Co-terminal: BS Architectural Engineering + MAS Degree Programs

The BSARCE+MAS co-terminal degree programs are designed for students to earn the Bachelor of Science in Architectural Engineering (BSARCE, normally 136 credit hours) and the Master degree (normally 32 credit hours) in five years of study with a total of 159 credit hours.

These programs will have the students begin specialization during the 7th semester using 9 credit hours of technical electives in the BSARCE curriculum. More details are given in the following typical curricula for 3 co-terminal degree programs in the CAEE Department. You may also contact the faculty advisor about each of these programs identified below.

- Co-terminal: BS Architectural Engineering + MAS Architectural Engineering  
  Dr. J. Mohammadi
- Co-terminal: BS Architectural Engineering + MAS Construction Engineering and Management  
  Dr. D. Arditi
- Co-terminal: BS Architectural Engineering + MAS Structural Engineering  
  Dr. J. Shen

You may be eligible to apply for admission to one of these programs after you are enrolled in the BSARCE program.
Co-terminal: BS Architectural Engineering + MAS Architectural Engineering

Semesters 1 through 8 are identical to those of the BSARCE curriculum in the Undergraduate Bulletin, except that the 9 credit hours of undergraduate technical electives in Semesters 7 and 8 are: CAE 531 Physical Performance of Building, CAE 542 Acoustic and Lighting, and CAE 574 Economic Decision Analyses in Civil Engineering.

<table>
<thead>
<tr>
<th>Semester 9</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>Technical Elective (400 or 500-level ARCE course)</td>
<td>3</td>
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<tr>
<td>Technical Elective (400 or 500-level ARCE course)</td>
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<td>Total</td>
<td>12</td>
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<table>
<thead>
<tr>
<th>Semester 10</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technical Elective (400 or 500-level ARCE course)</td>
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</tr>
<tr>
<td>Technical Elective (400 or 500-level ARCE course)</td>
<td>3</td>
</tr>
<tr>
<td>Technical Elective (400 or 500-level ARCE course)</td>
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<td>Total</td>
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</table>

The 23 credit hours of graduate technical electives in Semesters 9 and 10 are selected from the following list of ARCE courses:

CAE 507 Control of Sound and Vibrations in Buildings
CAE 509 Analysis and Design of Acoustic Places
CAE 521 Building Illumination Design
CAE 524 Design of Building Enclosures
CAE 526 Energy Conservation Design in Buildings
CAE 528 Communication and Electrical Systems in Buildings
CAE 597 Special Topics in Architectural Engineering
CAE 437 Homeland Security Concerns in Civil Engineering Systems
CAE 472 Construction Site Operation
CAE 473 Construction Contract Administration
CAE 522 Structural Model Analysis
CAE 575 Systems analysis in construction

or any other 400 or 500-level courses with consent of the advisor.
Co-terminal: BS Architectural Engineering + MAS Construction Engineering and Management

Semesters 1 through 8 are identical to those of the BSARCE curriculum in the Undergraduate Bulletin, except that the 9 credit hours of undergraduate technical electives in Semesters 7 and 8 are: CAE 472 Construction Site Operation, CAE 473 Construction Contract Administration, and CAE 573 Construction Management with BIM.

Semester 9 Credits
CAE 570 Legal Issues in Construction 3  
CAE 574 Economic Decision Analyses in CE 3  
Technical Elective (500-level CEM course) 3  
Technical Elective (500-level CEM course) 3  
Total 12

Semester 10 Credits
CAE 571 Lean Construction and Controls 3  
CAE 577 Construction Equipment Management 3  
Technical Elective (500-level CEM course) 3  
CAE 597 Special Problem in CEM or Technical Elective (500-level CEM course) 2  
Total 11

The 11 credit hours of graduate technical electives in Semesters 9 and 10 are selected from the following list of CEM courses:

- CAE 539 Introduction to GIS  
- CAE 572 Construction Cost Accounting  
- CAE 573 Construction Management with BIM  
- CAE 575 Systems Analysis in CE  
- CAE 576 Legal Issues in Real Estate  
- CAE 578 Construction Claims Management  
- CAE 579 Real Estate Fundamentals for Civil Engineers

or any other 400 or 500-level courses with consent of the advisor.
Co-terminal: BS Architectural Engineering + MAS Structural Engineering

Semesters 1 through 8 are identical to those of the BSARCE curriculum in the Undergraduate Bulletin, except that the 9 credit hours of undergraduate technical electives in Semesters 7 and 8 are: CAE 310 Structural Analysis II, CAE 431 Steel Design, and CAE 432 Concrete and Foundation Design.

Semester 9

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>MMAE 501 Engineering Analysis or CAE 514 Mathematical Methods for STE</td>
<td>3</td>
</tr>
<tr>
<td>CAE 503 Advanced Structural Theory</td>
<td>3</td>
</tr>
<tr>
<td>CAE 518 Advance Reinforced Concrete</td>
<td>3</td>
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<tr>
<td>Technical Elective (400 or 500-level STE course)</td>
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<td><strong>Total</strong></td>
<td><strong>12</strong></td>
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Semester 10

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>CAE 525 Advanced Steel and Composite</td>
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<tr>
<td>Technical Elective (400 or 500-level STE course)</td>
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</tr>
<tr>
<td>Technical Elective (400 or 500-level STE course)</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>11</strong></td>
</tr>
</tbody>
</table>

The 10 credit hours of graduate technical electives in Semesters 9 and 10 are selected from the following list of STE courses:

- CAE 408 Bridge and Structural Design
- CAE 410 Introduction to Wind & Earthquake Engineering
- CAE 420 Introduction to Dynamics of Structures
- CAE 430 Probability Concepts in CE
- CAE 442 Finite Element Methods in Framed Structures
- CAE 503 Advanced Structural Theory and Design
- CAE 504 Seismic Retrofit & Earthquake Hazard Reduction
- CAE 505 Infrastructure Rehab Engineering
- CAE 506 Bldg Envelope Rehab Engineering
- CAE 508 Bridge Inspection, Rehab, Repair and Management
- CAE 514 Mathematical Methods for Structural Engineering
- CAE 518 Advanced Reinforced Concrete
- CAE 520 Buckling of Structures
- CAE 522 Structural Model Analysis
- CAE 525 Advanced Steel and Composite Structures
- CAE 530 Finite Element Method of Analysis
- CAE 551 Prestressed Concrete
- CAE 560 Plastic Methods
- CAE 561 Structural Reliability and Probabilistic Bases of Design
- CAE 582 Structural Wind & Earthquake Engineering
- CAE 583 Performance-Based Structural and Seismic Design
- CAE 586 Seismic Design of Buildings and Bridges

or any other 400 or 500-level courses with consent of the advisor.