

Mechanical Engineering: Required Coursework and Graduation Checklist

UAZ Degree

Catalog: Spring 2022 and Beyond

NOTE: In order to graduate students must satisfy all general education and foundational coursework in addition to satisfying all graduation policies and protocols. Requirements for the Sampoerna University degree may vary. Please consult with your SU advisor on the SU degree requirements.

Graduation Checklist (Check if applicable):

1. Have you completed **ALL** of the required coursework below with a “passing” grade? (students should obtain at least a “C” grade in courses taught by UAZ, Sampoerna, and Broward. If a “D” or “E” grade is obtained in a UAZ course, please contact your UAZ advisor to discuss your academic status.) ☐
2. Have you completed the “Mid-Career Writing Assessment” by earning a B or higher in ENGL 102? If not, please contact your Sampoerna advisor about retaking this course (You can determine your grade in Course History in UAccess Student) ☐
3. Have you completed 128 total units towards your degree? (You can view this total on the UA Advisement Report on UAccess Student) ☐
4. Have you completed 42 upper division units (300-400 level) towards your degree? (You can view this total on the UA Advisement Report on UAccess Student) ☐
5. Have you completed 30 residence credits towards your UAZ degree? (Applicable courses are in **red** below. You can determine completion in Course History in UAccess Student) ☐
6. Are at least 18 of those residence units (in **red**) upper-division (300-400 level) (You can determine completion in Course History in UAccess Student) ☐
7. Is your final **cumulative and major** University of Arizona GPA a minimum of 2.0? (You can view this GPA on the UAZ Advisement Report on UAccess Student. It will comprise of the courses in red listed below.) ☐

NOTE: Grades earned in courses from Sampoerna University and Broward College **are not** included in the cumulative, major, or term University of Arizona GPA calculation, but the transfer credits **are** included in the upper division units and total units requirements.

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Required Advanced Standing Coursework:

Sampoerna University – Advanced Standing Courses	University of Arizona – Advanced Standing Courses	Grade
GCOM 1304: Composition English I	ENGL 101: English Composition I	
GCOM 1305: Composition English II	ENGL 102: English Composition II	
GENG 1301: Introduction to Engineering	ENGR 102 A/B: Introduction to Engineering	
GMAT 1505: Calculus & Analytical Geometry I	MATH 122B: Calculus I	
GMAT 2506: Calculus & Analytical Geometry II	MATH 129: Calculus II	
GMAT 2507: Calculus & Analytical Geometry III	MATH 223: Vector Calculus	
GMAT 2308: Differential Equations (Pre-requisite for UA AME 301, AME 331, and AME 460)	MATH 254: Introduction to Ordinary Differential Equations (Pre-requisite for UA AME 301, AME 331, and AME 460)	
GSCI 1303: General Chemistry I and GSCI 1103L: General Chemistry I Lab	CHEM 151: General Chemistry	
MECH 1101: MATLAB I	AME 105: Introduction to MATLAB I	
MECH 2107: MATLAB II	AME 205: Introduction to MATLAB II	
MECH 2305: Thermodynamics (Pre-requisite for UA AME 331, AME 430, and AME 432)	AME 230: Thermodynamics (Pre-requisite for UA AME 331, AME 430, and AME 432)	
MECH 2306: Dynamics (Pre-requisite for UA AME 331, AME 455, and AME 460)	AME 250: Dynamics (Pre-requisite for UA AME 331, AME 455, and AME 460)	
GSCI 1405: General Physics with Calculus I and GSCI 1105L: General Physics with Calculus I Lab	PHYS 141: Introductory Mechanics	
GSCI 2406: General Physics with Calculus II and GSCI 2106L: General Physics with Calculus II Lab	PHYS 241: Introductory Electricity and Magnetism	
ENGR 2302: Statics	CE 214: Statics	
MECH 2302: Engineering Graphics (Pre-requisite for UA AME 410)	AME 211: Computer-aided Drafting and Manufacturing (Pre-requisite for UA AME 410)	
ENGR 1301: Computer Programming for Engineering Application	ECE 175: Computer Programming for Engineering Applications	
MECH 2308: Electrical Circuits + Laboratory	ECE 207: Elements of Electrical Engineering	

Required Departmental Electives: Students must take **one** ME departmental elective. The following UAZ course will meet this requirement.

Sampoerna University – Departmental Courses (COMPLETE EIGHT TOTAL)	University of Arizona – Departmental Courses (COMPLETE EIGHT TOTAL)	Grade
MECH 3233: Mechatronics & Laboratory	AME Departmental Elective	

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Required Engineering Courses: Courses written in **red** are UA taught.

Sampoerna University – Engineering Courses	University of Arizona – Engineering Courses	Grade
MECH 2104: Machine Shop	AME 313: Machine Shop	
MECH 3313: Engineering Analysis (Pre-requisite for UA AME 455)	AME 301: Engineering Analysis (Pre-requisite for UA AME 455)	
MECH 3312: Introduction to Fluid Mechanics (Pre-requisite for UA AME 432)	AME 331: Introduction to Fluid Mechanics (Pre-requisite for UA AME 432)	
MECH 3309: Mechanical Behavior of Engr Materials	AME 324A: Mechanical Behavior of Engr Materials	
MECH 3310: Fundamentals of Materials for Engineers (Pre-requisite for UA AME 410)	MSE 331R: Fundamentals of Materials for Engineers (Pre-requisite for UA AME 410)	
MECH 3111: Mechanics of Materials Laboratory	AME 324L: Mechanics of Materials Laboratory	
MECH 3317: Dynamics of Machines (Pre-requisite for UA AME 452)	AME 352: Dynamics of Machines (Pre-requisite for UA ameAME 452)	
MECH 3318: Numerical Methods (Pre-requisite for UA AME 432 and AME 452)	AME 302: Numerical Methods (Pre-requisite for UA AME 432 and AME 452)	
MECH 3315: Engineering Component Design	AME 324B: Engineering Component Design	
MECH 3316: Instrumentation Laboratory	AME 300: Instrumentation Laboratory	
STEM 4301: Internship	AME 493: Internship	
STEM 4302: Senior Capstone I	ENGR 498A: Cross-Disciplinary Design	
MECH 4125: Senior Colloquium	AME 495S: Senior Colloquium	
MECH 4321: Control System Design	AME 455: Control System Design	
MECH 4319: Heat Transfer	AME 432: Heat Transfer	
MECH 4320: Intermediate Thermodynamics	AME 430: Intermediate Thermodynamics	
MECH 4226: Senior Mechanical Laboratory	AME 400A: Senior Mechanical Laboratory AME 400B: Dynamics and Controls Laboratory	
STEM 4303: Senior Capstone II	ENGR 498B: Cross-Disciplinary Design	
MECH 4329: Planar Multibody Dynamics with Applications	AME 452: Planar Multibody Dynamics with Applications	
MECH 4324: Mechanical Vibrations	AME 460: Mechanical Vibrations	
MECH 4XXX: Additive Manufacturing	AME 410: Additive Manufacturing	

General Education Courses: There are multiple subject areas for General Education courses. Within each subject area, students must take a certain number of courses. Number of courses and course options are indicated below:

Sampoerna University – Humanist Courses (PICK ONE)	University of Arizona – Humanist Courses (PICK ONE)	Grade
GHUM 1301: Pancasila	General Education Course: GE EP-Humanist	
GHUM 1303: World Religions	General Education Course: GE EP-Humanist	
GHUM 1304: Introduction to Literature	General Education Course: GE EP-Humanist	
GHUM 2305: Introduction to Philosophy	General Education Course: GE EP-Humanist	
Sampoerna University – Social Scientist Courses (PICK ONE)	University of Arizona – Social Scientist Courses (PICK ONE)	Grade

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BUSI1301: Basic Economic Issues	General Education Course: GE EP-Social Scientist	
GSOC 1301: Principles of Macroeconomics	General Education Course: GE EP-Social Scientist	
GSOC 2302: Introduction to International Relations	General Education Course: GE EP-Social Scientist	
GSOC 2303: General Psychology	General Education Course: GE EP-Social Scientist	
GSOC 2304: Social Problems	General Education Course: GE EP-Social Scientist	
GSOC 2306: US History Since 1877	General Education Course: GE EP-Social Scientist	
PSYC1301: Introduction to Psychology	General Education Course: GE EP-Social Scientist	
Sampoerna University – Artist Courses (PICK ONE)	University of Arizona – Artist Courses (PICK ONE)	Grade
GHUM 1306: Basic Fundamentals of Drawing	General Education Course: GE EP-Artist	
VCDD 1326: Design Thinking and Theory	General Education Course: GE EP-Artist	
VCDD 1427: Computer Graphics Design	General Education Course: GE EP-Artist	
VCDD3345: Indonesian Art History	General Education Course: GE EP-Artist	
Sampoerna University – Natural Scientist (PICK ONE)	University of Arizona – Natural Scientist (PICK ONE)	Grade
GSCI 1303: General Chemistry I	General Education Course: GE EP-Natural Scientist	
Sampoerna University – Building Connections (PICK THREE not yet used for another Gened Category)	University of Arizona – Building Connections (PICK THREE)	Grade
GHUM 1301: Pancasila	General Education Course: GE EP-Building Connections	
GSOC 2304: Social Problems	General Education Course: GE EP-Building Connections	
GHUM 2304: Introduction to Literature	General Education Course: GE EP-Building Connections	
GHUM 1303: World Religions	General Education Course: GE EP-Building Connections	
GSOC 2303: General Psychology	General Education Course: GE EP-Building Connections	
GSOC 1301: Principles of Macroeconomics	General Education Course: GE EP-Building Connections	
GSOC 2306: U.S. History Since 1877	General Education Course: GE EP-Building Connections	
GSCI 3311: Ecology	General Education Course: GE EP-Building Connections	
IENG 4319: Human Side of Organizations	General Education Course: GE EP-Building Connections	
GSCI 1307: Microbes & Society	General Education Course: GE EP-Building Connections	

General Elective Courses: Students must take a minimum of **THREE** General Elective (GE) Courses. Options include the following, **but are not limited to these**. They just need to be three additional courses that transfer to UA. Courses above could also count as a GE Course (for example, if you take *World Religions* and *Pancasila* to satisfy

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the Traditions and Cultures Requirement, you could also take *Intro to Literature* and it would count as a GE Course):

Sampoerna University – General Elective Courses (PICK THREE)	University of Arizona – General Elective Courses (PICK THREE)	Grade
MECH 3234: Mechanical Design Project	General Elective Course	
MECH 2232: Manufacturing Processes for Mechanical Engineering	General Elective Course	
IENG 3310: Technical Writing	General Elective Course	

Student Success Courses: Student Success Courses are taught by UA. HED 102A and 102B are taught for every cohort. If needed to meet unit requirements, HED 103 will also be taught, but it is not a strict requirement for the degree.

Sampoerna University – Student Success Courses	University of Arizona – Student Success Courses	Grade
General Elective Course	HED 102A: Succeeding as a Global Wildcat I	
General Elective Course	HED 102B: Succeeding as a Global Wildcat II	
General Elective Course	HED 103: Succeeding as a Global Professional	