

Checklist for _____ by _____ Date: _____

MASTER OF SCIENCE IN GEOLOGY AND GEOLOGICAL ENGINEERING GEOLOGY SPECIALIZATION

General Requirements:

The student must complete the following minimum course credits:

	<u>Thesis Degree</u>	<u>Non-Thesis Option</u>
____ Coursework (500 or above)**	24-26 credits	34 credits
____ GEOL/GEOE 798 MS Thesis (minimum)***	<u>6-8 credits</u>	<u>2 credits</u>
	32 credits	36 credits

**Up to 6 credits may be 400-level courses. These must be out-of-department courses, or GEOE 425, or GEOL 472.

***With the consent of the student's graduate committee, a student may count up to 8 credit hours of thesis research (GEOL/GEOE 798) toward the degree credit requirements. This allows the student to exchange a 700-level (or 600-level or above) course for 3 extra hours of thesis work. However, the student may register for additional research credits for continuing registration purposes.

M.S. Course Work Requirements for Geology Specialization

Core Courses:

- ____ GEOL 604 Advanced Field Geology
- ____ GEOL 633 Sedimentation (or demonstration of proficiency)

____ One course from:

- GEOL 517 Geospatial Databases
- GEOL 519 Advanced Geospatial Analysis
- GEOE 766 Digital Modeling of Ground-Water Flow Systems
- MEM 533 Computer Applications in Geoscience Modeling

____ One course from:

- GEOL 621 Advanced Structural Geology
- GEOL 622 Geotectonics

____ One course from:

- GEOE 552 Geochemical Exploration
- GEOE 626 Environmental Geophysics
- GEOE 641 Geochemistry
- GEOE 664 Advanced Ground Water

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MASTER OF SCIENCE IN GEOLOGY AND GEOLOGICAL ENGINEERING GEOLOGICAL ENGINEERING SPECIALIZATION

General Requirements:

The student must complete the following minimum course credits:

	<u>Thesis Degree</u>	<u>Non-Thesis Option</u>
____ Coursework (500 or above)**	24-26 credits	34 credits
____ GEOL/GEOE 798 MS Thesis (minimum)***	<u>6-8 credits</u>	<u>2 credits</u>
	32 credits	36 credits

**Up to 6 credits may be 400-level courses. These must be out-of-department courses, or GEOE 425, or GEOL 472.

***With the consent of the student's graduate committee, a student may count up to 8 credit hours of thesis research (GEOL/GEOE 798) toward the degree credit requirements. This allows the student to exchange a 700-level (or 600-level or above) course for 3 extra hours of thesis work.

M.S. Course Work Requirements for Geological Engineering Specialization

Core Courses:

- ____ GEOL 633 Sedimentation (or demonstration of proficiency)
- ____ GEOE 766 Digital Modeling of Ground Water

Three focus areas are offered to M.S. candidates in the Geological Engineering Specialization. The recommended courses for each area are listed below. The candidate's committee is responsible for assisting the student in developing a program of study that prepares the student for his/her intended field.

Ground Water and Environmental Focus:

Recommended:

- ____ GEOE 641 Geochemistry
- ____ GEOE 664 Advanced Ground Water
- ____ CEE 634 Surface Water Hydrology¹
- ____ GEOE 682 Fluvial Processes

Geomechanics Focus:

Recommended:

- ____ GEOE 668 Engineering Geology of Surficial Deposits
- ____ CEE 643 Advanced Soil Mechanics I
- ____ CEE 646 Stability of Soil and Rock Slopes
- ____ CEE 647 Earth Structures
- ____ MEM 533 Computer Applications in Geoscience Modeling

Energy and Mineral Resources Focus:

Recommended:

- ____ GEOE 531 Principles of Well Logging
- ____ GEOE 552 Geochemical Exploration
- ____ GEOE 525 Engineering Geophysics II
- ____ GEOE 641 Geochemistry
- ____ GEOE 661 Petroleum Geology
- ____ GEOL 652 Problems in Ore Deposits

¹Suitable hydrology courses may be substituted with the approval of the student's graduate committee.

Checklist for _____ by _____ Date: _____

MASTER OF SCIENCE IN PALEONTOLOGY

The courses listed above are in the course section in the catalog. Thirty-two (32) semester credits are required for the M.S. degree.

_____ Coursework (500 or above)**	<u>Thesis Degree</u> 24-26 credits
_____ GEOL/GEOE 798 MS Thesis (minimum)***	<u>6-8 credits</u>
	32 credits

The following courses must be taken as part of the graduate program of study (20 cr):

- _____ GEOL 631 Rocky Mountain Stratigraphy I or GEOL 632 Rocky Mountain Stratigraphy II
- _____ GEOL 633 Sedimentation
- _____ PALE 671 Advanced Field Paleontology
- _____ PALE 673 Comparative Osteology
- _____ PALE 676 Vertebrate Paleontology
- _____ PALE 678 Vertebrate Biostratigraphy
- _____ PALE 770 Seminar in Vertebrate Paleontology (2 cr)

The following courses must be taken in support of the research (6 cr).

- _____ PALE 798 Master's Thesis (a minimum of six (6) credits)

The following courses are recommended:

- GEOL 517 Geospatial Databases
- GEOL 519 Advanced Geospatial Analysis
- GEOL 643 Introduction to Microbeam Instruments
- PALE 672 Micropaleontology
- PALE 684 Paleoenvironments
- GEOL 604 Advanced Field Geology or other appropriate courses in geology.

_____ **The candidate will pass a reading examination in one of the following languages: French, German, Spanish, or Russian.**

Checklist for _____ by _____ Date: _____

PHD IN GEOLOGY AND GEOLOGICAL ENGINEERING GEOLOGY SPECIALIZATION

Curriculum

____ A minimum of 80 credit hours is required beyond the B.S. degree.

____ At least fifty of these credits must be for course work. Up to 30 course credits from the M.S. degree (24 course and 6 research) can be applied toward this requirement if the student's committee agrees.

____ It is recommended that six (6) to twelve (12) hours of course work be taken outside the department.

Ph.D. Course Work Requirements for Geology Specialization

Core Courses:

____ GEOL 604 Advanced Field Geology

____ GEOL 633 Sedimentation

____ GEOL 808 Fundamental Problems in GEOL/GEOE

____ One course from:

GEOL 517 Geospatial Databases

GEOL 519 Advanced Geospatial Analysis

GEOE 766 Digital Modeling of Ground Water Flow Systems

MEM 533 Computer Applications in Geoscience Modeling

____ One course from:

GEOL 621 Advanced Structural Geology

GEOL 622 Geotectonics

____ One course from:

GEOE 626 Environmental Geophysics

GEOE 641 Geochemistry

GEOE 664 Advanced Ground Water

GEOL 652 Problems in Ore Deposits

Optional courses: Minimum of 10 credit hours in courses related to student's research/specialty.

Checklist for _____ by _____ Date: _____

PHD IN GEOLOGY AND GEOLOGICAL ENGINEERING GEOLOGICAL ENGINEERING SPECIALIZATION

Curriculum

___ A minimum of 80 credit hours is required beyond the B.S. degree.

___ At least fifty of these credits must be for course work. Up to 30 course credits from the M.S. degree can be applied toward this requirement if the student's committee agrees.

___ It is recommended that six (6) to twelve (12) hours of course work be taken outside the department.

The student's committee is responsible for assisting the student in developing a program of study that prepares the student for advanced work in his/her chosen specialty field.

Required of all GEOE students:

___ GEOL 633 Sedimentation

___ GEOE 766 Digital Modeling of Ground Water

___ GEOL 808 Fundamental Problems in GEOL/GEOE

Ground Water and Environmental Focus:

Recommended:

___ GEOE 641 Geochemistry

___ GEOE 664 Advanced Ground Water

___ GEOE 682 Fluvial Processes

___ CEE 634 Surface Water Hydrology¹

___ CEE 521 Environmental Systems Analysis²

Geomechanics Focus:

Recommended:

___ GEOE 668 Engineering Geology of Surficial Deposits

___ CEE 647 Earth Structures

___ CEE 646 Stability of Soil and Rock Slopes

___ CEE 643 Advanced Soil Mechanics I

___ MINE 550 Rock Slope Engineering

___ MINE 512 Rock Mechanics III

Energy and Mineral Resources Option:

Recommended:

___ GEOE 525 Engineering Geophysics II

___ GEOE 531 Principles of Well Logging

___ GEOE 552 Geochemical Exploration

___ GEOE 661 Petroleum Geology

___ GEOL 652 Problems in Ore Deposits

___ GEOE 641 Geochemistry

¹Suitable hydrology courses may be substituted with the approval of the student's graduate committee.

²Suitable environmental engineering courses may be substituted with the approval of the student's graduate committee.