# 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>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Core Courses</strong></td>
<td>Select 9 hours from the following:</td>
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<tr>
<td>GEOL 5213</td>
<td>Seismic Interpretation</td>
<td>9</td>
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<tr>
<td>GEOL 5383</td>
<td>Sequence Stratigraphy</td>
<td></td>
</tr>
<tr>
<td>GEOL 5223</td>
<td>Advanced Methods in Structural Geology</td>
<td></td>
</tr>
<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:

**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: Petroleum 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

**HSU Subtotal**: 12

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

**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)**
- BAN 5733: Descriptive Business Analytics
- BAN 5743: Predictive Business Analytics
- MSIS 5633: Predictive Analytics Technologies
- MSIS 5643: Advanced Database Management

**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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<tbody>
<tr>
<td>Thesis</td>
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</table>

Three hours of Capstone Project Course (Professional Internship with a research report)

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<tr>
<th>Hours Subtotal</th>
<th>3</th>
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<tbody>
<tr>
<td>Total Hours</td>
<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 (http://catalog.okstate.edu/graduate-college/). Check the General Graduate College academic regulations for minimal GPA, language proficiency and other general requirements.