Ogden College of Science and Engineering
Western Kentucky University
Office of the Dean
745-6371

REPORT TO THE GRADUATE COUNCIL COMMITTEE

DATE: March 27, 2015

FROM: Ogden College of Science and Engineering

Ogden College of Science and Engineering Committee Members: Dr. Ferhan Atici, Dr. Rajalingam Dakshinamurthy, Dr. Fred DeGraves, Dr. Sanju Gupta, Dr. David Keeling, Dr. John Khouryieh, Dr. Sharon Mutter, Dr. Shane Palmquist, Dr. Michael Smith, Dr. Zhonghang Xia

Chair: Dr. Cathleen Webb

The Ogden College of Science and Engineering submits the following items for consideration at the October meeting:

Consent	**Proposal to Delete a Course** GEOG 473G – Cave and Karst Environment Contact Person: Leslie North, leslie.north@wku.edu, 5-5982
Consent	**Proposal to Delete a Course** GEOG 488G – Rural Planning Contact Person: Leslie North, leslie.north@wku.edu, 5-5982
Action	**Proposal to Revise a Course** GEOG 419G – GIS Programming Contact Person: Jun Yan, jun.yan@wku.edu, 5-4555
Action	**Proposal to Revise a Course** GEOS 500 – Geoscience Research and Literacy Contact Person: David Keeling, david.keeling@wku.edu, 5-4555
Action	**Proposal to Revise a Course** GEOS 555 – Global Environmental Change Contact Person: Leslie North, leslie.north@wku.edu, 5-5982
Action	**Proposal to Revise a Course** GEOS 571 – Quality of Life: Environmental Problems and Ecological Solutions Contact Person: Leslie North, leslie.north@wku.edu, 5-5982
Action	**Proposal to Revise a Program** Geoscience 072 – Master of Science in Geoscience Contact Person: David Keeling, david.keeling@wku.edu, 5-4555

MINUTES – OCSE Graduate Curriculum Committee **November 21, 2014**

Members Present: Dr. David Keeling, Dr. Sanju Gupta, Dr. Sharon Mutter, Dr. Zhonghang Xia, Dr. Shane Palmquist, Dr. Fred DeGraves, Dr. Ferhan Atici

Dr. Cathleen Webb, Chair

This meeting was held via email

OLD BUSINESS
Keeling/Mutter moved for approval of minutes from October 2014. Motion approved.

NEW BUSINESS

Consent Agenda
Keeling/Mutter moved for approval to bundle and approve the consent items. Motion approved.

Action Agenda
Keeling/Mutter moved for approval of Math 049. Motion approved.

MINUTES – OCSE Graduate Curriculum Committee **February 27, 2015**

Members Present: Dr. David Keeling, Dr. Sanju Gupta, Dr. Sharon Mutter, Dr. Zhonghang Xia, Dr. Shane Palmquist, Dr. Fred DeGraves, Dr. Ferhan Atici, Raja Dakshinamurthy, Michael Smith, John Khouryieh

Dr. Cathleen Webb, Chair

This meeting was held via email

OLD BUSINESS

No old business

NEW BUSINESS

Consent and Action Agenda
Keeling/Mutter moved for approval to bundle and approve the agenda. Motion approved.

Course - Suspend/Delete/Reactivate
(Consent)

Date: 2/23/2015
Ogden College of Science and Engineering, Department of Geography and Geology
Contact Person: Leslie North, leslie.north@wku.edu, 5-5982

1. **Identification of course or program:**
   1.1 Current course prefix (subject area) and number: GEOG 473G
   1.2 Course title: Cave and Karst Environment

2. **Action (check one):** ____ suspend __X___ delete _____ reactivate

3. **Rationale:** Course no longer needed in the graduate program as topics are addressed in other courses.

4. **Effect on programs or other departments:** None known.

5. **Term of implementation:** 201530

5. **Dates of committee approvals:**

Department of Geography and Geology	2/27/2015
Ogden College Graduate Curriculum Committee	
Graduate Council	
University Senate	

**Proposals to suspend, delete or reactivate a course require a Course Inventory Form be submitted by the College Dean's office to the Office of the Registrar.*

Course - Suspend/Delete/Reactivate
(Consent)

Date: 2/23/2015
Ogden College of Science and Engineering, Department of Geography and Geology
Contact Person: Leslie North, leslie.north@wku.edu, 5-5982

1. **Identification of course or program:**
   1.1 Current course prefix (subject area) and number: GEOG 488G
   1.2 Course title: Rural Planning

2. **Action (check one):** ____ suspend __X___ delete _____ reactivate

3. **Rationale:** Course no longer needed in the graduate program as topics are addressed in other courses.

4. **Effect on programs or other departments:** None known.

5. **Term of implementation:** 201530

5. **Dates of committee approvals:**

Department of Geography and Geology	2/27/2015
Ogden College Graduate Curriculum Committee	
Graduate Council	
University Senate	

**Proposals to suspend, delete or reactivate a course require a Course Inventory Form be submitted by the College Dean's office to the Office of the Registrar.*

Revise a Course
(Action)

Date: 2/23/2015
Ogden College of Science and Engineering, Department: of Geography and Geology
Contact Person: Jun Yan, jun.yan@wku.edu, 5-4555

1. **Identification of course**
   - 1.1 Course prefix (subject area) and number: GEOG 419G
   - 1.2 Course title: GIS PROGRAMMING

2. **Proposed change(s):**
   - 2.1 course number: GEOS 576
   - 2.2 course title:
   - 2.3 credit hours:
   - 2.4 grade type:
   - 2.5 prerequisites:
   - 2.6 corequisites:
   - 2.7 course description:
   - 2.8 other:

3. **Rationale for revision of course:** The Department is eliminating 4xxG courses and aligning all graduate courses in the 500-range in preparation for a proposed JUMP program.

4. **Term of implementation:** Spring 2016

5. **Dates of committee approvals:**

Department of Geography and Geology	2/27/2015
Ogden College Graduate Curriculum Committee	
Graduate Council	
University Senate	

**Course revision proposals require a Course Inventory Form be submitted by the College Dean's office to the Office of the Registrar.*

Revise a Course
(Action)

Date: 2/23/2015
Ogden College of Science and Engineering, Department: of Geography and Geology
Contact Person: David Keeling, david.keeling@wku.edu, 5-4555

1. **Identification of course**
   - 1.1 Course prefix (subject area) and number: GEOS 500
   - 1.2 Course title: Geoscience Research and Literacy

2. **Proposed change(s):**
   - 2.1 course number:
   - 2.2 course title:
   - 2.3 credit hours: 1-4, repeatable once for a maximum of 4 hours
   - 2.4 grade type: Pass/Fail
   - 2.5 prerequisites:
   - 2.6 corequisites:
   - 2.7 course description:
   - 2.8 other:

3. **Rationale for revision of course:** We have taught GEOS 500 in the Fall semester as a 4-hour course for all incoming graduate students. The goal of the course is to prepare students to conduct their thesis research and to begin writing their thesis proposal. Learning outcomes, assessment of the thesis proposal, and advisor engagement strategies have suggested that this course would achieve its objectives more effectively if split between a 3-hour Fall and a 1-hour Spring component. In the Fall, students would complete the thesis proposal introduction and begin their literature review, whilst learning about core theories and methods appropriate to the geosciences. In the Spring, students would complete the literature review and the research methodology, and then would defend the thesis proposal towards the end of the Spring semester. This proposed course restructuring would provide more graduate faculty workload flexibility and would fit more effectively in the proposed JUMP program. Switching to Pass/Fail grading is a more appropriate method of assessment, given the nature of the research thesis proposal.

4. **Term of implementation:** Fall 2015

5. **Dates of committee approvals:**

Department of Geography and Geology	2/27/2015
Ogden College Graduate Curriculum Committee	
Graduate Council	
University Senate	

**Course revision proposals require a Course Inventory Form be submitted by the College Dean's office to the Office of the Registrar.*

Revise a Course
(Action)

Date: 2/23/2015
Ogden College of Science and Engineering, Department: of Geography and Geology
Contact Person: Leslie North, leslie.north@wku.edu, 5-5982

1. **Identification of course**
   - 1.1 Course prefix (subject area) and number: GEOS 555
   - 1.2 Course title: Global Environmental Change

2. **Proposed change(s):**
   - 2.1 course number:
   - 2.2 course title: Global Climate Change
   - 2.3 credit hours:
   - 2.4 grade type:
   - 2.5 prerequisites:
   - 2.6 corequisites:
   - 2.7 course description: Explores the science behind climate change, including how models, observations, and proxies are used to understand and predict past and future climate, international perspectives on global climate change, and mitigation strategies put forth by the Intergovernmental Panel on Climate Change.
   - 2.8 other:

3. **Rationale for revision of course:** The proposed title is more reflective of contemporary terminology in the environmental and climate change field. Students will have a clearer understanding (through the title) of the course content. The new course description more closely reflects the detailed content covered and removes vagueness and adds in relevant terminology used in the climate change discipline.

4. **Term of implementation:** 201530

5. **Dates of committee approvals:**

Department of Geography and Geology	2/27/2015
Ogden College Curriculum Committee	
Graduate Council	
University Senate	

**Course revision proposals require a Course Inventory Form be submitted by the College Dean's office to the Office of the Registrar.*

Revise a Course
(Action)

Date: 2/23/2015
Ogden College of Science and Engineering, Department: of Geography and Geology
Contact Person: Leslie North, leslie.north@wku.edu, 5-5982

1. **Identification of course**
   - 1.1 Course prefix (subject area) and number: GEOS 571
   - 1.2 Course title: Quality of Life: Environmental Problems and Ecological Solutions

2. **Proposed change(s):**
   - 2.1 course number:
   - 2.2 course title: Applied Natural Resource Management
   - 2.3 credit hours:
   - 2.4 grade type:
   - 2.5 prerequisites:
   - 2.6 corequisites:
   - 2.7 course description: Seminar approach to understanding natural resource management in the United States and internationally through analysis of past and present environmental problems and implemented alternative solutions.
   - 2.8 other:

3. **Rationale for revision of course:** The proposed title change more closely reflects the course content.

4. **Term of implementation:** 201530

5. **Dates of committee approvals:**

Department of Geography and Geology	2/27/2015
Ogden College Curriculum Committee	
Graduate Council	
University Senate	

**Course revision proposals require a Course Inventory Form be submitted by the College Dean's office to the Office of the Registrar.*

Proposal Date: 2/23/2015

Ogden College of Science and Engineering
Department of Geography and Geology
Proposal to Revise a Program
(Action Item)

Contact Person: David Keeling e-mail: david.keeling@wku.edu Phone: 5-4555

1. **Identification of program**
   - 1.1 Program Reference Number: 072
   - 1.2 Current Program Title: Master of Science in Geoscience
   - 1.3 Credit hours: 30 hours

2. **Identification of the proposed program changes:**
   - Admission requirements are modified to specify the types of preparatory coursework necessary for the program.
   - Recognize change in course number for GEOG 417G and GEOG 419G, which are now GEOS 575 and GEOS 576 respectively.
   - Recognize changes in course titles.

3. **Detailed program description:**

Current Program	**Proposed Program**
MS Geoscience Thesis Program (30 hours)	MS Geoscience Thesis Program (30 hours)
Admission Requirements: * GRE score, with a minimum 3.5 score on the GRE Analytical Writing component, and a 3.0 overall undergraduate GPA. * Minimum of 18 hours of science courses at the undergraduate level, preferably in the geosciences. * A one-page statement of research ~~interests~~. * Written evidence of an agreement from a graduate faculty member in the Department of Geography and Geology willing to supervise the proposed research project. ** ~~Passing grade (C or higher) in an introductory GIS course (GEOG 316/317) and in Spatial Data Analysis (GEOG 391) at the undergraduate level - students can take these courses as preparatory courses if they have not previously~~	Admission Requirements: * GRE score, with a minimum 3.5 score on the GRE Analytical Writing component, and a 3.0 overall undergraduate GPA. * Minimum of 18 hours of science courses at the undergraduate level, preferably in the geosciences. * A one-page statement of research goals. * Written evidence of an agreement from a graduate faculty member in the Department of Geography and Geology willing to supervise the proposed research project. ** Passing grades (C or higher) in appropriate undergraduate course-work to support the thesis research program. For example, students pursuing a thesis project in GIS-related topics are required to have passed an introductory GIS course

~~taken these courses. If taken as a graduate student, a grade of "B" or better is required.~~	(GEOG 316/317) and a Spatial Data Analysis (GEOG 391) course at the undergraduate level - students should take preparatory courses in the summer semester before joining the Geoscience program if they have not previously taken these courses. If taken as a graduate student, a grade of "B" or better is required. Students should consult with their proposed thesis advisor on appropriate preparation coursework before full admission is granted.
Program Core 15 hours	Program Core 15 hours
GEOS 500 Geoscience Research 4 GEOS 502 Research Methods 1 GEOS 520 Geo Stats Methods 4 GEOS 599 Research Thesis 6	GEOS 500 Geoscience Research 4 GEOS 502 Research Methods 1 GEOS 520 Geo Stats Methods 4 GEOS 599 Research Thesis 6
Concentration Electives** 15 hours	Concentration Electives** 15 hours
15 hours of graduate coursework selected from the following electives and approved by the thesis director. Students may select appropriate courses from any of the course areas:	15 hours of graduate coursework selected from the following electives and approved by the thesis director. Students may select appropriate courses from any of the course areas:
Physical Science: GEOG 502 Research Methods 3 GEOS 510 Research Topics 3 GEOS 515 Remote Sensing 4 GEOS 521 Geomorphology 3 GEOS 559 Hydrological Fluid Dynmcs 3 GEOS 566 Karst Geoscience 3 GEOS 595 Geoscience Practicum 3 ~~GEOG 427G Water Resources 3~~ ~~GEOG 428G Applied Groundwater 3~~ GEOL 4xxG Any Geology course 3	Physical Science: GEOG 502 Research Methods 3 GEOS 510 Research Topics 3 GEOS 515 Remote Sensing 4 GEOS 521 Geomorphology 3 GEOS 555 Global Climate Change 3 GEOS 559 Hydrological Fluid Dynmcs 3 GEOS 566 Karst Geoscience 3 GEOS 595 Geoscience Practicum 3 GEOL 4xxG Any Geology course 3
Cultural Science: GEOS 501 Geoscience Development 3 GEOS 507 Concepts/Skills for Teach 3 GEOS 510 Research Topics 3 GEOS 525 Political Geography 3 GEOS 530 Cultural Geography 3 GEOS 534 Historic Preservation 3 GEOS 540 Regional Geography 3 GEOS 550 Economic Geography 3	Cultural Science: GEOS 501 Geoscience Development 3 GEOS 507 Concepts/Skills for Teach 3 GEOS 510 Research Topics 3 GEOS 525 Political Geography 3 GEOS 530 Cultural Geography 3 GEOS 534 Historic Preservation 3 GEOS 540 Regional Geography 3 GEOS 550 Economic Geography 3

GEOS 580 Urban Geography	3
GEOS 585 Population Geography	3
GEOS 595 Geoscience Practicum	3
GEOG 451G Geography Kentucky	3
G.I. Science:	
GEOS 510 Research Topics	3
GEOS 515 Remote Sensing	4
GEOS 517 Spatial Databases	3
GEOS 523 Urban GIS Applications	4
GEOS 577 Special Topics GIS	3
GEOS 584 Applied Env Planning	3
GEOS 590 Experimental Design	3
GEOS 595 Geoscience Practicum	3
~~GEOG 417G GIS Analysis & Model~~	~~3~~
~~GEOG 419G GIS Programming~~	~~3~~
Environmental Science:	
GEOS 505 Biogeography	3
GEOS 506 Environment Seminar	3
GEOS 510 Research Topics	3
GEOS 515 Remote Sensing	4
GEOS 543 Env Science Concepts	3
GEOS 544 Environmental Ethics	3
~~GEOS 571 Quality of Life~~	~~3~~
GEOS 587 Env. Law and Policy	3
GEOS 595 Geoscience Practicum	3
GEOG 474G Environment Planning	3
GEOL 415G Environmental Geology	3
Climate Science:	
GEOS 510 Research Topics	3
GEOS 515 Remote Sensing	4
GEOS 522 Physical Climatology	3
GEOS 533 Synoptic Meteorology	3
GEOS 535 Dynamic Meteorology II	3
GEOS 537 Mesoscale Meteorology	3
GEOS 538 Physical Meteorology	3
GEOS 539 Atmospheric Modeling	3
~~GEOS 555 Global Env Change~~	~~3~~
GEOS 595 Geoscience Practicum	3
GEOG 424G Weather Analysis	3
** A maximum of six hours of advisor-approved electives that are consistent with the student's Research **Focus** may be selected from other departments.	
PROGRAM TOTAL	30 hours

GEOS 580 Urban Geography	3
GEOS 585 Population Geography	3
GEOS 595 Geoscience Practicum	3
GEOG 451G Geography Kentucky	3
G.I. Science:	
GEOS 510 Research Topics	3
GEOS 515 Remote Sensing	4
GEOS 517 Spatial Databases	3
GEOS 523 Urban GIS Applications	4
GEOS 575 GIS Analysis & Modeling	3
GEOS 576 GIS Programming	3
GEOS 577 Special Topics GIS	3
GEOS 584 Applied Env Planning	3
GEOS 590 Experimental Design	3
GEOS 595 Geoscience Practicum	3
Environmental Science:	
GEOS 505 Biogeography	3
GEOS 506 Environment Seminar	3
GEOS 510 Research Topics	3
GEOS 515 Remote Sensing	4
GEOS 543 Env Science Concepts	3
GEOS 544 Environmental Ethics	3
GEOS 555 Global Climate Change	3
GEOS 571 Applied Nat Res Manage	3
GEOS 587 Env. Law and Policy	3
GEOS 595 Geoscience Practicum	3
GEOG 474G Environment Planning	3
GEOL 415G Environmental Geology	3
Climate Science:	
GEOS 510 Research Topics	3
GEOS 515 Remote Sensing	4
GEOS 522 Physical Climatology	3
GEOS 533 Synoptic Meteorology	3
GEOS 535 Dynamic Meteorology II	3
GEOS 537 Mesoscale Meteorology	3
GEOS 538 Physical Meteorology	3
GEOS 539 Atmospheric Modeling	3
GEOS 555 Global Climate Change	**3**
GEOS 595 Geoscience Practicum	3
GEOG 424G Weather Analysis	3
** A maximum of six hours of advisor-approved electives that are consistent with the student's Research **Focus** may be selected from other departments.	
PROGRAM TOTAL	30 hours

4. **Rationale for the proposed program changes:**
    - With different areas of research concentration in the MS Geoscience program, different preparatory coursework is appropriate as admission requirements, depending on the students' research interests, rather than a standardized set of prerequisites that might not be appropriate for a particular thesis project.
    - GEOG 417G and GEOG 419G are changed to GEOS 575 and GEOS 576 respectively, to be more effectively sequenced in the program.
    - Minor changes to course titles better reflect course content.
    - The Department is proposing a JUMP program parallel to this change, and this will better align the objectives of the new JUMP option.

5. **Proposed term for implementation and special provisions:**
    - **Term: Fall 2015**

6. **Dates of prior committee approvals:**

Geography and Geology Graduate Committee	02/27/2015
OCSE Graduate Curriculum Committee	
Graduate Council	
University Senate	

Attachment: **Program Inventory Form**