

# COLLEGE OF ENGINEERING

**Dean (Interim) - David Jáuregui, Ph.D., P.E.**

**Acting Associate Dean (Academics) - Gabe Garcia, Ph.D.**

**Associate Dean (Research) - Satyajayant Misra, Ph.D.**

**Associate Dean (Outreach and Recruitment) - Patricia Sullivan, Ph.D.**

**Assistant Dean (Student Success and Experiential Learning) - Gabe Garcia, Ph.D.**

The College of Engineering comprises six departments:

- Chemical and Materials Engineering (<https://catalogs.nmsu.edu/nmsu/engineering/chemical-materials-engineering/>);
- Civil Engineering (<https://catalogs.nmsu.edu/nmsu/engineering/civil-engineering/>);
- Electrical and Computer Engineering (<https://catalogs.nmsu.edu/nmsu/engineering/electrical-computer-engineering/>);
- Engineering Technology and Surveying Engineering (<https://catalogs.nmsu.edu/nmsu/engineering/engineering-technology-surveying/>);
- Industrial Engineering (<https://catalogs.nmsu.edu/nmsu/engineering/industrial-engineering/>); and
- Mechanical and Aerospace Engineering (<https://catalogs.nmsu.edu/nmsu/engineering/mechanical-aerospace-engineering/>).

## Mission of the College of Engineering

The College of Engineering will uphold the land grant mission of NMSU through nationally recognized programs in education, research and professional and public service.

With respect to our undergraduate programs, we will accomplish our mission by focusing on the following goals:

1. To be nationally and internationally recognized for academic and research programs in engineering and engineering technology.
2. Provide world-class engineers and engineering technologists for industrial, government, and academic constituents of the College of Engineering.
3. To be the University of Choice for undergraduate engineering and engineering technology education in the region.
4. To serve as an engine for economic development in New Mexico through the advancement of engineering and technology.

Furthermore, graduates receiving baccalaureate degrees will demonstrate:

- an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics
- an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors
- an ability to communicate effectively with a range of audiences
- an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must

consider the impact of engineering solutions in global, economic, environmental, and societal contexts

- an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives
- an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions
- an ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

## Undergraduate Student Advisement

Students entering the College of Engineering for the first time will be advised by the Center for Academic Advising and Student Support (CAASS) during their first year of enrollment. CAASS is located in Educational Services, Suite 200. Students may also change majors when they meet with CAASS or on the CAASS webpages. Students uncertain about choosing a major may list themselves as undeclared in the College of Engineering and be advised by the CAASS. Undeclared students will be asked to choose a major after two semesters in the college. Students are encouraged to consult with departmental mentors on subjects related to course offerings, student organizations, internships, research opportunities, graduate education, and career options. Students must have a declared major in order to graduate.

## Undergraduate General Education

With the exception of math and science, the college accepts all coursework approved for inclusion in the New Mexico General Education Common Core. Calculus I, General Chemistry I and Engineering Physics I are required to satisfy Areas II and III of the common core.

## S/U Coursework

The college requires most degree requirements to be taken with traditional grading. Students may take selected humanities and social science courses under the S/U option. Other exceptions are specifically noted in the program descriptions later in this catalog.

## Undergraduate Math Placement

Entering freshmen are placed into an appropriate math course based upon the results of the Math Placement Exam administered regularly by the NMSU mathematics department. Students with advanced placement or transfer credit for mathematics will be placed accordingly.

## Minors

Minors are available from most departments within the College of Engineering, and are outlined in the individual program descriptions.

## Undergraduate Co-op / Internship Experience

After two semesters of satisfactory academic work (2.0 GPA or higher), an engineering student may go on a work phase with one of the many companies or governmental agencies with which the university has co-op/internship agreements. The experience obtained through alternating periods of academic and field work greatly contributes to the preparation of a student for professional life. Work phases are considered to be a vital part of the educational process, and students are counseled in the selection of co-op/internship positions that will lead to progressive

learning experiences. Earnings while on work phase provide a source of financial assistance to meet educational expenses.

A significant number of undergraduate engineering students are in the cooperative education program. Students may, with the approval of their Department Head, earn credit while participating in a co-op work phase. Co-op credits do not normally count toward the degree requirements, but are displayed on the transcript.

## Undergraduate General Academic Requirements

For regular admission to the university and the College of Engineering, incoming freshman and transfer applicants must meet the university's qualifications for regular admission as stated in the undergraduate catalog in effect at the time of application. Students admitted to the College of Engineering will be classified by the college as a PRE-[major] until the standard requirements described below for admission to the program major are met.

PRE-[major] students will be admitted into their respective programs once they have earned a minimum grade of C- in all of the following courses:

Prefix	Title	Credits
CHEM 1215G	General Chemistry I Lecture and Laboratory for STEM Majors	4
or CHEM 1120G (engineering technology)		
ENGL 1110G/1110H/1110M	Composition I	4
MATH 1511G	Calculus and Analytic Geometry I	4
or MATH 1430G (engineering technology)		
PHYS 1310G	Calculus -Based Physics I	3
or PHYS 1230G (engineering technology)		

Any of the above courses with earned AP credit (minimum score of 3) is exempt from the list. Transfer students may meet this criteria with determined passing credit of equivalent courses. PRE-[major] students will be advised by their EG-[major] department.

NMSU College of Engineering reserves the right to independently test any student's English proficiency upon arrival, including those who have earned scores satisfying minimum admission criteria. If the demonstrated level of English proficiency is not sufficient for academic success as determined by university regulations, support classes may be required to improve proficiency.

Students must earn a minimum cumulative GPA of 2.0 before enrolling in engineering courses numbered 300 or above. Students seeking to continue in engineering upper division courses with a GPA below 2.0 need to meet with the Associate Dean of Academics to create a course plan designed to increase their GPA and meet this criteria.

Students must earn a grade of C- or better in all engineering, technology, math and science courses (including associated prerequisite courses) required for the degree and also courses taken to satisfy the general education requirements for Area I-Communications, Area II-Mathematics, and Area III-Laboratory Sciences. If a grade lower than C- is earned in any of these courses, the student is required to retake the course immediately the next semester it is offered. Students who earn a grade less than a C- the first time will be contacted by the department and/or academic advising center and advised about this policy and resources to help in their academic success. If the student fails to achieve a C- or better in any of these courses a second time, then the student must submit

a written request to the Associate Dean of Academics in the College of Engineering to enroll in the course a third time. The student should explain the circumstances impacting their grade and the actions planned to improve their performance.

## Digital Badges

Learning a knowledge-based skill by spending a concentrated, short period of time can lead to the awarding of a competency in the form of a digital badge. Digital badges can be combined or a longer skill-based instructional path can be used to secure a micro-credential which may lead to college credit. Skills leading to digital badges and micro-credentials can be acquired in various ways including workshops, online classes, and focused courses through NMSU OnDemand or outside of NMSU.

The College of Engineering encourages students to engage in experiential and focused learning that leads to knowledge-based skills relevant in industry including specific software, project management, leadership, quality, entrepreneurship, and critical thinking. Digital badge and micro-credential earners can also benefit by having the ability to combine classroom knowledge with acquired skills, especially in design classes.

Other benefits of digital badges include: being able to choose what knowledge-based skills you want to develop; strategically combining several badges to form an overarching micro-credential; and sharing your achievements online with others including prospective employers.

Badges and micro-credentials recognized by the College of Engineering are those that are validated by assessment, supported by evidence, and relevant to the practice of engineering.

Students in the College of Engineering have been earning digital badges and micro-credentials independently or through sponsored projects. Starting with this catalog, the College of Engineering degree programs are providing recommendations to students on what skills can enhance their learning and when in the curricular path would digital badges and overarching micro-credential be most beneficial. Specific information on digital badges and micro-credentials can be found on the degree program pages of the catalog.

## Engineering Transfer Policy

NMSU Administrative Rules and Procedures, Section 4.61, Transfer Credit states the following: PART 3A, Student. "It is the student's responsibility to provide the necessary materials for consideration by Departmental Faculty of their requests for transfer credit" and PART 3B, Departmental Faculty. "Departmental Faculty review and decide requests for transfer credit". Policy for engineering majors enrolling in courses at other institutions to meet College of Engineering Departmental Core Requirements<sup>1</sup> includes:

1. NMSU main campus engineering majors may request to take core classes at other institutions of higher education to meet NMSU College of Engineering Departmental Core in the following situations: (1) if the NMSU core course cannot accommodate any more eligible students and (2) the course is not offered during a given semester of the academic year.
2. The following conditions and restrictions apply to any course not taken on the NMSU main campus.

- The department must approve the course prior to enrollment.
- The course must be a class in a program that is accredited by an accreditation commission of ABET, Inc. and cannot be graded in the S/U grade mode.
- The course must be substantially the same as the equivalent NMSU class and the student must have satisfied all NMSU prerequisite requirements.
- The student shall provide a corresponding course syllabus and any other documentation required.
- If NMSU prerequisite requirements are not satisfied, credit will be denied regardless of a passing grade for the course at the other institution.
- Exams must be Proctored<sup>2</sup> for any on-line course not taken from the NMSU main campus.

<sup>1</sup> Core requirements are defined as required departmental, discipline-related courses within the major.

<sup>2</sup> The student may choose to have NMSU proctored exams.

**For more information about transferring to New Mexico State University from another accredited institution, visit the NMSU Transfer Center.**

## Requirements for Graduation

The minimum requirements for undergraduate degrees are:

1. Satisfaction of the university requirements as previously outlined in the Regulations (<https://catalogs.nmsu.edu/nmsu/regulations-policies/>) section of this catalog.
2. Satisfaction of the college requirements as outlined under General Academic Requirements, above.
3. Satisfaction of the departmental rules and course requirements as outlined in the individual program descriptions.

*NOTE: In order to maintain quality, remain current, and satisfy changes in accreditation criteria, requirements which have been published may be changed. Any such changes will be announced and will not be retroactive. Always consult an academic advisor from your department before registering for classes.*

## Master's Accelerated Program

Students who have a minimum GPA of 2.75 are eligible for the Masters Accelerated Program (MAP) in engineering. The MAP allows a student to earn both a bachelor's and master's degree in as little as five years.

A master's degree is increasingly becoming the professional degree of choice for engineering practice. Many employers encourage, or even require, their employees to seek the degree during their early career, and master's holders often experience increased upward mobility and earn substantially greater salaries as a result.

### General requirements:

- It takes 30 to 32 credit hours to complete a master's degree.
- Up to 12 credits of your undergraduate coursework 450 and above may be counted toward the master's degree.
- It's possible to complete the master's degree in 2-3 semesters after graduation with a bachelor's degree.

Visit the Master's Accelerated Program (MAP) (<https://gradschool.nmsu.edu/current-students/masters-accelerated-program.html>) page for more information.

## Undergraduate and Graduate Degrees

Undergraduate and Graduate study is available in

- Aerospace Engineering (<https://catalogs.nmsu.edu/nmsu/engineering/mechanical-aerospace-engineering/#degreestext>),
- Chemical Engineering (<https://catalogs.nmsu.edu/nmsu/engineering/chemical-materials-engineering/#degreestext>),
- Civil Engineering (<https://catalogs.nmsu.edu/nmsu/engineering/civil-engineering/#degreestext>),
- Electrical Engineering (<https://catalogs.nmsu.edu/nmsu/engineering/electrical-computer-engineering/#degreestext>),
- Environmental Engineering (<https://catalogs.nmsu.edu/nmsu/engineering/civil-engineering/#degreestext>),
- Industrial Engineering (<https://catalogs.nmsu.edu/nmsu/engineering/industrial-engineering/#degreestext>),
- Information Technology (<https://catalogs.nmsu.edu/nmsu/engineering/engineering-technology-surveying/#degreestext>), and
- Mechanical Engineering (<https://catalogs.nmsu.edu/nmsu/engineering/mechanical-aerospace-engineering/#degreestext>).

A multi-disciplinary graduate degree with concentration in Advanced Manufacturing (p. 5) is also available. See individual program descriptions for degree requirements.

## Bachelor Degrees

### A

- Aerospace Engineering - Bachelor of Science in Aerospace Engineering (<https://catalogs.nmsu.edu/nmsu/engineering/mechanical-aerospace-engineering/aerospace-engineering-bachelor-science-aerospace-engineering/>)

### C

- Chemical Engineering - Bachelor of Science in Chemical Engineering (<https://catalogs.nmsu.edu/nmsu/engineering/chemical-materials-engineering/chemical-engineering-bachelor-science-chemical-engineering/>)
- Civil Engineering - Bachelor of Science in Civil Engineering (<https://catalogs.nmsu.edu/nmsu/engineering/civil-engineering/civil-engineering-general-bachelor-science-civil-engineering/>)
- Civil Engineering Technology (Renewable Energy Technologies) - Bachelor of Science in Engineering Technology (<https://catalogs.nmsu.edu/nmsu/engineering/engineering-technology-surveying/civil-engineering-technology-renewable-energy-technologies-bachelor-science-engineering-technology/>)
- Civil Engineering Technology (Transportation Technology) - Bachelor of Science in Engineering Technology (<https://catalogs.nmsu.edu/nmsu/engineering/engineering-technology-surveying/civil-engineering-technology-transportation-technology-bachelor-science-engineering-technology/>)
- Civil Engineering Technology - Bachelor of Science in Engineering Technology (<https://catalogs.nmsu.edu/nmsu/engineering/engineering-technology-surveying/civil-engineering-technology-bachelor-science-engineering-technology/>)

- Computer Engineering - Bachelor of Science in Computer Engineering (<https://catalogs.nmsu.edu/nmsu/engineering/electrical-computer-engineering/computer-engineering-bachelor-science-computer-engineering/>)

## E

- Electrical Engineering (Artificial Intelligence, Machine Learning, & Data Science) - Bachelor of Science in Electrical Engineering (<https://catalogs.nmsu.edu/nmsu/engineering/electrical-computer-engineering/electrical-engineering-artificial-intelligence-machine-learning-data-science-bachelor-science-electrical-engineering/>)
- Electrical Engineering (Communications and Signal Processing) - Bachelor of Science in Electrical Engineering (<https://catalogs.nmsu.edu/nmsu/engineering/electrical-computer-engineering/electrical-engineering-comm-signal-process-bachelor-science-electrical-engineering/>)
- Electrical Engineering (Computers and Microelectronics) - Bachelor of Science in Electrical Engineering (<https://catalogs.nmsu.edu/nmsu/engineering/electrical-computer-engineering/electrical-engineering-computers-microelectro-bachelor-science-electrical-engineering/>)
- Electrical Engineering (Controls & Robotics) - Bachelor of Science in Electrical Engineering (<https://catalogs.nmsu.edu/nmsu/engineering/electrical-computer-engineering/electrical-engineering-controls-robotics-bsee/>)
- Electrical Engineering (Electromagnetics and Photonics) - Bachelor of Science in Electrical Engineering (<https://catalogs.nmsu.edu/nmsu/engineering/electrical-computer-engineering/electrical-engineering-electromag-photonics-bachelor-science-electrical-engineering/>)
- Electrical Engineering (Power) - Bachelor of Science in Electrical Engineering (<https://catalogs.nmsu.edu/nmsu/engineering/electrical-computer-engineering/electrical-engineering-power-bachelor-science-electrical-engineering/>)
- Electrical Engineering (Space Systems Engineering) - Bachelor of Science in Electrical Engineering (<https://catalogs.nmsu.edu/nmsu/engineering/electrical-computer-engineering/electrical-engineering-space-systems-bachelor-science-electrical-engineering/>)
- Electrical Engineering - Bachelor of Science in Electrical Engineering (<https://catalogs.nmsu.edu/nmsu/engineering/electrical-computer-engineering/electrical-engineering-bachelor-science-electrical-engineering/>)
- Electronics and Computer Engineering Technology - Bachelor of Science in Engineering Technology (<https://catalogs.nmsu.edu/nmsu/engineering/engineering-technology-surveying/electronics-computer-engineering-technology-bachelor-science-engineering-technology/>)
- Engineering Physics (Aerospace Engineering) - Bachelor of Science in Engineering Physics (<https://catalogs.nmsu.edu/nmsu/engineering/engineering-physics/engineering-physics-aerospace-bachelor-science-engineering-physics/>)
- Engineering Physics (Chemical Engineering) - Bachelor of Science in Engineering Physics (<https://catalogs.nmsu.edu/nmsu/engineering/engineering-physics/engineering-physics-chemical-bachelor-science-engineering-physics/>)
- Engineering Physics (Electrical Engineering) - Bachelor of Science in Engineering Physics (<https://catalogs.nmsu.edu/nmsu/engineering/engineering-physics/engineering-physics-electrical-bachelor-science-engineering-physics/>)
- Engineering Physics (Mechanical Engineering) - Bachelor of Science in Engineering Physics (<https://catalogs.nmsu.edu/nmsu/>)

[engineering/engineering-physics/engineering-physics-mechanical-bachelor-science-engineering-physics/](https://catalogs.nmsu.edu/nmsu/engineering/engineering-physics/engineering-physics-mechanical-bachelor-science-engineering-physics/))

## G

- Geomatics - Bachelor of Science in Geomatics (<https://catalogs.nmsu.edu/nmsu/engineering/engineering-technology-surveying/geomatics-bachelor-science-geomatics/>)
- Geomatics - Bachelor of Science in Geomatics (Online) (<https://catalogs.nmsu.edu/global/nmsu-global/geomatics-bs-geomatics-online/>)

## I

- Industrial Engineering - Bachelor of Science in Industrial Engineering (<https://catalogs.nmsu.edu/nmsu/engineering/industrial-engineering/industrial-engineering-bachelor-science-industrial-engineering/>)
- Information and Communication Technology (Cyber Defense) - Bachelor of Information and Communication Technology (<https://catalogs.nmsu.edu/nmsu/engineering/engineering-technology-surveying/information-communication-technology-cyber-defense-bict/>)
- Information and Communication Technology (Cyber Defense) - Bachelor of Information and Communication Technology (Online) (<https://catalogs.nmsu.edu/global/nmsu-global/information-communication-technology-cyber-defense-bict-online/>)
- Information and Communication Technology (Network Technologies) - Bachelor of Information and Communication Technology (<https://catalogs.nmsu.edu/nmsu/engineering/engineering-technology-surveying/information-and-communication-technology-network-technologies-bict/>)
- Information and Communication Technology (Network Technologies) - Bachelor of Information and Communication Technology (Online) (<https://catalogs.nmsu.edu/global/nmsu-global/information-communication-technology-network-technologies-bict-online/>)
- Information and Communication Technology (Software Development) - Bachelor of Information and Communication Technology (<https://catalogs.nmsu.edu/nmsu/engineering/engineering-technology-surveying/information-and-communication-technology-software-development-bict/>)
- Information and Communication Technology (Software Development) - Bachelor of Information and Communication Technology (Online) (<https://catalogs.nmsu.edu/global/nmsu-global/information-communication-technology-software-development-bict-online/>)
- Information and Communication Technology - Bachelor of Information and Communication Technology (<https://catalogs.nmsu.edu/nmsu/engineering/engineering-technology-surveying/information-and-communication-technology-bachelor-information-communication-technology/>)
- Information and Communication Technology - Bachelor of Information and Communication Technology (Online) (<https://catalogs.nmsu.edu/global/nmsu-global/information-communication-technology-bict-online/>)

## M

- Mechanical Engineering - Bachelor of Science in Mechanical Engineering (<https://catalogs.nmsu.edu/nmsu/engineering/mechanical-aerospace-engineering/mechanical-engineering-bachelor-science-mechanical-engineering/>)

- Mechanical Engineering Technology - Bachelor of Science in Engineering Technology (<https://catalogs.nmsu.edu/nmsu/engineering/engineering-technology-surveying/mechanical-engineering-technology-bachelor-science-engineering-technology/>)

## Masters Degrees

The College of Engineering offers three types of Master's curriculum: thesis, project or coursework-only. Students interested in research and a career in R&D may prefer the M.S. thesis option, while students who select the M.E. or M-IT degrees may be more interested in acquiring knowledge and applying it in their professional workplace.

- The Master of Science (M.S.) degree is completed either with a thesis or a project.
- The Master of Engineering (M.E.) degree is completed without the preparation of a formal research thesis or project and is based only on coursework.
- The Master of Information Technology (M-IT) degree is completed without the preparation of a formal research thesis or project and is based only on coursework.

## A

- Aerospace Engineering - Master of Engineering in Aerospace Engineering (<https://catalogs.nmsu.edu/nmsu/graduate-school/aerospace-engineering-master-engineering/>)
- Aerospace Engineering - Master of Engineering in Aerospace Engineering (Online) (<https://catalogs.nmsu.edu/global/nmsu-global/aerospace-engineering-meae-online/>)
- Aerospace Engineering - Master of Science (<https://catalogs.nmsu.edu/nmsu/graduate-school/aerospace-engineering-master-science/>)

## C

- Chemical Engineering - Master of Engineering in Chemical Engineering (<https://catalogs.nmsu.edu/nmsu/graduate-school/chemical-engineering-master-engineering-chemical-engineering/>)
- Chemical Engineering - Master of Engineering in Chemical Engineering (Online) (<https://catalogs.nmsu.edu/global/nmsu-global/chemical-engineering-master-engineering-chemical-engineering-online/>)
- Chemical Engineering - Master of Science in Chemical Engineering (<https://catalogs.nmsu.edu/nmsu/graduate-school/chemical-engineering-master-science-chemical-engineering/>)
- Chemistry (Biochemistry) - Doctor of Philosophy (<https://catalogs.nmsu.edu/nmsu/graduate-school/chemistry-biochemistry-doctor-philosophy/>)
- Civil Engineering - Master of Engineering in Civil Engineering (<https://catalogs.nmsu.edu/nmsu/graduate-school/civil-engineering-master-engineering/>)
- Civil Engineering - Master of Engineering in Civil Engineering (Online) (<https://catalogs.nmsu.edu/global/nmsu-global/civil-engineering-mece-online/>)
- Civil Engineering - Master of Science in Civil Engineering (<https://catalogs.nmsu.edu/nmsu/graduate-school/civil-engineering-master-science-civil-engineering/>)

## E

- Electrical Engineering - Master of Engineering in Electrical Engineering (<https://catalogs.nmsu.edu/nmsu/graduate-school/electrical-engineering-master-engineering-electrical-engineering/>)
- Electrical Engineering - Master of Engineering in Electrical Engineering (Online) (<https://catalogs.nmsu.edu/global/nmsu-global/electrical-engineering-meee-online/>)
- Electrical Engineering - Master of Science in Electrical Engineering (<https://catalogs.nmsu.edu/nmsu/graduate-school/electrical-engineering-master-science-electrical-engineering/>)
- Electrical Engineering - Master of Science in Electrical Engineering (Online) (<https://catalogs.nmsu.edu/global/nmsu-global/electrical-engineering-msee-online/>)
- Environmental Engineering - Master of Science in Environmental Engineering (<https://catalogs.nmsu.edu/nmsu/graduate-school/environmental-engineering-master-science-environmental-engineering/>)

## I

- Industrial Engineering - Master of Engineering in Industrial Engineering (<https://catalogs.nmsu.edu/nmsu/graduate-school/industrial-engineering-master-engineering/>)
- Industrial Engineering - Master of Engineering in Industrial Engineering (Online) (<https://catalogs.nmsu.edu/global/nmsu-global/industrial-engineering-meie-online/>)
- Industrial Engineering - Master of Science in Industrial Engineering (<https://catalogs.nmsu.edu/nmsu/graduate-school/industrial-engineering-master-science-industrial-engineering/>)
- Industrial Engineering - Master of Science in Industrial Engineering (Online) (<https://catalogs.nmsu.edu/global/nmsu-global/industrial-engineering-msie-online/>)
- Information Technology - Master of Information Technology (Online) (<https://catalogs.nmsu.edu/global/nmsu-global/information-technology-mit-online/>)

## M

- Mechanical Engineering - Master of Engineering in Mechanical Engineering (<https://catalogs.nmsu.edu/nmsu/graduate-school/mechanical-engineering-master-engineering/>)
- Mechanical Engineering - Master of Science in Mechanical Engineering (<https://catalogs.nmsu.edu/nmsu/graduate-school/mechanical-engineering-master-science-mechanical-engineering/>)

## Advanced Manufacturing - Concentration

The graduate concentration in advanced manufacturing educates students and creates a skilled workforce for the growing needs of new technologies and advanced products in the 21st century. The program provides hands-on experience on designing, adapting, and building parts using advanced materials by including new processes, changing the supply chain, and adapting business models. It also includes the design optimization, materials selection and characterization, process parameter mapping, data analytics, software development, and final part inspection among other concepts. This concentration is maintained by the College of Engineering but is open to any Master's level major/degree.

Prefix	Title	Credits
<b>Required Courses</b>		
IE 575	Advanced Manufacturing Processes	3

IE 571	Advanced Quality Control	3
CE 510	Introduction to Nondestructive Testing	3
CHME 564	Polymer Science & Engineering	3
CHME 491/AGRO 450	Undergraduate Special Topics (AGRO 450 CHME 491 Development of Agricultural Technologies)	3
<b>Electives</b>		
5 Electives (Select 500 Level Courses from EE, CHME, IE, CE, or MAE) <sup>1</sup>		15
<b>Total Credits</b>		<b>30</b>

<sup>1</sup> With Approval of the advisor and instructor

### Selection of Advisor

Newly admitted graduate students will be assigned a temporary advisor for the first semester, but they must select a degree option and permanent advisor before registering for the second semester.

In considering a decision about option and advisor, the student should arrange to meet with several members of the graduate faculty during the first six weeks of study to discuss specific educational objectives. The student can use these meetings to become familiar with faculty interests and research projects currently in progress. The faculty member must agree (in writing) to serve as the student's advisor.

Although there is no oral exam, students will be required to complete an exit-interview with one of Advanced Manufacturing concentration and one graduate faculty member from the master of engineering they select to study.

## Doctoral Degree

### A

- Aerospace Engineering - Doctor of Philosophy (<https://catalogs.nmsu.edu/nmsu/graduate-school/aerospace-engineering-doctor-philosophy/>)

### E

- Engineering (Chemical Engineering) - Doctor of Philosophy (<https://catalogs.nmsu.edu/nmsu/graduate-school/engineering-chemical-engineering-doctor-philosophy/>)
- Engineering (Civil Engineering) - Doctor of Philosophy (<https://catalogs.nmsu.edu/nmsu/graduate-school/engineering-civil-engineering-doctor-philosophy/>)
- Engineering (Electrical Engineering) - Doctor of Philosophy (<https://catalogs.nmsu.edu/nmsu/graduate-school/engineering-electrical-engineering-doctor-philosophy/>)
- Engineering (Industrial Engineering) - Doctor of Philosophy (<https://catalogs.nmsu.edu/nmsu/graduate-school/engineering-industrial-engineering-doctor-philosophy/>)
- Engineering (Mechanical Engineering) - Doctor of Philosophy (<https://catalogs.nmsu.edu/nmsu/graduate-school/engineering-mechanical-engineering-doctor-philosophy/>)

## Graduate Certificates

- Digital Communications - Graduate Certificate (<https://catalogs.nmsu.edu/nmsu/graduate-school/digital-communications-graduate-certificate/>)

- Digital Communications - Graduate Certificate (Online) (<https://catalogs.nmsu.edu/global/nmsu-global/digital-communications-graduate-certificate-online/>)
- Digital Signal Processing - Graduate Certificate (<https://catalogs.nmsu.edu/nmsu/graduate-school/digital-signal-processing-graduate-certificate/>)
- Digital Signal Processing - Graduate Certificate (Online) (<https://catalogs.nmsu.edu/global/nmsu-global/digital-signal-processing-graduate-certificate-online/>)
- Electric Energy Systems - Graduate Certificate (<https://catalogs.nmsu.edu/nmsu/graduate-school/electric-energy-systems-graduate-certificate/>)
- Electric Energy Systems - Graduate Certificate (Online) (<https://catalogs.nmsu.edu/global/nmsu-global/electric-energy-systems-graduate-certificate-online/>)
- Systems Engineering - Graduate Certificate (<https://catalogs.nmsu.edu/nmsu/graduate-school/systems-engineering-graduate-certificate/>)
- Systems Engineering - Graduate Certificate (Online) (<https://catalogs.nmsu.edu/global/nmsu-global/systems-engineering-graduate-certificate-online/>)
- Telemetry - Graduate Certificate (<https://catalogs.nmsu.edu/nmsu/graduate-school/telemetry-graduate-certificate/>)
- Telemetry - Graduate Certificate (Online) (<https://catalogs.nmsu.edu/global/nmsu-global/telemetry-graduate-certificate-online/>)

## Undergraduate Minors

- Aerospace Engineering - Undergraduate Minor (<https://catalogs.nmsu.edu/nmsu/engineering/mechanical-aerospace-engineering/aerospace-engineering-undergraduate-minor/>)
- Agricultural Engineering - Undergraduate Minor (<https://catalogs.nmsu.edu/nmsu/engineering/civil-engineering/agricultural-engineering-undergraduate-minor/>)
- Biomedical Engineering - Undergraduate Minor (<https://catalogs.nmsu.edu/nmsu/engineering/chemical-materials-engineering/biomedical-engineering-undergraduate-minor/>)
- Brewery Engineering - Undergraduate Minor (<https://catalogs.nmsu.edu/nmsu/engineering/chemical-materials-engineering/brewery-engineering-undergraduate-minor/>)
- Computational Engineering - Undergraduate Minor (<https://catalogs.nmsu.edu/nmsu/engineering/chemical-materials-engineering/computational-engineering-undergraduate-minor/>)
- Computer Engineering - Undergraduate Minor (<https://catalogs.nmsu.edu/nmsu/engineering/electrical-computer-engineering/computer-engineering-undergraduate-minor/>)
- Computer Engineering Technology - Undergraduate Minor (<https://catalogs.nmsu.edu/nmsu/engineering/engineering-technology-surveying/computer-engineering-technology-undergraduate-minor/>)
- Digital Forensics - Undergraduate Minor (<https://catalogs.nmsu.edu/nmsu/engineering/engineering-technology-surveying/digital-forensics-undergraduate-minor/>)
- Electrical Engineering - Undergraduate Minor (<https://catalogs.nmsu.edu/nmsu/engineering/electrical-computer-engineering/electrical-engineering-undergraduate-minor/>)
- Entrepreneurship - Undergraduate Minor (<https://catalogs.nmsu.edu/nmsu/engineering/industrial-engineering/entrepreneurship-undergraduate-minor/>)

- Environmental Engineering - Undergraduate Minor (<https://catalogs.nmsu.edu/nmsu/engineering/civil-engineering/environmental-engineering-undergraduate-minor/>)
- Geomatics - Undergraduate Minor (<https://catalogs.nmsu.edu/nmsu/engineering/engineering-technology-surveying/geomatics-undergraduate-minor/>)
- Geotechnical Engineering - Undergraduate Minor (<https://catalogs.nmsu.edu/nmsu/engineering/civil-engineering/geotechnical-engineering-ug-minor/>)
- Information Security Technology - Undergraduate Minor (<https://catalogs.nmsu.edu/nmsu/engineering/engineering-technology-surveying/information-security-technology-undergraduate-minor/>)
- Lean Manufacturing and Analytics - Undergraduate Minor (<https://catalogs.nmsu.edu/nmsu/engineering/industrial-engineering/lean-manufacturing-analytics-ug-minor/>)
- Manufacturing - Undergraduate Minor (<https://catalogs.nmsu.edu/nmsu/engineering/engineering-technology-surveying/manufacturing-undergraduate-minor/>)
- Materials Engineering - Undergraduate Minor (<https://catalogs.nmsu.edu/nmsu/engineering/chemical-materials-engineering/materials-engineering-undergraduate-minor/>)
- Mechanical Engineering - Undergraduate Minor (<https://catalogs.nmsu.edu/nmsu/engineering/mechanical-aerospace-engineering/mechanical-engineering-undergraduate-minor/>)
- Nuclear Chemical Engineering - Undergraduate Minor (<https://catalogs.nmsu.edu/nmsu/engineering/chemical-materials-engineering/nuclear-chemical-engineering-undergraduate-minor/>)
- Pre-Law in Intellectual Property - Undergraduate Minor (<https://catalogs.nmsu.edu/nmsu/engineering/chemical-materials-engineering/pre-law-in-intellectual-property-undergraduate-minor/>)
- Pre-Medicine Studies- Undergraduate Minor (<https://catalogs.nmsu.edu/nmsu/engineering/chemical-materials-engineering/pre-medicine-studies-undergraduate-minor/>)
- Renewable Energy Technologies - Undergraduate Minor (<https://catalogs.nmsu.edu/nmsu/engineering/engineering-technology-surveying/renewable-energy-technologies-undergraduate-minor/>)
- Structural Engineering - Undergraduate Minor (<https://catalogs.nmsu.edu/nmsu/engineering/civil-engineering/structural-engineering-undergraduate-minor/>)
- Supply Chain and Operations Research Analytics - Undergraduate Minor (<https://catalogs.nmsu.edu/nmsu/engineering/industrial-engineering/supply-chain-operations-research-analytics-ug-minor/>)
- Systems Engineering - Undergraduate Minor (<https://catalogs.nmsu.edu/nmsu/engineering/industrial-engineering/systems-engineering-ug-minor/>)
- Water Resource Engineering - Undergraduate Minor (<https://catalogs.nmsu.edu/nmsu/engineering/civil-engineering/water-resource-engineering-ug-minor/>)

## Graduate Minor

- Advanced Manufacturing - Graduate Minor (<https://catalogs.nmsu.edu/nmsu/graduate-school/advanced-manufacturing-graduate-minor/>)
- Materials Engineering - Graduate Minor (<https://catalogs.nmsu.edu/nmsu/graduate-school/materials-engineering-graduate-minor/>)

## Accreditation

The following programs are accredited by the Engineering Accreditation Commission of ABET, <https://www.abet.org/>.

- Aerospace Engineering
- Chemical Engineering
- Civil Engineering
- Electrical Engineering
- Engineering Physics
- Industrial Engineering
- Mechanical Engineering

The following programs are accredited by the Engineering Technology Accreditation Commission of ABET, <https://www.abet.org/>.

- Civil Engineering Technology
- Electronics and Computer Engineering Technology
- Mechanical Engineering Technology

The following program is accredited by the Applied and Natural Science Accreditation Commission of ABET, <https://www.abet.org/>.

- Geomatics

The college is a member of the American Society for Engineering Education (ASEE).

Other programs under the College of Engineering, such as Information and Communications Technology, are accredited under the Higher Learning Commission (HLC) institutional accreditation.

New Mexico State University has been accredited by The Higher Learning Commission (HLC) since 1926. The HLC may be contacted at:

The Higher Learning Commission  
230 North LaSalle St., Suite 7-500  
Chicago, IL 60604-1411  
Phone: (800) 621-7440