South Central College

MTT 2210 Concept Engineering III

Course Outcome Summary

Course Information

Description The purpose of this course is to present the fundamentals of mold construction, processes involved in using molds and die casting. The knowledge and skills presented in this course will introduce the machinist to various terminologies and functions of Solidworks through 3D solid modeling and blueprint creation. (Prerequisite: MTT 2110)

Total Credits 4

Total Hours 96

Types of Instruction

Instruction Type	Credits/Hours
Lecture	2/32
Lab	2/64

Pre/Corequisites

MTT 2110

Institutional Core Competencies

Communication - Students will be able to demonstrate appropriate and effective interactions with others to achieve their personal, academic, and professional objectives.

Critical and Creative Thinking - Students will be able to demonstrate purposeful thinking with the goal of using a creative process for developing and building upon ideas and/or the goal of using a critical process for the analyzing and evaluating of ideas.

Course Competencies

1. Utilize a variety of mold-related terminology

Learning Objectives

Explain process terms such as shut off, parting line and vents
Explain injection mold terms
Differentiate between the terms cavity and core

2. Explain types of plastic molds

Learning Objectives

Identify plastic injection molds such as compression and transfer
Describe thermal vacuum molds

3. Explain mold components

Learning Objectives
Discuss mold plates, pockets, cavities, etc.
Identify mold slides and locks
Identify ejection systems

4. Explain runners and gates

Learning Objectives
Identify purpose of the runner
Discuss gates and gating on injection molds
Identify cold slug

5. Discuss methods of producing cores and cavities

Learning Objectives
Identify equipment used to produce cores and cavities, such as Sinker & Wire Electrical Discharge Machines (EDM) and Computer Numerical Control (CNC)
Explore the processes involved in producing cores and cavities

6. Discuss mold base preparation

Learning Objectives
Identify different types of raw material used in mold base preparation
Discuss types of mold bases and plates
Identify proper plate stack and stack height

7. Demonstrate trim feature operation

Learning Objectives
Use trim surfaces
Use trim fillets

8. Demonstrate cut feature operation

Learning Objectives
Use cut surface
Use cut fillets

9. Demonstrate surface feature operation

Learning Objectives
Identify surface normals
Explain manipulating surface normals

10. Discuss boundaries

Learning Objectives
Use boundaries
Illustrate change boundary directions

11. Describe tool clearance

Learning Objectives
Create clearance plane
Illustrate changing clearance plane

12. Demonstrate mode feature operation

Learning Objectives
Demonstrate change part in part mode
Demonstrate change part in assembly mode

13. Describe open an assembly

Learning Objectives
Explain mates
Explain insert parts

14. Explain extrude feature

Learning Objectives
Identify extrude icon
Use extrude feature

15. Discuss save work icon

Learning Objectives
Use save part
Use save assembly

16. Discuss add relation icon

Learning Objectives
Use parallel
Use coincident

SCC Accessibility Statement

South Central College strives to make all learning experiences as accessible as possible. If you have a disability and need accommodations for access to this class, contact the Academic Support Center to request and discuss accommodations. North Mankato: Room B-132, (507) 389-7222; Faribault: Room A-116, (507) 332-7222.

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