

Department of Geology and Geological Engineering  
South Dakota School of Mines

Graduate Student Handbook (Draft): 2017-2018

**Table of Contents**

GGE Faculty and Staff.....	2
1 General Information.....	3
1.1 Acronyms .....	3
1.2 Purpose.....	3
1.3 Keys.....	4
1.4 Offices .....	4
1.5 Mail .....	4
1.6 Photocopying.....	4
1.7 Student Organizations .....	4
1.7.1 GGE Graduate Representatives .....	4
1.7.2 GGE Graduate Brownbag Seminar.....	4
1.7.3 GGE Graduate Student Town Hall Meeting.....	5
1.7.4 GGE Seminars .....	5
2 Graduate Program Policies .....	5
2.1 Catalog, Policies, and Resources.....	5
2.2 Advisor, Committee, and Plan of Study.....	5
2.3 MS Committee Composition.....	5
2.4 PhD Committee Composition .....	5
2.5 Research Credits.....	6
2.6 Quality of Theses and Dissertations.....	6
2.7 Defense Venue .....	6
2.8 Conflict Resolution and Assistance .....	6
2.9 GTA Awards and Responsibilities.....	6
2.10 GRA and Fellowship Awards .....	7
3 GGE Graduate Program Expectations, Outcomes, and Assessment Plan .....	8
GGE Graduate Program Outcomes .....	8
GGE Graduate Student Outcomes-Rubric.....	8
4 Graduate Course Planning .....	9
5 PhD Flowchart.....	10
6 GGE Graduate Student Funding Travel Application.....	11

**GGE Faculty and Staff****Department Administration**

Dr. Laurie Anderson	<i>Department Head and Museum Director</i>	MI303 PRL112
Cleo Heenan	<i>Senior Secretary</i>	MI314

**Geology Faculty**

(Professors)

Dr. Laurie Anderson	<i>Paleobiology, Paleoecology, Taphonomy</i>	MI303 PRL112
Dr. Edward Duke	<i>Manager of Analytical Services, Petrology, Geochemistry, Remote Sensing</i>	MI234
Dr. Timothy Masterlark	<i>Graduate Program Director, Geophysics</i>	MI308
Dr. Maribeth Price	<i>Dean of Graduate Education</i>	C2201
Dr. Nuri Uzunlar	<i>Director BHNSFS</i>	MI306

(Associate Professor)

Dr. Darren Pagnac	<i>Mammalian Paleontology, Paleoecology</i>	PRL123
-------------------	---	--------

(Assistant Professors)

Dr. Zeynep Oner Baran	<i>Basin analysis, Structural geology and tectonics, Extensional deformation</i>	MI312
Dr. Gokce Ustunisik	<i>Igneous and Experimental Petrology, Planetary Petrology</i>	MI308

**Geological Engineering Faculty**

(Professor)

Dr. Larry Stetler	<i>Geological Engineering, Sedimentology, Surface and Groundwater, Environmental Geology, Petroleum</i>	MI310
-------------------	---	-------

(Associate Professor)

Dr. Kurt Katzenstein	<i>Geomechanics, Geological Engineering, InSAR</i>	MI316
Dr. Foster Sawyer	<i>Sedimentology, Groundwater, Petroleum Geology</i>	MI318

(Assistant Professors)

Dr. Liangping Li	<i>Groundwater, Geostatistics, Data Assimilation, Reservoir Modeling</i>	MI314
------------------	--	-------

**Support Faculty and Staff**

Dr. Christopher Pellowski	<i>Coordinator and Instructor, GGE/BHNSFS</i>	MI300
Mr. Curtis Price	<i>Instructor, GIS</i>	MI315
Dr. William Roggenthen	<i>Research Scientist IV, Geological Engineering</i>	MI304
Ms. Sally Shelton	<i>Collections Manager, Museum of Geology</i>	PRL114
Mr. Daniel Soeder	<i>ERI Director</i>	MI
Dr. Sui Tung	<i>Research Scientist II, Geophysics</i>	MI327C
Dr. Caihong Zhang	<i>Visiting Research Scientist, Geophysics</i>	MI327A

**Emeritus Faculty**

Dr. Arden Davis	<i>Geological Engineering: Groundwater, Environmental Contamination, Digital Modeling</i>
Dr. James E. Fox	<i>Geology: Curator of Invertebrate Paleontology, Sedimentology, Petroleum Geology, Invertebrate Paleontology</i>
Dr. Alvis Lisenbee	<i>Geology: Structural Geology</i>
Dr. James E. Martin	<i>Geology: Emeritus Curator Museum of Geology, Vertebrate Paleontology, Biostratigraphy</i>
Dr. Colin J. Paterson	<i>Geology: Economic Geology, Mineral Resources, Petrology</i>
Dr. Perry H. Rahn	<i>Geological Engineering: Hydrogeology, Environmental Geology</i>

**Adjunct Faculty**

Dr. Rachel Benton	<i>Park Paleontologist, Badlands National Park, Interior, SD</i>
Mr. Derric Iles	<i>State Geologist, South Dakota Geological Survey, Vermillion, SD</i>
Dr. Joshua Valder	<i>Hydrologist, SD Water Science Center, USGS, Rapid City, SD</i>
Dr. Haiyan Zhou	<i>Adjunct Assistant Professor, GGE</i>

**1 General Information****1.1 Acronyms**

ACA	Affordable Care Act
FERPA	Family Educational Rights and Privacy Act
GDR	Graduate Division Representative
GGE	Department of Geology and Geological Engineering
GPA	Grade Point Average
GRA	Graduate Research Assistant
GTA	Graduate Teaching Assistant
GPD	Graduate Program Director
MI	Mineral Industries Building
MP	Major Professor
PDF	Portable Document Format
POS	Plan of Study
PRL	Paleontology Research Laboratory
SDBOR	South Dakota Board of Regents

**1.2 Purpose**

The Office of Graduate Education provides a broad framework of policies. The purpose of this document is to provide additional GGE Graduate Program-wide policies and description of overarching GGE expectations and outcomes (Section 3). Individual Major Professor (MP) expectations (beyond those given by Graduate Education and GGE Program-wide policies) for graduate students vary considerably among the GGE faculty. Each graduate student must consult with his or her MP to establish specific expectations. Such expectations include, but are not limited to, frequency of meetings; timing, content, and submission of draft thesis or dissertation components; preparation, submission, and expected number of manuscripts; and reading assignments and library usage. While graduate students must identify an MP at the time of admission, students are not bound to a specific MP. A change in MP requires a mutual agreement among the student, the potential MP, and either the existing MP or Dean of Graduate

Education. Students who wish to explore a change in MP should consult the Graduate Program Director (GPD) to discuss options, implications, and potential resolution strategies. Graduate Education and GGE policies, forms, and information are available from the GGE website.

### **1.3 Keys**

Outside door keys, laboratory keys, and office keys for the MI building are available, with approval from the Department Head, Laurie Anderson. The Department secretary prepares the request form. For access to the PRL and offices and labs within the PRL, submit a request to Sally Shelton. Keys are dispensed by Facilities Services and must be returned prior to graduation.

### **1.4 Offices**

Teaching and research assistants are assigned offices according to the following priority basis:

1. GRA, GTA, and students having a Fellowship.
2. Students working with proprietary data or who require a physical South Dakota School of Mines network connection.
3. Unsupported PhD students.
4. Unsupported MS students.

### **1.5 Mail**

Graduate students will be assigned a mail slot in room MI 311.

### **1.6 Photocopying**

Student use of the department copier code is limited to GTA responsibilities. The code is available from the department secretary. The copier has scanning capabilities, which can deliver scanned documents to your email as a PDF. Scan-to-email instructions are posted above the copy machine. Please abide by applicable copyright laws when scanning and photocopying.

### **1.7 Student Organizations**

Graduate students are expected to participate in student organizations and professional societies. GGE hosts several organizations and clubs spanning an informal book club, an honor society, and several discipline-specific professional organization chapters. Students are expected to explore and participate in professional societies, as appropriate. The MP is expected to provide guidance on the merits of these opportunities.

#### **1.7.1 GGE Graduate Representatives**

GGE graduate students will elect one MS and one PhD student to serve as graduate student representatives. The election process will be organized annually by the incumbent representatives or by the GPD if necessary. Both graduate representatives will be invited to attend GGE Graduate Program meetings to ensure that graduate student perspectives are represented, as appropriate. Graduate representatives will organize an annual GGE Graduate Student Town Hall Meeting.

#### **1.7.2 GGE Graduate Brownbag Seminar**

Graduate students are expected to participate in the GGE Graduate Brownbag seminar. This seminar is a weekly event that will be organized by the GGE graduate representatives and the GPD.

### **1.7.3 GGE Graduate Student Town Hall Meeting**

Graduate representatives will organize and set the agenda for an annual GGE Graduate Student Town Hall Meeting. All graduate students are expected to attend. The GPD will also attend to provide faculty perspective.

### **1.7.4 GGE Seminars**

GGE hosts weekly seminars that are scheduled for Fridays, 4-5PM. Graduate students are expected to attend. The schedule is posted on the GGE webpage.

## **2 Graduate Program Policies**

It is each student's responsibility to understand the policies of both the Office of Graduate Education and GGE, which are periodically updated. Details of these policies are available from the Graduate Education section of the South Dakota School of Mines online catalog and GGE policies are given in this document. Questions about graduate policies may be directed to the MP, the department head, the Graduate Education office staff, or the GPD.

### **2.1 Catalog, Policies, and Resources**

All School of Mines, Graduate Education, and Departmental policies and information, including this document, are available online ([www.sdsmt.edu/Academics/Departments/Geology-and-Geological-Engineering/Graduate-Education/Graduate-Checklists/](http://www.sdsmt.edu/Academics/Departments/Geology-and-Geological-Engineering/Graduate-Education/Graduate-Checklists/)). State-wide policies established by the South Dakota Board of Regents (SDBOR) are also available online ([www.sdbor.edu](http://www.sdbor.edu)). Students may efficiently navigate to the desired information via keyword search options near the top-right corner of these websites.

### **2.2 Advisor, Committee, and Plan of Study**

As part of the admission process into the GGE graduate programs, the graduate will identify a faculty advisor, who agrees to serve as the MP. This advisor will assist in course selection and defining the focus and nature of your program. During the first semester of a graduate student's program, the student and MP will identify a full advisory committee. The student and this committee will define a Program of Study (POS), which must be endorsed by the committee and the Department Head and submitted to the Office of Graduate Education by the second semester of the student's graduate program. Emeritus and Adjunct Professors may not serve the role of MP.

### **2.3 MS Committee Composition**

An MS committee includes at least three full-time South Dakota School of Mines faculty members. This committee includes the MP, the Graduate Division Representative (GRD) from outside the department, and one additional faculty member having relevant expertise in the student's research topic. If an Emeritus or Adjunct Professor serves on an MS committee, the committees shall consist of one additional full-time GGE faculty member. The student and MP may include additional committee members, as appropriate, but the majority must be from the South Dakota School of Mines.

### **2.4 PhD Committee Composition**

A PhD committee includes at least five members. At least three of these must be full-time South Dakota School of Mines faculty members. One must be the MP and one must be the

GRD from outside the department. If an Emeritus or Adjunct Professor serves on an MS committee, the committees shall consist of one additional full-time GGE faculty member.

The student and MP may include additional committee members, as appropriate, but the majority must be from the South Dakota School of Mines.

## **2.5 Research Credits**

Graduate students registered for thesis or dissertation research credits are required to perform the research activities outlined by the MP and must complete one of the following during each semester the student is enrolled in research credits:

- Present research at a professional conference.
- Present research at a GGE Graduate Student Brownbag Seminar
- Complete an MS oral exam or PhD Qualifying and Comprehensive exam
- Submit a proposal to an external funding agency
- Submit a manuscript or publish in a scholarly journal.
- Defend a thesis or dissertation.

## **2.6 Quality of Theses and Dissertations**

Student theses and dissertations are expected to be of high quality and suitable for publication in peer-reviewed journals. The specific number of publications expected from a given thesis or dissertation will depend on the specific research or journal selections and MP expectations.

## **2.7 Defense Venue**

All graduate defense activities will be held on the South Dakota School of Mines campus. The student will schedule the defense in a specific room that has Audio/Visual equipment, as necessary, and either a chalk board or white board.

## **2.8 Conflict Resolution and Assistance**

Students are encouraged to resolve conflicts in consultation with the MP, as appropriate. However, students may freely consult the GPD or Department Head. While some conflicts may be readily resolved at the department level, a variety of campus resources are available to assist students.

## **2.9 GTA Awards and Responsibilities**

It is department policy to fund as many Graduate Teaching Assistantships (GTAs) as possible for a student's initial year. During the first year, each student will consult with his or her MP to devise a strategy for obtaining Graduate Research Assistantship (GRA) support for the second and subsequent years.

Most GTAs will lead a laboratory section for a course. This will require working with the faculty member who is the instructor of record for the course to ensure proper dissemination of content and consistent evaluation methods. General guidelines and expectations for GTAs include, but are not limited to:

1. A half-time GTA corresponds to 10 hours of work per week, full-time GTA is equal to 20 hours per week. As part of the load, the faculty in charge of the course may ask you to assist with logistics in the lecture class.

2. GTAs must maintain three hours of regularly-scheduled office hours each week. This schedule must be posted outside the respective GTA's office and supplied to the department secretary each semester.
3. GTAs are expected to embody professionalism during the execution of GTA duties.
4. Labs may include field trips. GTAs may be required to execute the logistical arrangements, as well as serve as drivers during a field trip. Logistical arrangements should be made as soon as possible and may include, but are not limited to:
  - a. Arrange for vehicles through the department secretary as early as possible. If the trip is cancelled, notify the secretary as soon as possible.
  - b. Arrange for drivers (other GTA's) if necessary.
  - c. Provide the department secretary a list of the students who will attend the field trip. Students are not allowed to drive personal vehicles for class field trips.
5. Grade coursework promptly. Grading should be constructive and consistent within a section, as well as among lab sections. GTAs must abide by FERPA regulations regarding the protection of student privacy. A summary of FERPA guidelines and resources is posted on the GGE website.
6. Keep the laboratories and classrooms clean and orderly. Do not revise storage strategies for laboratory materials, unless directed by the faculty.

## **2.10 GRA and Fellowship Awards**

During the first year, each student will consult with his or her MP to devise a strategy for obtaining Graduate Research Assistantship (GRA) or fellowship support for the second and subsequent years of the student's graduate program. It is the responsibility of both the MP and the graduate student to secure this support. Support includes: stipend, tuition remission, fees, travel for professional conferences and workshops, publication fees, and any other research costs. Students who successfully secure external grants, fellowships, scholarships, or other funding for support costs will not be exempt from department funding, as appropriate. This policy is an effort to reward self-motivated students, rather than deter enterprising students from seeking external support. GRAs must log ACA hours on a monthly basis. Consult the MP for details.

### 3 GGE Graduate Program Expectations, Outcomes, and Assessment Plan

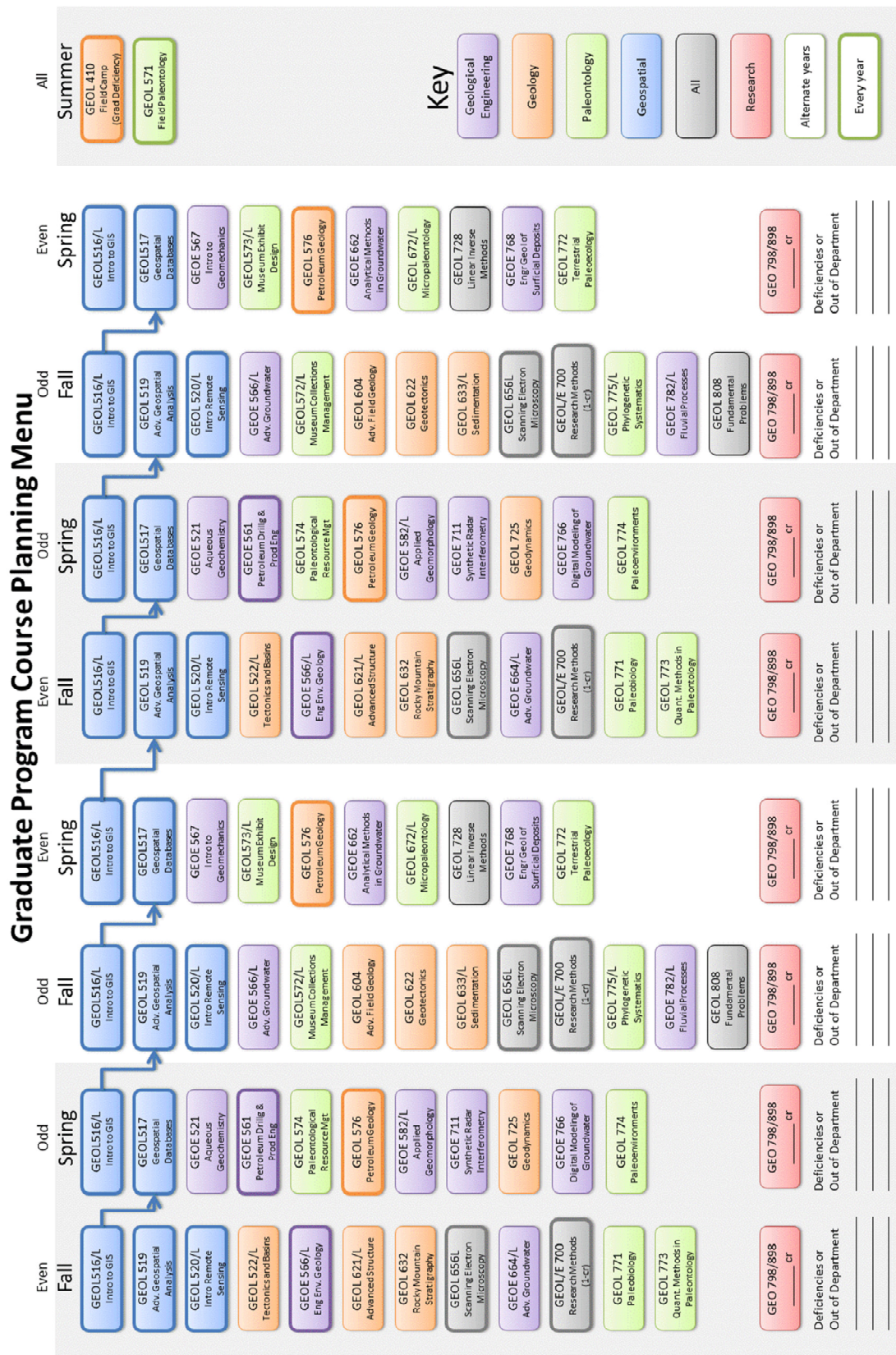
GGE initiated a program of continual assessment that measures the quality of graduate research and education. The purpose of this assessment is to collect data to be used by the faculty to assess both the quality of the graduate programs, as well as a student's achievement of the outcomes. GGE Graduate Program-wide expectations are designed to explicitly target the following program outcomes:

<b>GGE Graduate Program Outcomes</b>	
<b>A</b>	Students will have technical expertise.
<b>B</b>	Students will be effective communicators.
<b>C</b>	Students will engage in meaningful professional service.
<b>D</b>	Students will impact the profession.

The rubric specifies expectations that demonstrate achievement of the program outcomes. The successful GGE graduate student is expected to achieve items I-V listed in the rubric:

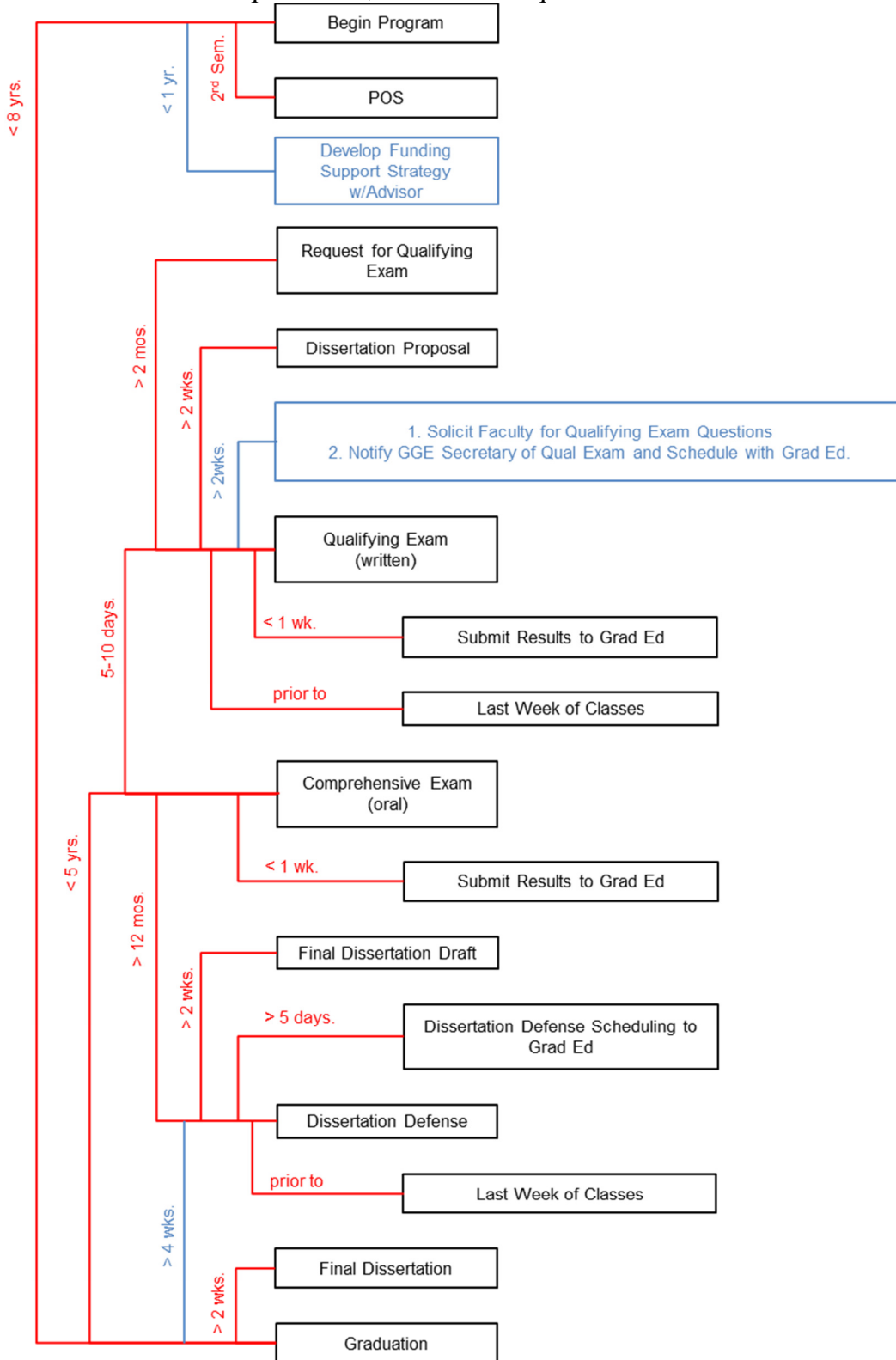
<b>GGE Graduate Student Outcomes-Rubric</b>					
The following rubric will be applied at (1) The proposal defense and (2) The time of degree confirmation for all graduate students. The ultimate goal is for all students to achieve a score of 5 (Achieved outcome) in all categories at a degree confirmation assessment.					
<b>I. Professional Conference (Outcomes A, B, D)</b>					
	<b>5</b> (Achieved outcome)	<b>4</b>	<b>3</b>	<b>2</b>	<b>1</b> (did not achieve outcome)
PHD	Student delivered an invited oral presentation at a national or international conference	Student delivered an oral presentation at a national or international conference	Student presented a poster as a national or international conference	Student presented at a state or regional conference	Student did not present results at a professional venue.
MS	Student delivered an oral presentation at a national or international conference	Student presented a poster as a national or international conference	Student presented at a state or regional conference	Student presented at a department or university conference	Student did not present results at a professional venue.
<b>II. Publication (Outcomes A, B, D)</b>					
	<b>5</b> (Achieved outcome)	<b>4</b>	<b>3</b>	<b>2</b>	<b>1</b> (did not achieve outcome)
PhD	Student is first author on an article published or accepted for publication in a high-impact journal (IF>1)	Student is co-author on an article published or accepted for publication in a high-impact journal (IF>1)	Student is an author or co-author on a manuscript submitted to a high-impact journal (IF>1)	Student is an author or co-author on gray literature article	Student did not author/co-author a publication
MS	Student is author or co-author on an article published or accepted for publication in a high-impact journal (IF>1)	Student is an author or co-author on a manuscript submitted to a high-impact journal (IF>1)	Student is an author or co-author on an article published in the gray literature	Student is author or co-author on non-reviewed report (published/submitted)	Student did not author/co-author a submitted manuscript
<b>III. Seek External (outside of South Dakota School of Mines) Funding/Support (Outcomes A, B, D)</b>					
	<b>5</b> (Achieved outcome)	<b>4</b>	<b>3</b>	<b>2</b>	<b>1</b> (did not achieve outcome)
	Student was awarded a fellowship with full support (at least stipend and full tuition for at least one full calendar year) from an external agency.	Student submitted a proposal for a fellowship with full support (at least stipend and full tuition for at least one full calendar year) from an external agency.	Student was awarded a scholarship application to an external agency.	Student submitted a scholarship application to an external agency.	Student did not submit any scholarship or fellowship applications to an external agency.
<b>IV. Participation in professional organizations (Outcomes B, C, D)</b>					
	<b>5</b> (Achieved outcome)	<b>4</b>	<b>3</b>	<b>2</b>	<b>1</b> (did not achieve outcome)
	Student is a member of a national or international professional society	Student is a member of a regional or state professional society	Student is an officer for at least one GGE or University club	Student is a member of at least one GGE or University club	Student is not a member of any professional society or club
<b>V. Service (Outcomes A, B, C, D)</b>					
	<b>5</b> (Achieved outcome)	<b>4</b>	<b>3</b>	<b>2</b>	<b>1</b> (did not achieve outcome)
	Student led national or international level professional service activities	Student participated in national or international level professional service activities	Student led GGE or external professional service activities	Student participated in GGE or external professional service activities	Student did not participate in any service activities

## 4 Graduate Course Planning



## 5 PhD Flowchart

Note: Red=Grad Ed requirements, Blue=GGE requirements



## 6 GGE Graduate Student Funding Travel Application

MPs are expected to provide travel support for graduate advisees (Section 2.10). Graduate students may apply to the department to receive funding to help cover expenses incurred while attending professional conferences and workshops. However, all such funding requests must be backed by equivalent external pending resources from the MP or graduate student. Amount of funding received will be based on total cost of the trip and merit. Applications must be received no later than the end of the second full week of classes of both the Spring and Fall semesters. To apply, submit an application with the following information (limit your application to one page, attached documentation does not count towards this page limit):

- Graduate Student Name
- MP
- Name of conference or workshop
- Reason for attending the conference or workshop
- Itemized cost of the proposed trip (Attach documentation justifying these costs, as appropriate. If these documents are not attached, this request will not be considered.)
- Requested support for the travel
- Support secured for the travel, provided by:
  - Graduate student
  - MP
- Pending support for the travel, provided by:
  - Graduate student
  - MP

Note that the sum of the secured and pending support must be equivalent to the request. Please note that if you are funded, you will be reimbursed following the trip, and that reimbursement is dependent upon your submission of the appropriate state travel forms and documentation.