# CHEMICAL ENGINEERING - MASTER OF ENGINEERING IN CHEMICAL ENGINEERING

The Master of Engineering in Chemical Engineering is a 30 credit hour coursework and/or project-based degree with flexibility of program design for professionals seeking advanced coursework in chemical engineering. Individual degree plans are based on consultation between the student and their advisor. Master of Engineering in Chemical Engineering requirements are as follows:

| Prefix | Title | Credits |
|---|---|---|
| **CHME Coursework** | | |
| A minimum of 15 credits of CHME 500+ courses (select from CHME 501 to CHME 594) (courses 450+ may also count up to 12 credits): | | 15 |
| CHME 501 | Graduate Thermodynamics for Chemical Engineers | |
| CHME 506 | Graduate Transport Phenomena(s) | |
| CHME 516 | Graduate Numerical Methods in Chemical Engineering | |
| CHME 542 | Graduate Reactor Analysis and Design (s) | |
| CHME 548 | Industrial Safety | |
| CHME 564 | Polymer Science & Engineering | |
| CHME 565 | Rheology and Viscoelasticity | |
| CHME 567 | Nanoscience and Nanotechnology | |
| CHME 570 | Introduction to Nuclear Energy | |
| CHME 571 | Health Physics | |
| CHME 574 | Power Plant Design | |
| CHME 576 | Nuclear Fuel Cycles | |
| CHME 578 | Electrochemistry: Basics & Applications | |
| CHME 590 | Graduate Seminar | |
| CHME 591 | Graduate Special Topics | |
| CHME 593 | Graduate Special Projects | |
| CHME 594 | Professional Communication in Chemical Engineering | |
| **Open Electives** | | |
| Students are expected to take an additional minimum of 15 credits of electives from any areas such as chemical engineering, other engineering, business, economics, fundamental sciences, environmental sciences, etc., to be consistent with their personal ME theme or emphasis. Thesis, research, or dissertation credits do not count. | | 15 |
| **Optional Engineering Project Sequence or CHME Coursework** [1] | | |
| CHME 595 | Chemical Process Design and Business Analysis | |
| CHME 596 | Chemical Process Industries Research | |
| CHME 597 | Advanced Chemical Process Industry Analysis | |
| **Total Credits** | | **30** |

[1] Students will define and execute an engineering project through their employer while taking the following 3-semester course sequence. This may replace 6 credit hours of CHME coursework.

| | | |
|---|---|---|
| **First Year** | | |
| **Fall** | | **Credits** |
| CHME Elective | | 3 |
| CHME Elective | | 3 |
| CHME Elective | | 3 |
| | **Credits** | **9** |
| **Spring** | | |
| CHME Elective | | 3 |
| CHME Elective | | 3 |
| Open Elective [1] | | 3 |
| | **Credits** | **9** |
| **Second Year** | | |
| **Fall** | | |
| Open Elective [1] | | 3 |
| Open Elective [1] | | 3 |
| Open Elective [1] | | 3 |
| | **Credits** | **9** |
| **Spring** | | |
| Open Elective [1] | | 3 |
| | **Credits** | **3** |
| | **Total Credits** | **30** |

[1] Students are expected to take a minimum of 15 credits of open electives from any areas such as chemical engineering, other engineering, business, economics, fundamental sciences, environmental sciences, etc., to be be consistent with their personal ME theme or emphasis.

[2] Students interested in a Chemical Process Industries emphasis may replace 6 credits of courses with the following sequence: CHME 595 Chemical Process Design and Business Analysis, CHME 596 Chemical Process Industries Research, CHME 597 Advanced Chemical Process Industry Analysis.

### MAP Requirements

- The Graduate School allows qualified junior or senior students to substitute its graduate courses for required or elective courses in an undergraduate degree program and then subsequently count those same course as fulfilling graduate requirements in a related graduate program.
- Undergraduate students may apply for acceptance to the accelerated master's program after completing 60 semester hours of undergraduate coursework of which a minimum of 25 semester credit hours must be completed at NMSU.
- The grade point average must be at a minimum of 2.75.

Students must receive a grade of B or higher in this coursework to be counted for graduate credit. If a grade of B- or lower is earned, it will not count toward the graduate degree.

### Accepted MAP Courses

The following courses are accepted for use in the MAP program. Other courses may be considered after a consultation with the program advisor.

| Prefix | Title | Credits |
|---|---|---|
| CHME 451 | Intellectual Property for Engineers and Scientists | 3 |
| CHME 452 | Chemical Process Design & Economic Evaluation | 3 |

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|---|---|---|
| CHME 455 | Chemical Plant Design | 3 |
| CHME 455 L | Chemical Plant Simulation | 1 |
| CHME 461 | Calculation of Material and Molecular Properties | 3 |
| CHME 464 | Polymer Science & Engineering | 3 |
| CHME 467 | Nanoscience and Nanotechnology | 3 |
| CHME 470 | Introduction to Nuclear Energy | 3 |
| CHME 471 | Health Physics | 3 |
| CHME 474 | Power Plant Design | 3 |
| CHME 476 | Nuclear Fuel Cycles | 3 |
| CHME 478 | Electrochemistry: Basics & Applications | 3 |
| CHME 479 | Corrosion and Degradation of Materials | 3 |
| CHME 481 | Biomedical Engineering and Engineering Healthcare | 3 |
| CHME 495 | Brewing Science & Engineering | 3 |
| CHME 495 L | Brewing Science & Technology Lab | 1 |
| CHME 501 | Graduate Thermodynamics for Chemical Engineers | 3 |
| CHME 506 | Graduate Transport Phenomena(s) | 3 |
| CHME 516 | Graduate Numerical Methods in Chemical Engineering | 3 |
| CHME 542 | Graduate Reactor Analysis and Design (s) | 3 |
| CHME 548 | Industrial Safety | 3 |
| CHME 564 | Polymer Science & Engineering | 3 |
| CHME 565 | Rheology and Viscoelasticity | 3 |
| CHME 567 | Nanoscience and Nanotechnology | 3 |
| CHME 570 | Introduction to Nuclear Energy | 3 |
| CHME 571 | Health Physics | 3 |
| CHME 574 | Power Plant Design | 3 |
| CHME 576 | Nuclear Fuel Cycles | 3 |
| CHME 578 | Electrochemistry: Basics & Applications | 3 |
| CHME 591 | Graduate Special Topics | 1-3 |
| CHME 593 | Graduate Special Projects | 1-3 |
| CHME 594 | Professional Communication in Chemical Engineering | 2 |
| CHME 595 | Chemical Process Design and Business Analysis | 3 |
| CHME 596 | Chemical Process Industries Research | 1 |
| CHME 597 | Advanced Chemical Process Industry Analysis | 2 |