
SIE 383 – Spring 2026

Integrated Manufacturing Systems

Mondays

03:00 PM – 04:15 PM

R P Harvill Bldg, Rm 404

Wednesdays

INSTRUCTOR

Dr. Mohammed Shafae; shafae1@arizona.edu;

Office Hours: By appointments only.

TEACHING ASSISTANTS

David Manford; dmanford@arizona.edu;

Office Hours: By appointments only.

COURSE DESCRIPTION

Introduction to the integrated manufacturing enterprise and automation. Topics include computer-aided design, process planning, computer numerical control machining, machine vision, application of robots and automation.

Prerequisite(S): Advanced Standing.

COURSE OBJECTIVES & LEARNING OUTCOMES

This course introduces students to concepts of economic analysis, profitability, and cost estimation. Specific outcomes include:

1. Gain proficiency in Computer Aided Design (CAD) and Computer Aided Manufacturing (CAM)
2. Understand basic primary and secondary manufacturing processes.
3. Understand integration of part design, materials, and manufacturing.
4. Understand concepts and experience tools for manufacturing such as robotics, Geometric Dimensioning & Tolerancing (GD&T).
5. Understand the implications of Industry 4.0 technologies on the manufacturing industry.

COURSE MATERIALS

- **Required:** CAD/CAM training labs will be conducted online through the [camInstructor](#) platform. To learn how to register to gain access to the platform, follow the instructions in the documents under the “Course Syllabus and Policies” Content Tab of the D2L course site. To learn more about the [camInstructor](#) platform, watch this [video](#).
- **For all other course topics:**
 - Lecture notes are the primary source materials for this course.
 - Other supplemental readings and resources – available through university’s libraries and online subscriptions or otherwise “free”.

SOFTWARE REQUIREMENTS

Primary Software: [MASTERCAM 2026](#). Mastercam is a Windows-only application and there's no native macOS version which means you must run Windows inside a virtual machine (e.g., using [Parallels](#)) on your macOS and see if installing MasterCam will work. Otherwise, you can borrow a Windows Laptop from the university's library for free for the entire semester ([PC laptop | University of Arizona Libraries](#)). Detailed instructions on how to install MASTERCAM 2026 on Windows computers are provided in the [camInstructor](#) platform.

CLASS STRUCTURE & PARTICIPATION POLICY

The format of the course is a combination of lecture, in-class discussion, project work, and online labs and tutorials conducted through the [camInstructor](#) platform which will replace one of the two weekly in-class sessions for most of the weeks in the semester.

For in-person classes: student attendance and active participation in class discussions are vital to the learning process. As such, in-person attendance is required and graded for on-campus students while fully watching the recorded classes is required and graded for remote students. A Zoom link will be provided to remote students for optional attendance of the live class.

For online labs and tutorials: completion of all assigned lessons, videos, and tasks on the [camInstructor](#) platform will be monitored and counted as the attendance for the respective weekly class.

General Policies

- The UA's policy concerning Class Attendance, Participation, and Administrative Drops is available at: [ATTENDANCE POLICIES AND PRACTICES | Dean of Students Office](#).
- The UA policy regarding absences for any sincerely held religious belief, observance or practice will be accommodated where reasonable, [Religious Accommodation Policy | UA Policy](#). The calendar of religious holidays can be found at [Calendar of Religious Holidays | Office of the Registrar](#).
- Absences for groups of more than three students that are pre-approved by the UA Dean of Students (or Dean Designee) will be honored. See: [Attendance Policy | UA Policy](#).
- Non-attendance for any reason does **not** guarantee an automatic extension of due dates or rescheduling of examinations/assessments. Please communicate and coordinate any request directly with your instructor.

Course-Specific Policies

- If a student needs to miss less than three classes in a row for ANY reason, the student **DOES NOT** need to contact the course instructor because the class has a **“three absent classes with NO penalty”** policy; that is three absent classes of course attendance points will be dropped for all students (no questions asked) to account for short-term absences for ANY reason. However, it is the student's responsibility to be aware of all the materials covered in the missed class as it will absolutely affect your progress towards the following classes.
- If you must miss three or more classes in a row, please directly contact the Dean of Students Office DOS-deanofstudents@email.arizona.edu to share documentation about the challenges you are facing. The Dean of Students Office will communicate the situation to the course instructor, and then

the student can communicate with the course instructor to discuss what needs to be done to receive attendance points for the missed classes.

- On-campus students must attend the **full** 75-minute lecture in-person while remote students must fully watch the 75-minute lectures or attend the live Zoom class.

ASSIGNMENTS AND EXAMINATIONS

Class Attendance & Participation

- Class attendance and participation are required and graded per the class structure and participation policy described in the previous section.

Quizzes

- Quizzes will be administered online on D2L and via the [camInstructor](#) platform.
- The quizzes will focus on concepts and material discussed in class, online labs, homework, and/or reading assignments to ensure achievement of learning outcomes of the course.
- Their purpose is mainly to give you an indication of your understanding of the class material throughout the semester.

Homework and Discussions

- This includes assignments related to class lectures, take-home exercises, in-class exercises, and discussion topics on D2L where students will reflect on their learning and be asked to read and interact with other students' reflections.
- The purpose of those assignments is to prepare you for the quizzes and projects, provide additional opportunities to practice and deepen your understanding of the material, and give you an indication of your understanding of the class material throughout the semester.

Course Project

- There will be several projects throughout the semester.
- More details on the course projects' scope, deliverables, and timeline will be shared during the semester.

Exams

- This course will have three exams (tentatively around weeks 6, 13, and the final exams week).
- More specific details on exam content, structure, and specific dates will be shared later.
- Completing all three exams is **OBLIGATORY** for all students. It is the student's responsibility to notify the instructor at least one week in advance if you have a conflict with the scheduled exam time.
- Exams may not be equally weighted.

GRADING POLICY

The final course grade will be based on the total weighted points and the following scale. Final scores will be calculated to the hundredth decimal and rounded to the nearest whole number (e.g., 89.50 = A and 89.49 = B, no exceptions).

A: 100-90%; **B:** 80-90%; **C:** 70-80%; **D:** 60-70%; **E:** below 60%

Grades will be assigned based on performance using the following percentages.

Course Requirement	Percentage of Grade
Class Attendance & Participation	15%
Quizzes	15%
Homework Assignments	20%
Exams	25%
Projects	25%

CLASSROOM BEHAVIOR POLICY

To foster a positive learning environment, students and instructors have a shared responsibility. We want a safe, welcoming, and inclusive environment where all of us feel comfortable with each other and where we can challenge ourselves to succeed. To that end, our focus is on the tasks at hand and not on extraneous activities (e.g., texting, chatting, reading a newspaper, making phone calls, web surfing, etc.).

Students are asked to refrain from disruptive conversations with people sitting around them during lecture. Students observed engaging in disruptive activity will be asked to cease this behavior. Those who continue to disrupt the class will be asked to leave lecture or discussion and may be reported to the Dean of Students.

THREATENING BEHAVIOR POLICY

The UA Threatening Behavior by Students Policy prohibits threats of physical harm to any member of the University community, including to oneself. See: [Threatening Behavior by Students Policy | UA Policy](#).

ACCESSIBILITY AND ACCOMMODATIONS

Our goal in this classroom is that learning experiences be as accessible as possible. If you anticipate or experience physical or academic barriers based on disability, please let me know immediately so that we can discuss options. You are also welcome to contact the Disability Resource Center (520-621-3268) to establish reasonable accommodations. For additional information on the Disability Resource Center and reasonable accommodations, please visit.

CODE OF ACADEMIC INTEGRITY

Students are encouraged to share intellectual views and discuss freely the principles and applications of course materials. However, graded work/exercises must be the product of independent effort unless otherwise instructed. Students are expected to adhere to the UA Code of Academic Integrity as described in the UA General Catalog. See: [Academic Integrity | Dean of Students Office](#).

The University Libraries have some excellent tips for avoiding plagiarism, available at [Avoid plagiarism](#).

UA NONDISCRIMINATION AND ANTI-HARASSMENT POLICY

The University of Arizona is committed to creating and maintaining an environment free of discrimination. In support of this commitment, the University prohibits discrimination, including harassment and retaliation, based on a protected classification, including race, color, religion, sex, national origin, age, disability, veteran

status, sexual orientation, gender identity, or genetic information. For more information, including how to report a concern, please see: [Nondiscrimination and Anti-Harassment Policy | UA Policy](#).

Our classroom is a place where everyone is encouraged to express well-formed opinions and their reasons for those opinions. We also want to create a tolerant and open environment where such opinions can be expressed without resorting to bullying or discrimination of others.

ADDITIONAL RESOURCES FOR STUDENTS

UA Academic policies and procedures are available at [All Policies | University of Arizona Catalog](#).

Campus Health: [Home | Campus Health](#)

Campus Health provides quality medical and mental health care services through virtual and in-person care. Phone: 520-621-9202

Counseling and Psych Services (CAPS): [Home | Counseling & Psych Services \(CAPS\)](#)

CAPS provides mental health care, including short-term counseling services. Phone: 520-621-3334

The Dean of Students Office's Student Assistance Program: [Student Assistance | Dean of Students Office](#)

Student Assistance helps students manage crises, life traumas, and other barriers that impede success. The staff addresses the needs of students who experience issues related to social adjustment, academic challenges, psychological health, physical health, victimization, and relationship issues, through a variety of interventions, referrals, and follow up services.

Email: DOS-deanofstudents@email.arizona.edu

Phone: 520-621-7057

Survivor Advocacy Program: [Welcome | Survivor Support Services](#)

The Survivor Advocacy Program provides confidential support and advocacy services to student survivors of sexual and gender-based violence. The Program can also advise students about relevant non-UA resources available within the local community for support.

Email: survivoradvocacy@email.arizona.edu

Phone: 520-621-5767

Safety on Campus and in the Classroom

For a list of emergency procedures for all types of incidents, please visit the website of the Critical Incident Response Team (CIRT): [In Case of Emergency | Emergency Management](#)

Also watch the video available at the university's [EDGE-learning](#) website.

SUBJECT TO CHANGE STATEMENT

Information contained in the course syllabus, other than the grade and absence policy, may be subject to change with advance notice, as deemed appropriate by the instructor.

Students are responsible for all the policies above and for any announcements, assignments, or changes to the syllabus that are announced in class, by e-mail, and/or posted on D2L.