COURSE OUTLINE: MAC109 - VERTICAL MILLING TEC

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Course Code: Title	MAC109: VERTICAL MILLING TECHNOLOGY
Program Number: Name	6345: GENERAL MACHINIST
Department:	MECHANICAL TECHNIQUES PS
Academic Year:	2024-2025
Course Description:	Upon successful completion the apprentice is able to: vertical mill surfaces, shapes, and forms, counter bore/spot face holes, and drill holes.
Total Credits:	4
Hours/Week:	8
Total Hours:	25
Prerequisites:	There are no pre-requisites for this course.
Corequisites:	There are no co-requisites for this course.
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 3 Execute mathematical operations accurately. 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 8 Show respect for the diverse opinions, values, belief systems, and contributions of others. 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: 70%, B A minimum program GPA of 2.0 or higher where program specific standards exist is required for graduation.
Other Course Evaluation & Assessment Requirements:	Other Course Evaluation Requirements: Smart watches, smart phones and similar devices are not allowed during tests or quizzes and must be removed. Grade

	Definition Grade Point Equivalent A+ 90 - 100% 4.00 A 80 - 89% 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.
Books and Required Resources:	Technology of Machine Tools by Steve F. Krar, Arthur R. Gill, Peter Smid, Robert J. Gerritsen Publisher: McGraw Hill Edition: 9th ISBN: 9781266277474 Technology of Machine Tools Student Workbook by Steve F. Krar, Arthur R. Gill, Peter Smid Publisher: McGraw Hill Edition: 9th ISBN: 9781266321054
Course Outcomes and Learning Objectives:	

Course Outcome 1	**Learning Objectives for Course Outcome 1**
1.1 Demonstrate safe working procedures when setting up and operating vertical milling machines.	
Course Outcome 2	**Learning Objectives for Course Outcome 2**
1.2 Set up vertical milling machine controls, coolant requirements, and milling attachments. (2.5 hrs)	
Course Outcome 3	**Learning Objectives for Course Outcome 3**
1.3 Set up vertical milling workholding devices and accessories. (5 hrs)	
Course Outcome 4	**Learning Objectives for Course Outcome 4**
1.4 Demonstrate procedures for mounting vertical mill cutting tools and tool holders. (8 hrs)	
Course Outcome 5	**Learning Objectives for Course Outcome 5**
1.5 Develop a plan for vertical milling machine operations. (8 hrs)	
Course Outcome 6	**Learning Objectives for Course Outcome 6**

	1.6 Perform vertical milling. (12 hrs)
	Course Outcome 7 / **Learning Objectives for Course Outcome 7**
	1.7 Perform routine maintenance. (0.5 hrs)

Evaluation Process and Grading System:

Evaluation Type	Evaluation Weight
Practical	65%
Quizzes and tests	35%

Date: August 19, 2024

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