OGDEN COLLEGE OF SCIENCE AND ENGINEERING

April 23, 2013

MEMORANDUM TO: OCSE Graduate Committee

Dr. Martin Stone	Dr. Shane Palmquist
Dr. Greg Arbuckle	Dr. David Keeling
Dr. Larry Alice	Dr. Mark Robinson
Dr. Raja Dakshinmurthy	Dr. Ivan Novikov
Dr. Guangming Xing	Dr. Kevin Williams

FROM: Cathleen Webb, Chair

SUBJECT: Agenda for meeting of **Friday, April 26, 2013 at 3:00 p.m, COHH 4123**

OLD BUSINESS

Consideration of the minutes of the March 22, 2013, meeting.

NEW BUSINESS

Action Agenda
Department of Chemistry

1. Proposal to Revise a Program
    a. Ref. #059, Master of Science in Chemistry, 30 plus 3 credit hours of research tool

OTHER BUSINESS

MINUTES – OCSE Graduate Curriculum Committee March 22, 2013

Members Present: Dr. Martin Stone; Dr. Larry Alice; Dr. Raja Dakshinmurthy; Dr. Guangming Xing; Dr. Shane Palmquist; and Dr. Mark Robinson

Cathleen Webb, Chair

This meeting was held via email.

OLD BUSINESS

Keeling/Xing moved approval of the minutes from the February 22, 2013, meeting. Motion approved.

NEW BUSINESS

Consent Agenda

Keeling/Xing moved approval of the Consent Agenda. Motion approved.

Proposal Date: February 11, 2013

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

Contact Person: Cathleen Webb, cathleen.webb@wku.edu

1. Identification of program:

1.1 Current program reference number: # 059
1.2 Current program title: Master of Science in Chemistry
1.3 Current Credit hours: 30 plus 3 credit hours of research tool

2. Identification of the proposed program changes:

[1]. Reduce the current credit hour requirement to 30 which includes 3 hours of research tool.

3. Detailed program description:

Current program Description	Proposed program description
Admission Requirements In addition to Graduate Studies admission requirements, candidates for admission to this program must submit evidence of satisfactory completion of undergraduate curricula in chemistry. The Master of Science degree program in Chemistry has been designed around a core curriculum. In addition, a number of elective courses are offered in analytical, inorganic, and physical chemistry, and in biochemistry. This program offers a Master of Science in chemistry in Normal Thesis, and Research Intensive Thesis concentrations.	**Admission Requirements** In addition to Graduate Studies admission requirements, candidates for admission to this program must submit evidence of satisfactory completion of undergraduate curricula in chemistry. The Master of Science degree program in Chemistry has been designed around a core curriculum. In addition, a number of elective courses are offered in analytical, inorganic, and physical chemistry, and in biochemistry. This program offers a Master of Science in chemistry in Normal Thesis and Research Intensive Thesis concentrations.
Degree Requirements-30-33 hours	**Degree Requirements-30-32 hours**
Thesis Concentration	**Thesis Concentration**
All candidates are required to complete a minimum of 30 semester hours of graduate work. Students are required to complete 24 semester hours of course work and 6 hours of thesis research. Students who have completed 3 subject courses at the 500-level with a B average may elect to take CHEM 516 as part of the 24-hour course work requirement.	**All candidates** are required to complete a minimum of 30 semester hours of graduate work. Students are required to complete a minimum of 24 semester hours of course work and 6 hours of thesis research. Students who have completed 3 subject courses with a B average may elect to take CHEM 516 as part of the 24-credit course work requirement.
Required -12 hours Students must complete 4 out of 5 subject area requirements, and at least two of the courses must be at the 500-level:	*Required Subject Courses-12 hours* Students must complete 4 out of 5 subject area requirements, and at least two of the courses must be at the 500-level:

CHEM 435G Analytical Chemistry OR CHEM 531 Advanced Analytical Chemistry CHEM 446G Biochemistry OR CHEM 535 Analytical Biochemistry OR CHEM 562 Advanced Biochemistry CHEM 420G Inorganic Chemistry OR CHEM 520 Advanced Inorganic Chemistry I CHEM 440G Organic Synthesis OR CHEM 541 Advanced Organic Chemistry II CHEM 452G Physical Chemistry OR CHEM 450G Physical Chemistry OR CHEM 550 Advanced Physical Chemistry I	CHEM 435G Analytical Chemistry OR CHEM 531 Advanced Analytical Chemistry CHEM 446G Biochemistry OR CHEM 535 Analytical Biochemistry OR CHEM 562 Advanced Biochemistry CHEM 420G Inorganic Chemistry OR CHEM 520 Advanced Inorganic Chemistry I CHEM 440G Organic Synthesis OR CHEM 541 Advanced Organic Chemistry II CHEM 452G Physical Chemistry OR CHEM 450G Physical Chemistry OR CHEM 550 Advanced Physical Chemistry I
Investigation Course-3 hours CHEM 580 Chemical Skills The student must review the current chemical literature on a selected topic approved by the course instructor, and prepare a written report.	*Investigation Course-3 hours* CHEM 580 Chemical Skills The student must review the current chemical literature on a selected topic approved by the course instructor, and prepare a written report.
Required Seminar-2 hours CHEM 598 Graduate Seminar requirements are to be satisfied according to the current departmental policy.	*Required Seminar-2 hours* CHEM 598 Graduate Seminar requirements are to be satisfied according to the current departmental policy.
Thesis-6 hours CHEM 599 requirements are to be satisfied by preparing a thesis on the project chosen by the student and approved by the members of the student's graduate committee. These are to be prepared in accordance with the specifications established by the Office of Graduate Studies and Research. A thesis grade will be given after the final thesis has been approved by the student's graduate committee and the Department head.	*Thesis-6 hours* CHEM 599 requirements are to be satisfied by preparing a thesis on the project chosen by the student and approved by the members of the student's graduate committee. These are to be prepared in accordance with the specifications established by the Office of Graduate Studies and Research. A thesis grade will be given after the final thesis has been approved by the student's graduate committee and the Department head.
Electives Elective course work may be selected from among the content courses or other advisor approved chemistry courses.	*Electives* Elective course work may be selected from among the content courses or other advisor approved chemistry courses.
Thesis Concentration - Coal Chemistry Option Thesis Requirements with the following courses must be incorporated in the concentration requirements: CHEM 490G Materials Chemistry CHEM 591 Coal Chemistry Laboratory	**Thesis Concentration -Coal Chemistry Option-32 hrs** Thesis Requirements with the following courses incorporated to meet concentration requirements: CHEM 490G Materials Chemistry CHEM 591 Coal Chemistry Laboratory
Thesis Concentration - Biochemistry Option Thesis Requirements with the following courses must be incorporated in the concentration requirements: CHEM 446G Biochemistry CHEM 447G Biochemistry Laboratory CHEM 467G Biochemistry II CHEM 535 Analytical Biochemistry CHEM 562 Advanced Biochemistry	**Thesis Concentration -Biochemistry Option-32 hrs** Thesis Requirements with the following courses incorporated to meet the concentration requirements: CHEM 446G Biochemistry OR CHEM 535 Analytical Biochemistry OR CHEM 562 Advanced Biochemistry CHEM 447G Biochemistry Laboratory CHEM 467G Biochemistry II
Research Intensive Thesis Concentration Candidates are required to complete 33 semester hours of graduate work, including 17 hours of course work	**Research Intensive Thesis Concentration** Candidates are required to complete 30 semester hours of graduate work, including 17 hours of course work and

and 16 hours of research-related graduate work. Candidates must apply to the Department Graduate Committee in order to be considered for this concentration. As part of the concentration application, they must select a research advisor and meet with the committee to demonstrate they understand the requirements for this concentration. The Committee must consider factors such as previous research experience of the student, publication record of the student, and the research advisor's publication record when determining if the student can pursue this concentration. The student and advisor must submit a progress report to the Committee by the end of the second semester. If the committee determines there is insufficient progress towards research and publication, the student will be moved to the normal thesis concentration. A student in the Research Intensive Thesis concentration may also opt to pursue the Thesis option at the end of the first or second semester after consulting with their research advisor. A student moving to the normal thesis option within the first or second semester should be able to complete the requirements for the normal thesis option within the standard two year period. A student who wishes to move to the normal option in the second year of graduate study must get permission from the Graduate Committee and will probably require an additional semester of coursework to complete the degree. *Required -3 hours* Students must complete one of the following 500-level courses: CHEM 520 Advanced Inorganic Chemistry CHEM 531 Advanced Analytical Chemistry CHEM 535 Analytical Biochemistry CHEM 541 Advanced Organic Chemistry II CHEM 550 Advanced Physical Chemistry I CHEM 562 Advanced Biochemistry *Required Seminar-2 hours* CHEM 598 Graduate Seminar requirements are to be satisfied according to the current departmental policy. *Thesis-6 hours* CHEM 599 requirements are to be satisfied by preparing a thesis on the project chosen by the student and approved by the members of the student's graduate committee. These are to be prepared in accordance with the specifications established by the Office of Graduate Studies and Research. A thesis grade will be given after the final thesis has been approved by the student's graduate committee and the Department head. Students in the Research Intensive Thesis concentration may opt to use their published papers as chapters in their thesis.	13 hours of research-related graduate work. Candidates must apply to the Department Graduate Committee in order to be considered for this concentration. As part of the concentration application, they must select a research advisor and meet with the committee to demonstrate they understand the requirements for this concentration. The Committee must consider factors such as previous research experience of the student, publication record of the student, and the research advisor's publication record when determining if the student can pursue this concentration. The student and advisor must submit a progress report to the Committee by the end of the second semester. If the committee determines there is insufficient progress towards research and publication, the student will be moved to the normal thesis concentration. A student in the Research Intensive Thesis concentration may also opt to pursue the Thesis option at the end of the first or second semester after consulting with their research advisor. A student moving to a thesis option within the first or second semester should be able to complete the requirements for the normal thesis option within the normal two year period. A student who wishes to move to the normal option in the second year of graduate study must get permission from the Graduate Committee and will probably require an additional semester of coursework to complete the degree. *Required Subject Courses-3 hours* Students must complete one of the following 500-level courses: CHEM 520 Advanced Inorganic Chemistry CHEM 531 Advanced Analytical Chemistry CHEM 535 Analytical Biochemistry CHEM 541 Advanced Organic Chemistry II CHEM 550 Advanced Physical Chemistry I CHEM 562 Advanced Biochemistry *Required Seminar-2 hours* CHEM 598 Graduate Seminar requirements are to be satisfied according to the current departmental policy. *Thesis-6 hours* CHEM 599 requirements are to be satisfied by preparing a thesis on the project chosen by the student and approved by the members of the student's graduate committee. These are to be prepared in accordance with the specifications established by the Office of Graduate Studies and Research. A thesis grade will be given after the final thesis has been approved by the student's graduate committee and the Department head. Students in the Research Intensive Thesis concentration may opt to use their published papers as chapters in their thesis.

Electives-3 hours Only one elective course work may be selected from the subject courses or other appropriate chemistry courses approved by the student's graduate committee. *Research Proposal-3 hours* CHEM 588 requires students to prepare a research proposal which must be presented to and approved by the student's research committee and one member of the Department Graduate Committee. *Practicum Research Experience in Chemistry -10 hours* CHEM 596 requirements are to be satisfied by conducting a research project under the direction of the student's research advisor. This course provides faculty-mentored research experiences and emphasizes skill based training for students. Bridging the gap between academic study and professional development, this course will help students to develop and enhance problem solving and communication skills. This course emphasizes mastery of advanced technical skills, independent of thesis research. *Scientific Writing in Chemistry*-6 hours CHEM 595 requires students to prepare and submit two manuscripts based on their research to peer-reviewed journals under the guidance of the student's research committee. At least one paper must be accepted to receive credit and graduate.	*Electives-3 hours* Only one elective course work may be selected from the subject courses or other appropriate chemistry courses approved by the student's graduate committee. *Research Proposal-3 hours* CHEM 588 requires students to prepare a research proposal which must be presented to and approved by the student's research committee and one member of the Department Graduate Committee. *Practicum Research Experience in Chemistry-6 hours* CHEM 596 requirements are to be satisfied by conducting a research project under the direction of the student's research advisor. This course provides faculty-mentored research experiences and emphasizes skill based training for students. Bridging the gap between academic study and professional development, this course will help students to develop and enhance problem solving and communication skills. This course emphasizes mastery of advanced technical skills, independent of thesis research. *Scientific Writing in Chemistry*-6 hours CHEM 595 requires students to prepare and submit two manuscripts based on their research to peer-reviewed journals under the guidance of the student's research committee. At least one paper must be accepted to receive credit and graduate.

4. Rationale for the proposed program change:

Revise the current credit hour requirement to 30-32 hours which includes 3 hours of research tool. This revision is proposed in keeping with the increased emphasis on the research mission of WKU and to be consistent with other programs in Ogden College.

5. Proposed term for implementation and special provisions (if applicable):

Fall 2013

6. Dates of prior committee approvals:

Department of Chemistry _____2/11/2013_____

OCSE Curriculum Committee _____

Graduate Council _____

University Senate _____