GEOSCIENCE, MPSM

Requirements for Students Matriculating in or before Academic Year 2023-2024. Learn more about Graduate College Academic Regulation 7.0 (http://catalog.okstate.edu/graduate-college/#70).

Total Hours: 36

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td></td>
<td><strong>Core Courses</strong></td>
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<tr>
<td></td>
<td>Select 9 hours from the following:</td>
<td>9</td>
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<tr>
<td>GEOL 5213</td>
<td>Seismic Interpretation</td>
<td></td>
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<tr>
<td>GEOL 5383</td>
<td>Sequence Stratigraphy</td>
<td></td>
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<tr>
<td>GEOL 5223</td>
<td>Advanced Methods in Structural Geology</td>
<td></td>
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<tr>
<td>GEOL 5333</td>
<td>Applied Geostatistics</td>
<td></td>
</tr>
<tr>
<td>GEOL 5463</td>
<td>Physical Hydrogeology</td>
<td></td>
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<tr>
<td>GEOL 5103</td>
<td>Introduction to Geophysical Exploration</td>
<td></td>
</tr>
<tr>
<td>MBA 5300</td>
<td>Current Business Topics (Ethics)</td>
<td></td>
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<tr>
<td>MBA 5400</td>
<td>Business Practicum (Project Management)</td>
<td></td>
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<tr>
<td>MBA 5500</td>
<td>Interdisciplinary Inquiry in Business Administration (Descriptive Analytics)</td>
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**Option Requirements**

Select 12 hours from appropriate option: 12

**Geophysics**

- GEOL 5103: Introduction to Geophysical Exploration
- GEOL 5213: Seismic Interpretation
- GEOL 5543: Introduction to Exploration Seismology
- GEOL 5990: Advanced Studies in Geology
- GEOL 6103: Gravity and Magnetic Methods
- GEOL 6303: Electrical and Electromagnetic Methods

**Petroleum Geology**

- GEOL 5023: Petroleum Geology
- GEOL 5253: Petrology and Diagenesis of Clastic Rocks
- GEOL 5133: Structural Styles in Oil and Gas Exploration
- GEOL 5283: Subsurface Geologic Methods
- GEOL 5353: Advanced Well Log Analysis
- GEOL 5363: Carbonate Depositional Systems
- GEOL 5393: Stratigraphy of the Midcontinent
- GEOL 5603: Basin Evolution
- GEOL 6503: Rock Fractures
- GEOL 6133: Unconventional Petroleum Reservoirs
- GEOL 6283: Geology of Shales
- GEOL 6373: Advanced Carbonate Petrology and Geochemistry
- GEOL 6363: Carbonate Reservoir Characterization
- GEOL 6386: Sequence Stratigraphy of Shales

**Hydrogeology**

- GEOL 5453: Groundwater Modeling
- GEOL 5463: Physical Hydrogeology
- GEOL 5483: Petroleum Water Management
- GEOL 6553: Contaminant Hydrogeology
- CIVE 5033: GIS Applications for Water Resources
- CIVE 5833: Introduction to Environmental Modeling
- CIVE 5913: Groundwater Hydrology
- CIVE 6843: Stochastic Methods in Hydrology
- SOIL 5223: Soil Chemical Processes and Impact on Environmental Quality
- SOIL 5483: Soil Bioremediation and Sustainability
- SOIL 5583: Soil Physics Measurement Techniques

**Clusters**

Select any four courses - courses within a cluster can lead to a graduate certification. 12

- **Big Data (online and certification available through CS)**
  - STAT 5093: Statistical Computing
  - CS 5783: Machine Learning
  - CS 5433: Big Data Management
  - CS 5683: Big Data Analytics

- **Business Administration (online and certification through Spears)**
  - MGMT 5113: Individual and Organizational Behavior
  - ACCT 5183: MBA Financial Reporting
  - FIN 5013: Business Finance
  - ECON 5113: Managerial Economics

- **Marketing Analytics (online and certification through Spears)**
  - MKTG 5733: Introduction to Marketing Analytics
  - MKTG 5743: Advanced Marketing Analytics
  - MSIS 5633: Predictive Analytics Technologies
  - MSIS 5303: Prescriptive Analytics

- **Advanced Computing**
  - CS 5033: Parallel Algorithms and Programming
  - CS 5123: Cloud Computing and Distributed Systems
  - CS 5513: Numerical Computation
  - STAT 5053: Time Series Analysis
  - STAT 5063: Statistical Machine Learning with R
  - CS 5793: Artificial Intell II
  - ECEN 5733: Neural Networks

- **Energy Management (courses available online and in Tulsa)**
  - FIN 5003: Introduction to Energy Business
  - FIN 5363: Energy Finance
  - PETE 5363: Petroleum Economics and Investments
  - MSIS 5633: Predictive Analytics Technologies

- **Environmental Engineering and Management**
  - CIVE 5713: Soil Mechanics
  - CIVE 5813: Environmental Laboratory Analysis
  - CIVE 4123: The Legal & Regulatory Environment of Civil Engineering
  - SOIL 4893: Environmental Soil Chemistry

- **Reservoir Management Cluster**
  - PETE 4303: Petroleum Rocks and Fluids
### PETE 4313 Drilling and Well Completions

### PETE 4333 Production Engineering

### PETE 4343 Reservoir Engineering and Well Testing

### PETE 5303 Petroleum Geomechanics

### PETE 5513 Directional Drilling

#### GEO-Int

### GEOG 5263 Geospatial Applications for Unmanned Aerial Systems

### GEOG 5303 Geographic Analysis I

### GEOG 5343 Advanced Geographic Information Systems: Resource Management Applications

### GEOL 5990 Advanced Studies in Geology

<table>
<thead>
<tr>
<th>Hours Subtotal</th>
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<table>
<thead>
<tr>
<th>Thesis</th>
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<tbody>
<tr>
<td>Three hours of Capstone Project Course (Professional Internship with a research report)</td>
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<tr>
<th>Hours Subtotal</th>
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<table>
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<tr>
<th>Total Hours</th>
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<tr>
<td>36</td>
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Most of the courses have prerequisites that can be waived with instructor's consent.

### Retention Requirements

- The student will complete a Progress Report every semester in consultation with the mentor clearly highlighting previous achievements and immediate expectations, indicating how well the student is progressing towards degree completion.
- Enrollment in minimum of one course per semester or an approved leave of absence.

### Graduation Requirements

- Completion of a capstone project to the satisfaction of the student's committee along with a written report
- No pending Incomplete (“I”) grades in the coursework contributing towards the professional master's degree. A student can take more than 36 credit hours of course work. However, only 36 credit hours of coursework will be counted towards degree completion.

### Graduate College Master's Program Requirements

Learn more about Graduate College 2023-2024 Master's Degree Program Requirements [here](http://catalog.okstate.edu/graduate-college/). Check the General Graduate College academic regulations for minimal GPA, language proficiency and other general requirements.