Master of Science (MS),
Major: Chemical Engineering

The Chemical Engineering Program fosters a community of scholars, among its faculty members and graduate students, with the interest of advancing knowledge and contributing to the profession. The program offers a graduate program leading to the following degrees:

- Master of Science, major Chemical Engineering

The MS program will be open to students with a Bachelor of Science (BS) in Chemical Engineering, or other related disciplines. The MS program will also be open to students with a Bachelor of Science degree in chemistry, biology, mathematics, or physics.

The student must complete a minimum of 31 course credit hours and a 9 credit hours thesis for the MS option (40 credits in total), accomplished on a full or part-time basis as below. A minimum of one calendar year of residence is required for graduation from this program.

The required 40 course credit hours and thesis are distributed as follows:

- A mandatory three-credit course in applied mathematics. The math course or math-oriented course offered by other departments must be approved by the graduate student advisor; acceptable courses include, but are not limited to the following:
  - MATH 350: Discrete Models for Differential Equations (3 cr.),
  - MATH 351: Optimization and Non-Linear Problems (3 cr.),
  - ENMG 604: Deterministic Optimization Models (3 cr.),
  - MECH 630: Finite Element Methods in Mechanical Engineering (3 cr.),
  - MECH 663: Computational Fluid Dynamics (3 cr.)

At least three (for MS degree) advanced fundamental chemical engineering three-credit courses from two different concentrations. The following is a list of recommended courses by concentration:

**Reaction Engineering:** CHEN 517, CHEN 617

**Transport Phenomena:** CHEN 511, CHEN 613, CHEN 615

**Process Engineering:** CHEN 570, CHEN 571, CHEN 651

- **Seminar Course:** CHEN 797 (zero credit). Students must register for the course once per year.

- **Thesis:** CHEN 799 (equivalent to nine credit hours) based on independent research.

- A mandatory ten-credit courses from Chemical Engineering Electives:
  - CHEN 531: Principles of Corrosion (3 cr.),
  - CHEN 612: Desalination (3 cr.),
  - CHEN 618: Colloid and Interface Science (3 cr.),
  - CHEN 670: Advanced Process Flowsheeting (3 cr.),
  - CHEN 672: Polymer Science (3 cr.),
  - CHEN 673: Engineering of Drug Delivery Systems (3 cr.),
  - CHEN 674: Process Operations and Diagnosis (3 cr.),
  - CHEN 690: Reservoir Engineering (3 cr.),
  - CHEN 796: Engineering Literature Critique (1 cr.),
  - CHEN 798: Special Topics in Chemical Engineering I (3 cr.)

- A mandatory nine-credit courses from Non-Chemical Engineering Electives:
  - CIVE 654: Solid Waste Management I (3 cr.),
  - CIVE 656: Air Pollution and Control I (3 cr.),
  - CIVE 753: Processes in Water and Wastewater Treatment (3 cr.),
  - MECH 660: Advanced Fluid Mechanics (3 cr.),
  - MECH 701: Principles of Combustion (3 cr.),
MECH 761: Convective Heat Transfer (3 cr.)

Science majors wishing to pursue an MS degree in chemical engineering (added):

**Required core chemical engineering courses:** CHEN 311, CHEN 314, CHEN 411, CHEN 417, CHEN 451 and CHEN 451L

Additionally, **one of the following three courses will be required:** CHEN 312, CHEN 351, CHEN 470.

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Frequently Asked Question:
http://www.aub.edu.lb/units/graduate_council/Pages/faq.aspx