

IND 295 - Topics In Industrial Engineering

(Formerly: Advanced Manufacturing Systems II – MT-1))

2026-2027

Time/place in Class and Asynchronous through Canvas

Instructor Mr. Ken Koleszar

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*** email is preferred method of contact. Canvas can also be used.

Textbook None- Manufacturing Skills Institute Learning Platform (Online Platform) / Canvas

Co-requisite IND 195 – Topics In Industrial Technology

General Course Information

Course: IND 295 - Topics in Industrial Engineering

Credit: 2

Prerequisites: IND 195 – Topics in Industrial Technology

Instructor: Ken Koleszar

Office: None

Office Hours: By Appointment

Phone: (434) 332-5171 ext. 8024

E-mail: koleszar@campbell.k12.va.us

Classroom: Room 317

Textbook: NONE: We will use the Manufacturing Skills Institute Learning Network (online platform) and my CANVAS.

Course Description:

The IND 295 - **Topics In Industrial Engineering** class was designed for students to earn their Manufacturing Technician 1 ©(MT1) certification and was developed to meet the growing employment demands of the manufacturing industry. The Topics In Industrial Engineering class addresses the core industry-wide skills standards required for skilled production occupations in several sectors of manufacturing. The core competency areas certified are Business Acumen, SPC, Quality, and Lean Six Sigma and DMAIC.

Course Outcomes

The Objectives of Topics in Industrial Engineering are:

To develop a workforce pipeline capable of meeting the requirements of existing and emerging employers in advanced technology industries such as manufacturing.

To provide a customized fast track pathway to stackable credentials for the 21st century advanced technology careers in industry.

To provide online and instructor-led training to address identified technical skill gaps.

To provide a pathway to advanced level training and specialized training based on industry requirements for potential new hires and incumbent workers.

Homework: Homework reinforces concepts discussed and practiced in class. Students are responsible for Completing LABS and homework. Homework is usually due one week after being assigned. After the due date, there will be a 10% grade reduction.

Grading

Homework / Classwork / Lab work are all assigned point values.

Final Grades 90 - 100 **A**, 80 - 89 **B**, 70 - 79 **C**, 65 - 69 **D**, Below 65 **F**

Suggestions for Success:

1. Get and use a calculator for all calculations.
2. Complete all homework to the best of your ability. Since you have a meeting before it is due, work on it, before the next meeting, and have me clarify any questions you may have. Then you can complete it before the due date.
3. Take detailed notes. Writing material helps cement information into your memory.
4. Complete and turn in all labs and Homework.
5. If you don't understand something, **ASK QUESTIONS!!**
6. Go through **ALL** the online platform material from MSI. / Canvas or Flash drive, two or more times is best.

7. Study and practice problems a minimum of 15 min. **EVERY** night instead of trying to cram then do a total review before any evaluation.
8. Please be in class as Often as Possible!
9. Students are responsible for all material covered and assignments, regardless of absences.
- 10 Students' improper behavior or disturbing the class will not be tolerated!
- 11 Student safety is our number one concern.
- 12 Follow all machine safety protocols.

Attendance:

Students are expected to attend class. Lecture, discussion, and peer interaction are essential elements of the learning process. You are responsible for all assignments.

Course Objectives:

1. Students will have a general understanding of Business Acumen.
2. Understand and apply the differences and similarities between Balance sheets, Income statements, and Cash Flow statements.
3. Correctly define and apply business concepts such as assets, liabilities, and equity.
4. Understand and apply basic Lean Manufacturing concepts
5. Understand and apply the basics of root cause analysis.
6. Understand and apply the basic of DMAIC.
7. Understand and apply the basic of (SPC) Statistical Process Control.