resources to complete projects. EES 11 Take responsibility for ones own actions, decisions, and consequences.
Course Evaluation:	Passing Grade: 50%, D A minimum program GPA of 2.0 or higher where program specific standards exist is required for graduation.
Other Course Evaluation & Assessment Requirements:	Grade Definition Grade Point Equivalent A+ 90 - 100% 4.00 A 80 - 89% 4.00 B 70 - 79% 3.00 C 60 - 69% 2.00 D 50 - 59% 1.00 F (Fail)49% and below 0.00 CR (Credit) Credit for diploma requirements has been awarded. S Satisfactory achievement in field /clinical placement or non-graded subject area. U Unsatisfactory achievement in field/clinical placement or non-graded subject area. X A temporary grade limited to situations with extenuating circumstances giving a student additional time to complete the requirements for a course. NR Grade not reported to Registrar`s office. W Student has withdrawn from the course without academic penalty. Smart watches, smart phones and similar devices are not allowed during tests or quizzes and must be removed. Smart phones are not acceptable for use as a calculator during a test or quiz.
Books and Required Resources:	Manufacturing Engineering Handbook, Second Edition by Hwaiyu Geng Publisher: McGraw-Hill Education Edition: Second ISBN: 978-0-07-183977-8 Available from Online Resources

Course Outcomes and Learning Objectives:

Course Outcome 1	**Learning Objectives for Course Outcome 1**
1. Understand manufacturing processes and the systems associated with them..	1.1 Understand and describe designing for manufacture and assembly. 1.2 Understand and describe materials used in modern manufacturing industries. 1.3 Understand and describe common production machines, automated systems, robotics, and computer controller machines. 1.4 Understand and describe material handling, inspection systems, and process control.
Course Outcome 2	**Learning Objectives for Course Outcome 2**
2. Understand manufacturing economics.	2.1 Understand and explain the fundamental principles. 2.2 Understand and explain cash flows. 2.3 Understand and describe price-level changes. 2.4 Understand and describe risk and uncertainty within the markets.

Course Outcome 3	Learning Objectives for Course Outcome 3
3. Understand supply chain management.	3.1 Understand and define supply chain management. 3.2 Examine the goals of supply chains 3.3 Understand and describe supply chain structures.
Course Outcome 4	**Learning Objectives for Course Outcome 4**
4. Understand industrial ecology and sustainability.	4.1 Investigate pollution prevention, cleaner production and the impact on the environment. 4.2 Investigate and explain environmental management systems. 4.3 Understand and describe life-cycle assessments for evaluating the effect of a production facility on the environment.

Evaluation Process and Grading System:

Evaluation Type	Evaluation Weight
Assignments	20%
Case Study / Project	20%
Participation	10%
Written Exam 1	25%
Written Exam 2	25%

Date: May 30, 2023

Addendum: Please refer to the course outline addendum on the Learning Management System for further information.