# Chemical Engineering (PhD)

## Degree Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
<th>Counts towards</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Required Courses</td>
<td></td>
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</tr>
<tr>
<td>CHE 701</td>
<td>Introduction to Chemical Engineering Research</td>
<td></td>
<td>16</td>
</tr>
<tr>
<td>CHE 702</td>
<td>Chemical Engineering Research Proposition</td>
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<tr>
<td>CHE 711</td>
<td>Chemical Engineering Process Modeling</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHE 713</td>
<td>Thermodynamics I</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHE 715</td>
<td>Transport Phenomena</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHE 717</td>
<td>Chemical Reaction Engineering</td>
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</tbody>
</table>

**Additional Courses**

Select six additional credit hours at 500 or 700 level in any technical discipline approved in conjunction with the academic committee.

**Dissertation Research Course**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
<th>Counts towards</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHE 895</td>
<td>Doctoral Dissertation Research</td>
<td></td>
<td>6</td>
</tr>
</tbody>
</table>

**Elective Courses**

“Elective Courses” are determined in conjunction with the academic committee to meet the 72 total credit hours.

**Preliminary Exam**

The Preliminary Exam is taken in the 4th semester, however, it requires an annual progress report.

**Total Hours**

72

## Elective Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
<th>Counts towards</th>
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</thead>
<tbody>
<tr>
<td>CHE 543</td>
<td>Polymer Science and Technology</td>
<td>3</td>
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<tr>
<td>CHE 551</td>
<td>Biochemical Engineering</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>CHE 560</td>
<td>Chemical Processing of Electronic Materials</td>
<td>3</td>
<td></td>
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<tr>
<td>CHE 562</td>
<td>Fundamentals of Bio-Nanotechnology</td>
<td>3</td>
<td></td>
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<tr>
<td>CHE 563</td>
<td>Fermentation of Recombinant Microorganisms</td>
<td>2</td>
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<tr>
<td>CHE 568</td>
<td>Conventional and Emerging Nanomanufacturing Techniques and Their Applications in Nanosystems</td>
<td>3</td>
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<tr>
<td>CHE 577</td>
<td>Advanced Biomanufacturing and Biocatalysis</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>CHE 596</td>
<td>Special Topics in Chemical Engineering (Colloid Science &amp; Nanoscale Engineering)</td>
<td>1-3</td>
<td></td>
</tr>
<tr>
<td>CHE 596</td>
<td>Special Topics in Chemical Engineering (Green Chemical Engineering)</td>
<td>1-3</td>
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<tr>
<td>CHE 596</td>
<td>Special Topics in Chemical Engineering (Molecular Cell Engineering)</td>
<td>1-3</td>
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<tr>
<td>CHE 596</td>
<td>Special Topics in Chemical Engineering (Chemical Process Engineering)</td>
<td>1-3</td>
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<tr>
<td>CHE 596</td>
<td>Special Topics in Chemical Engineering (Polymer Rheology and Processing)</td>
<td>1-3</td>
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<tr>
<td>CHE 596</td>
<td>Special Topics in Chemical Engineering (Drug Delivery Concepts)</td>
<td>1-3</td>
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<tr>
<td>CHE 761</td>
<td>Polymer Blends and Alloys</td>
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<tr>
<td>CHE 775</td>
<td>Multi-Scale Modeling of Matter</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>
Faculty

Full Professors
Ruben G. Carbonell
Michael David Dickey
Peter S. Fedkiw
Jan Genzer
Christine S. Grant
Carol K. Hall
Jason M. Haugh
Hasan Jameel
Robert M. Kelly
Saad A. Khan
Fanxing Li
Gregory N Parsons
Walter James Pfaendtner
Behnam Pourdeyhimi
Balaji M. Rao
Sindee Lou Simon
Richard J. Spontak
Orlin Dimitrov Velev
Phillip R. Westmoreland

Associate Professors
Milad Abolhasani
Adriana San Miguel Delgadillo
Chien Ching Lilian Hsiao
Albert Jun Qi Keung
Stefano Menegatti
Erik Emilio Santiso
Qingshan Wei

Assistant Professors
Nathan Crook
Artem Rumyantsev
Wentao Tang

Practice/Research/Teaching Professors
Cristina Boi
Lisa G. Bullard
Matthew Ellis Cooper
Kirill Efimenko
Gary Louis Gilleskie
Hassan Golpour
Gregory McKenna
Luke Neal
John H. van Zanten

Adjunct Faculty
Anthony L. Andrade
Orlando J. Rojas

Emeritus Faculty
Joseph M. DeSimone
Richard M. Felder
Michael Carl Flickinger
Keith Gubbins
Harold B. Hopfenberg
Harold Henry Lamb
Phooi K. Lim
Steven W. Peretti
Hubert Winston