Did you know?

- Did you graduate from UML engineering with a GPA over 3.0 within the past five years? We’ll waive the application fee and the GRE requirement!
- A Masters of Science in Chemical Engineering and Energy Engineering—Nuclear Option consists of 30 credits for a thesis, project-based or coursework-only degree.
- You can do your degree as a full-time or part-time degree.
- Doctoral programs - both PhD and D.Eng - are available in Chemical Engineering.
- Teaching and/or Research Assistantships may be available for full-time grad students!
- We have externally funded research—over $8 million/year for the College—including projects in biomanufacturing, applications of nanotechnology & nanomanufacturing!
- Other Graduate options include the Masters in Education, MBA and new Masters in Innovation and Technological Entrepreneurship.

Quality!- Courses are taught by well qualified full-time faculty or adjunct faculty from industry.
Value!! - $1678 tuition + fees per 3 credit on-campus course for Massachusetts residents
*Courses offered through Continuing Ed-$1485 tuition & fees per 3 credit course.
Convenience! - We’re close to Boston

Sign up for a course as a non-matriculated student, or apply for the degree program

Chemical Engineering Info:
Web: chemical.uml.edu
Dept. Office: 978-934-3150
Prof. Al Donatelli
Department Chair
Alfred_Donatelli@uml.edu
Graduate School Info:
www.uml.edu/grad
978-934-2390
Prof. Francis Bonner
Graduate Coordinator
Francis_Bonner@uml.edu
Continuing Education Info:
continuinged.uml.edu
978-934-2474
Prof. Gilbert Brown
Grad Coordinator, Nuclear
Gilbert_Brown@uml.edu
Chemical Engineering

Courses are scheduled in the late afternoon and evening to provide study opportunities for students with full-time employment.

Fall 2009 Graduate Classes
All courses 6pm-8:50pm unless noted in blue

<table>
<thead>
<tr>
<th>Day</th>
<th>Course Title</th>
<th>Instructor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday</td>
<td>10.502.201 Principles of Chemical Engineering</td>
<td>Walkinshaw</td>
</tr>
<tr>
<td></td>
<td>9:30-10:20am MWF (for non ChemE majors)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>10.528.201 Advanced Transport Phenomena</td>
<td>Donatelli</td>
</tr>
<tr>
<td></td>
<td>3:30-4:45pm MW</td>
<td></td>
</tr>
<tr>
<td></td>
<td>10.539.201 Mathematical Methods for Engineers</td>
<td>White</td>
</tr>
<tr>
<td></td>
<td>5:00-6:15pm MW</td>
<td></td>
</tr>
<tr>
<td></td>
<td>22.513.201 Finite Element Analysis I</td>
<td>Sherwood</td>
</tr>
<tr>
<td></td>
<td>5:00-6:15pm MW</td>
<td></td>
</tr>
<tr>
<td></td>
<td>22.576.201 Engineering Project Management</td>
<td>Shina</td>
</tr>
<tr>
<td></td>
<td>6:30-9:30pm</td>
<td></td>
</tr>
<tr>
<td></td>
<td>81.519.201 Biochemistry I</td>
<td>Falcone</td>
</tr>
<tr>
<td></td>
<td>5:30-6:50pm MW</td>
<td></td>
</tr>
<tr>
<td>Tuesday</td>
<td>10.506.201 Colloidal Nanoscience and Nanoscale En.</td>
<td>Bonner</td>
</tr>
<tr>
<td></td>
<td>2:30-4:50pm</td>
<td></td>
</tr>
<tr>
<td></td>
<td>10.529.201 Recent Advances in Nanotechnology &amp;</td>
<td>Manohar</td>
</tr>
<tr>
<td></td>
<td>Green Chemistry</td>
<td></td>
</tr>
<tr>
<td></td>
<td>10.586.801 Biotechnology Processing Projects Lab</td>
<td>Lawton</td>
</tr>
<tr>
<td></td>
<td>3:00-5:50pm</td>
<td></td>
</tr>
<tr>
<td></td>
<td>22.521.201 Solar Fundamentals</td>
<td>Duffy</td>
</tr>
<tr>
<td></td>
<td>5:00-6:20pm</td>
<td></td>
</tr>
<tr>
<td></td>
<td>26.514.201 Statistics for Six Sigma</td>
<td>Stacer</td>
</tr>
<tr>
<td></td>
<td>26.544.201 Advanced Plastics Materials I</td>
<td>Driscoll</td>
</tr>
<tr>
<td>Wednesday</td>
<td>10.535.201 Cell &amp; Microbe Cultivation</td>
<td>Lawton</td>
</tr>
<tr>
<td></td>
<td>5:00-7:30pm</td>
<td></td>
</tr>
<tr>
<td></td>
<td>26.506.201 Polymer Structure, Props &amp; Applications</td>
<td>Nagarajan</td>
</tr>
<tr>
<td></td>
<td>26.544.201 Advanced Plastics Materials I</td>
<td></td>
</tr>
<tr>
<td></td>
<td>26.544.201 Advanced Plastics Materials I</td>
<td></td>
</tr>
<tr>
<td>Thursday</td>
<td>25.550.201 Introduction to Nanotechnology</td>
<td>Mead</td>
</tr>
<tr>
<td></td>
<td>26.503.201 Mechanical Behavior of Polymers</td>
<td>Stacer</td>
</tr>
<tr>
<td>Friday</td>
<td>10.541.201 Nanocharacterizin' by STEM, TEM &amp; AFM</td>
<td>Lee</td>
</tr>
<tr>
<td>TBA</td>
<td>24.505.201 Reactor Physics</td>
<td>TBA</td>
</tr>
</tbody>
</table>

Graduate Information

M.S. in Chemical Engineering

- **Requirements**: 30 credit hours which can include a 6 credit thesis, 3 credit project or coursework only. Students are required to take at least one course from each of the three core areas:
  - Advanced Mathematics
  - Thermal/Fluid Processes
  - Solid Mechanics

M.S. in Energy Engineering—Nuclear Option

- **Requirements**: 30 credit hours which can include a 6 credit thesis, 3 credit project or coursework only.

Graduate Certificate Programs (I = Interdisciplinary):

- Biotechnology and Bioprocessing
- Materials Science and Engineering
- Modeling, simulation and Control of Systems and Processes
- Biomedical Engineering I
- Nanotechnology I
- Energy Conversion I

D.Eng. and Ph.D. in Chemical Engineering

- **Requirements**:
  - 63 credit hours of graduate level courses total
  - 42 credit hours of graduate course work
  - 21 credit hours of doctoral dissertation
  - For the DEng degree, 9 of the 42 coursework credits are Management courses

Teaching & Research Assistantship Stipend/Waiver Information: (for full year, double the amounts shown)

<table>
<thead>
<tr>
<th>Item</th>
<th>half-time</th>
<th>TA/RA per semester</th>
<th>full-time</th>
<th>TA/RA per semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>in-state</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>out-of-state &amp; foreign</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>stipend</td>
<td>$3252</td>
<td>$3252</td>
<td>$6,504</td>
<td>$6,504</td>
</tr>
<tr>
<td>tuition &amp; fees waiver</td>
<td>$3261</td>
<td>$5228</td>
<td>$5761</td>
<td>$9695</td>
</tr>
<tr>
<td>total TA/RA value per semester</td>
<td>$6513</td>
<td>$8480</td>
<td>$12,265</td>
<td>$16,199</td>
</tr>
</tbody>
</table>

**Education Costs** - Full time (9 credits) per semester:
In-state: $5034, Out of state: $9365
New England Regional & New England Proximity: $7380

Department Faculty Members

- **Frank J. Bonner**, Professor & Grad Coordinator
  - S.B., S.M. Massachusetts Institute of Technology,
  - Ph.D. University of Delaware,
  - Fil.Lic., Fil.Dr. University of Uppsala, Sweden

- **Gilbert J. Brown**, Professor & Nuclear Eng. Grad Coordinator
  - B.S. Cornell University,
  - S.M., Ph.D. Massachusetts Institute of Technology

- **Alfred A. Donatelli**, Professor & Department Chair
  - B.S., M.S. Lowell Technological Institute,
  - Ph.D. Lehigh University

- **Zhiyong Gu**, Assistant Professor
  - B.E. Qingdao Institute of Chemical Technology,
  - M.S. University of Notre Dame,
  - Ph.D. State University of New York at Buffalo

- **John W. Walkinshaw**, Professor & Undergrad Coordinator
  - B.S., M.S. Lowell Technological Institute,
  - P.E.

- **Sanjeev Manohar**, Associate Professor
  - B.S., M.Sc. University of Madras, India,
  - M.S. Southern Illinois University,
  - Ph.D. University of Pennsylvania

- **James R. Sheff**, Professor
  - B.S. University of Colorado, M.S., Ph.D. University of Washington,
  - P.E.

- **Krishna Vedula**, Professor & Dean Emeritus
  - B.Tech. IIT, Bombay,
  - M.S. Southern Illinois University,
  - Ph.D. Michigan Technological University

- **John W. Walkinshaw**, Professor & Undergrad Coordinator
  - B.S., M.S.(2) Lowell Technological Institute,
  - Ph.D. Victoria University of Manchester, England,
  - P.E.

- **John R. White**, Professor
  - B.S. University of Lowell,
  - Ph.D. University of Tennessee

Adjunct Faculty Members

- **Leo M. Bobek**, B.S. M.S., University of Lowell

- **Jung Seok Lee**, B.S. Dongguk University, Korea,
  - M.S. University of Southern California,
  - D.Eng. Univ. Massachusetts Lowell

- **Susan E. Poniatowski**, B.S., M.S. University of Lowell

- **Glenn J. Sunberg**, B.S., M.S., Ph.D. Rutgers University