Computational Science - Computational Engineering, P.S.M.

This major develops graduates that are technical experts in computational techniques used in various engineering disciplines. Graduates will lead efforts in the workplace to meet goals using data, quantitative techniques, and business analytics. A graduate’s professional and communication skills will allow her/him to serve as lead technical resource for collaboration between units in her/his organization.

Graduate Advisor: Dr. Evan Lemley
Email: elemley@uco.edu
Office: STEM 116D
Phone: (405) 974 - 5473

Admission Requirements

Submit the following items to:
Jackson College of Graduate Studies
100 N. University Drive, NUC 404
Edmond, OK 73034

- Online application for admission (www.uco.edu/graduate/).
- Official copies of undergraduate and graduate transcripts from each institution attended with all degrees posted. All transcripts must be from accredited institutions. Undergraduate transcripts must show:
  - Bachelor’s degree in any subject area. If not in an area of science, technology, engineering or mathematics, then applicant should demonstrate work or other experience that has prepared them for the PSM program.
- Undergraduate and graduate transcripts from all institutions attended that record a minimum overall GPA of 2.75 and a minimum of 3.00 in the last 60 hours.
- The GRE exam is not required, but a minimum combined verbal and quantitative score of 300 is recommended.
- Two letters of recommendation.
- Meet with the PSM program director to plan the curriculum and Integrative Project prior to enrollment in the first semester of study.
- Establish a professional social media presence (Linkedin.com for example) and link to the PSM program director.

*Students falling below these standards may qualify for conditional admission. See Admissions to Graduate Studies (p.13).

Note: Students must meet with faculty mentor/advisor in group or individual advisement session before enrolling.

Other Requirements

- Plan of Study. Each student must file a plan of study with his/her graduate program advisor and the Jackson College of Graduate Studies (JCGS) by the end of the first semester during which they complete their twelfth hour of graduate work. The plan must be signed and dated by the student and the graduate program advisor before it can be considered official.

- Academic Standards. Meet the following course work standards:
  - Minimum cumulative graduate GPA of 3.00 in all graduate courses.
  - No more than six (6) graduate credit hours of C grades.
  - Courses with a grade lower than a C do not apply toward graduation.
  - Successful completion of the Integrative Project sequence.
  - In the final semester of study, apply for graduation through the JCGS by the advertised deadline.

Graduation Requirements

Required PSM Courses ........................................ 12 Hours

<table>
<thead>
<tr>
<th>Course Prefix</th>
<th>Course No.</th>
<th>Course Title</th>
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</thead>
<tbody>
<tr>
<td>PSM</td>
<td>5013</td>
<td>Computational Science for Professionals I</td>
</tr>
<tr>
<td>PSM</td>
<td>5113</td>
<td>Computational Science for Professionals II</td>
</tr>
<tr>
<td>PSM</td>
<td>5681</td>
<td>Integrative Project I</td>
</tr>
<tr>
<td>PSM</td>
<td>5781</td>
<td>Integrative Project II</td>
</tr>
<tr>
<td>PSM</td>
<td>5881</td>
<td>Integrative Project III</td>
</tr>
<tr>
<td>PSM</td>
<td>5203</td>
<td>Introduction to Data Science</td>
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</table>

Required Management Courses ......................... 7-8 Hours

<table>
<thead>
<tr>
<th>Course Prefix</th>
<th>Course No.</th>
<th>Course Title</th>
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</thead>
<tbody>
<tr>
<td>ISOM</td>
<td>5333</td>
<td>Project Management OR</td>
</tr>
<tr>
<td>MBA</td>
<td>5552</td>
<td>Project and Program Management</td>
</tr>
<tr>
<td>MBA</td>
<td>5033</td>
<td>Creative Problem Solving</td>
</tr>
<tr>
<td>MBA</td>
<td>5352</td>
<td>Managerial &amp; Operational Analytics</td>
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</table>

Elective Business Course(s) ............................ 2-4 Hours

Choose 2-4 hours from the list below:

<table>
<thead>
<tr>
<th>Course Prefix</th>
<th>Course No.</th>
<th>Course Title</th>
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</thead>
<tbody>
<tr>
<td>MBA</td>
<td>5042</td>
<td>Managerial Economics</td>
</tr>
<tr>
<td>MBA</td>
<td>5142</td>
<td>Managerial Finance</td>
</tr>
<tr>
<td>MBA</td>
<td>5172</td>
<td>Managerial Accounting</td>
</tr>
<tr>
<td>MBA</td>
<td>5243</td>
<td>Leading People in Organizations</td>
</tr>
<tr>
<td>MBA</td>
<td>5572</td>
<td>Business Ethics &amp; Sustainability</td>
</tr>
<tr>
<td>MBA</td>
<td>5642</td>
<td>Organizational Change &amp; Innovation</td>
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<tr>
<td>MSBA</td>
<td>5232</td>
<td>Data Visualization</td>
</tr>
<tr>
<td>MSBA</td>
<td>5314</td>
<td>Applied Analytics</td>
</tr>
</tbody>
</table>

continued...
Program: Computational Science
Major: Computational Engineering

Guided Electives ..............................................................9 Hours
*Choose 9 hours from the list below:

<table>
<thead>
<tr>
<th>Course Prefix</th>
<th>Course No.</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>ENGR</td>
<td>5023</td>
<td>Heat Transfer</td>
</tr>
<tr>
<td>ENGR</td>
<td>5103</td>
<td>Finite Element Analysis</td>
</tr>
<tr>
<td>BME</td>
<td>5223</td>
<td>Biomedical Imaging</td>
</tr>
<tr>
<td>BME</td>
<td>5233</td>
<td>Biomedical Instrumentation</td>
</tr>
<tr>
<td>ENGR</td>
<td>5323</td>
<td>Digital &amp; Analog Communication</td>
</tr>
<tr>
<td>ENGR</td>
<td>5333</td>
<td>Digital Signal Processing &amp; Laboratory</td>
</tr>
<tr>
<td>BME</td>
<td>5343</td>
<td>Biomechanics</td>
</tr>
<tr>
<td>ENGR</td>
<td>5443</td>
<td>Fluid Dynamics</td>
</tr>
<tr>
<td>ENGR</td>
<td>5533</td>
<td>Thermal Systems Design</td>
</tr>
<tr>
<td>ENGR</td>
<td>5803</td>
<td>Mechatronics &amp; Laboratory</td>
</tr>
</tbody>
</table>

General Electives .............................................................3 Hours
*Choose 3 hours from the list below:

<table>
<thead>
<tr>
<th>Course Prefix</th>
<th>Course No.</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO</td>
<td>5xxx</td>
<td>Graduate BIO Course</td>
</tr>
<tr>
<td>BME</td>
<td>5xxx</td>
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</tr>
<tr>
<td>CHEM</td>
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</tr>
<tr>
<td>CMSC</td>
<td>5xxx</td>
<td>Graduate CMSC Course</td>
</tr>
<tr>
<td>ENGR</td>
<td>5xxx</td>
<td>Graduate ENGR Course</td>
</tr>
<tr>
<td>MATH</td>
<td>5xxx</td>
<td>Graduate MATH Course</td>
</tr>
<tr>
<td>PHY</td>
<td>5xxx</td>
<td>Graduate PHY Course</td>
</tr>
<tr>
<td>STAT</td>
<td>5xxx</td>
<td>Graduate STAT Course</td>
</tr>
</tbody>
</table>

TOTAL HOURS REQUIRED ........................................33-36 HOURS