10. Special Consideration

**College of Science**
University Studies Degree
Area of Concentration – Science for Secondary Teaching
Texas A&M University
University Studies Degree
Proposed Area of Concentration

Name of Area of Concentration: ___Science for Secondary Teaching_____________

Department: ________________________________________________________________

College: ___College of Science________________________________________________

Office responsible for advising students in this Area of Concentration:

a. Office Name/Location: CLSC Undergraduate Programs/514 Blocker____

b. Telephone Number: 845-7362___________________________________________

c. Email: holly@science.tamu.edu___________________________________________

The University Studies degree is an innovative interdisciplinary degree with an area of
concentration and two minors, at least one of which is in a different college from that of the area
of concentration. The degree serves two main groups of students: first, students who are in good
academic standing (GPA of 2.0 or above) but who are unable to find or gain access to a major of
interest and (b) students who specifically seek a broad interdisciplinary combination of coursework
that is unavailable through existing degree programs.

The educational objective of the University Studies Degree is to provide students with an
interdisciplinary academic degree that will prepare them for a successful life and career or for
graduate school.

Please append two items to this sheet:

1. A two or three-page statement that: A) describes the area of concentration and
distinguishes it from existing majors, B) explains how this area of concentration would
serve at least one of the two main groups of students cited above, and C) indicates how
this area of concentration would promote the purposes of the university studies degree as
described above.

2. The enclosed form for listing courses that will be used in the area of concentration that
will be required as prerequisites, and will be used for university core curriculum
requirements.

Reviewed and approved by:

For Interdisciplinary Degrees Only:

Department Head/Program Director __________________________ Date __________

College Undergraduate Curriculum Committee or UCC representative

AOC Dean of College __________________________ Date __________

Department Head/Program Director __________________________ Date __________

College Undergraduate Curriculum Committee or UCC representative

AOC Dean of College __________________________ Date __________
The Science for Teaching area of concentration consists of courses that give students desiring secondary-school teaching credentials a solid foundation in life, earth and physical sciences. In particular, the courses chosen encompass the science composite areas tested by the State of Texas on the TExES. These are the courses that are currently required for the science composite certificate.

When the State discontinued the secondary education major in the late 1980’s, students were required to obtain a degree in an academic area as part of their science certification, however, the academic area was not required to be in a science discipline. This area of concentration best fits the minimum requirements for composite certification and a minor from the College of Education will provide the necessary pedagogy coursework to support their work in the classroom and with other professional responsibilities. It is recommended that a second minor be sought in one of the science fields to add strength to their background beyond the initial broad survey level courses. This area of concentration will serve students needs very well and allow them a more tailored degree plan which is different from existing majors seeking careers in the field and laboratory, preparing for professional school (medical, dental, etc.) or graduate work.

There is a severe shortage of certified science teachers in the classrooms of Texas and beyond. It is believed that this option will help to meet the demand for our state.
MEMORANDUM

TO: Angie-Hill Price
    Speaker, Faculty Senate

SUBJECT: Area of Concentration in Science of Teaching

September 17, 2007

When the University Studies Degree was developed, one of the purposes was to accommodate students in good academic standing with the University who were interested in a broad, interdisciplinary degree.

To this end, the Colleges of Science and Education and Human Development have partnered to develop an Area of Concentration in Science of Teaching that will allow students with an aptitude in science to take a broad-spectrum of classes that meet the criteria for certification in Life Sciences, allowing them to pursue a career teaching science. As you may know, there is a severe shortage of certified science teachers so this degree will lead to immediate employment as well as attend to a national need.

In order to meet the criteria for certification in Life Science, the Area of Concentration includes coursework in Chemistry, Genetics, Earth Science, Ecology, Physics, and Biology. To accommodate these courses, the Area of Concentration requires 32 credit hours, rather than the recommended 21-24. I fully support this increased number as it meets the criteria for certification and, further, the spirit of the University Studies Degree. Please note that students will be encouraged to pursue Chemistry as one of their minors, which will reduce the Area of Concentration to 24 hours.

I am very excited about the potential of this Area of Concentration and appreciate the collaboration between the colleges involved.

I, Martyn Gunn, Ph.D.
Dean of Undergraduate Programs and Associate Provost
for Academic Services
COURSE FORM

There needs to be a minimum of 6 hours at 400-level and 36 hours of 300-400 level coursework in residence at Texas A&M University.

A. Select 21-24 hours from among the following courses for the area of concentration. If there will be more than 24 hours in the area of concentration please include a justification. Two approved writing courses will be required for the University Studies degree. The courses may be in the area of concentration or the minors. Please indicate writing courses in the area of concentration, if any, with a W following the course number (TAMU 400 W). If courses required for the area of concentration include a course or courses from outside the department of the area of concentration, please include a letter of support from the department(s) offering the course(s). Courses listed as part of the University Core Curriculum do not need a letter of support.

1. The following *32__ hours of course work are required*

<table>
<thead>
<tr>
<th>Course Prefix &amp; Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 466</td>
<td>Principles of Evolution</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 101*</td>
<td>Fundamentals of Chemistry I</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 102*</td>
<td>Fundamentals of Chemistry II</td>
<td>4</td>
</tr>
<tr>
<td>GENE 320</td>
<td>Biomedical Genetics (or GENE 301 or 302)</td>
<td>3</td>
</tr>
<tr>
<td>GEOL 101</td>
<td>Principles of Geology</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 201**</td>
<td>College Physics</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 202**</td>
<td>College Physics</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 306</td>
<td>Basic Astronomy</td>
<td>3</td>
</tr>
<tr>
<td>WFSC 420</td>
<td>Ecology and Society</td>
<td>3</td>
</tr>
</tbody>
</table>

*It is recommended that students pursue chemistry as one of their minors to strengthen their skills in this area. This would also reduce the Area of Concentration to the 24 hours.

**Students may take calculus-based physics (218/219 or 208) if desired, keeping in mind that mathematics 151 (or 171) and 152 (or 172) are pre/co-requisites.

2. Select _____ hours from the following courses*:

* If the Area of Concentration requires students to select courses from a list of pre-selected combinations, please duplicate this table; e.g. two course from column A, two courses from column B
3. Prerequisite courses not included in the University Core Curriculum or listed above:

<table>
<thead>
<tr>
<th>Course Prefix &amp; Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
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<tbody>
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</tbody>
</table>

B. Student will select two minors (30-36 hours). One must be from outside the college offering the area of concentration.

C. Free electives (17-26 hours). If there will be fewer than 17 hours of free electives please include a justification in the preceding 2-3 page statement.

*Only a factor if students chooses not to minor in area (Chemistry recommended) that does not utilize some existing course work in Area of Concentration.

D. Specify courses in the University Core Curriculum \(^1\), \(^2\), \(^3\) that will be required for this area of concentration (43 hours). Please maintain as much flexibility as possible.

<table>
<thead>
<tr>
<th>Course Prefix &amp; No.</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication</td>
<td></td>
<td></td>
</tr>
<tr>
<td>English 104</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mathematics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Natural Sciences</td>
<td>BIOL111/112 Introductory Biology I &amp; II</td>
<td>8</td>
</tr>
<tr>
<td>Humanities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visual &amp; Performing Arts</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social &amp; Behavioral Sciences</td>
<td></td>
<td></td>
</tr>
<tr>
<td>History</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Political Science 206</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Political Science 207</td>
<td></td>
<td></td>
</tr>
<tr>
<td>International &amp; Cultural Diversity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kinesiology 198</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kinesiology 199</td>
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</tbody>
</table>

NOTES: 

\(^1\) To be selected from the University Core Curriculum.

\(^2\) There is a graduation requirement which includes 6 hours of international and cultural diversity courses. Refer to the International and Cultural Diversity table for a list of acceptable courses. A course satisfying a University Core category, a college/department requirement, or as a free elective may be used to satisfy this requirement.

\(^3\) Completion in high school of two units of the same foreign language or one year of college work is required for graduation.
June 26, 2007

MEMORANDUM

TO:          Dr. David Peterson, Associate Department Head - WFSC

FROM:        Dr. Timothy Scott, Associate Dean

SUBJECT: Use of GENE 301 or 302 or 320 in University Study Plan from College of Science

The College of Science is attempting to outline a plan that would provide the basic science content required by TAMU to sit for the Texas Examination of Educator Standards (TExES). This would be one option, in addition to those currently offered in the College and across campus to obtain teacher certification in the sciences. We are collaborating with the College of Education and Human Resource Development to offer a minor in Education for students interested in this option.

GENE 301 or 302 or 320 are respected courses and currently fulfill the genetics component of students seeking Life Science certification. Additionally, the course could serve as one of two 300 level courses required in the area of emphasis.

If there are no objections to our listing GENE 301 or 302 or 320 in the described University Studies Plan, please sign the consent below. Many thanks.

____________________________

Approval to list GENE 301 or 302 or 320 in Science Foundations University Study Plan in the College of Science:

[Signature]
Dr. David Peterson
Associate Head – BICH/GENE

Date: July 20, 2007
February 19, 2007

MEMORANDUM

TO: Dr. Vatche Tchakerian, Associate Dean - Geosciences

FROM: Dr. Timothy Scott, Associate Dean

SUBJECT: Use of GEOL 101 in Science Foundations University Study Plan from College of Science

The College of Science is attempting to outline a plan that would provide the basic science content required by TAMU to sit for the Texas Examination of Educator Standards (TExES). This would be one option, in addition to those currently offered in the College and across campus to obtain teacher certification in the sciences. We are collaborating with the College of Education and Human Resource Development to offer a minor in Education for students interested in this option.

GEOL 101 – Principles of Geology is a respected course and currently fulfills one of the earth science requirements for students seeking Science Composite certification.

If there are no objections to our listing GEOL 101 in the described University Studies Plan, please sign the consent below. Many thanks.

______________________________

Dr. Vatche Tchakerian,
Associate Dean – GEOS

2/21/2007

Date
February 19, 2007

MEMORANDUM

TO: Dr. Doug Slack, Associate Department - WFSC

FROM: Dr. Timothy Scott, Associate Dean

SUBJECT: Use of WFSC 420 in Science Foundations University Study Plan from College of Science

The College of Science is attempting to outline a plan that would provide the basic science content required by TAMU to sit for the Texas Examination of Educator Standards (TExES). This would be one option, in addition to those currently offered in the College and across campus to obtain teacher certification in the sciences. We are collaborating with the College of Education and Human Resource Development to offer a minor in Education for students interested in this option.

WFSC 420 – Ecology & Society is a respected course and currently fulfills the ecology component of students seeking Life Science certification. Additionally, it would serve as one of two 400 level courses required in the area of emphasis.

If there are no objections to our listing WFSC 420 in the described University Studies Plan, please sign the consent below. Many thanks.

______________________________

Approval to list WFSC 420 in Science Foundations University Study Plan in the College of Science:

Dr. Doug Slack,
Associate Head – WFSC

27 June 07

Date
MEMORANDUM

TO:     Tim Scott, Associate Dean
        College of Science
        Jo Howze, Associate Dean
        College of Engineering
        Vatche Tchakerian, Associate Dean
        College of Geosciences

FROM:  Jim Kracht
        Associate Dean, College of Education and Human Development

SUBJECT: Minor in Applied Learning in Science, Technology, Engineering, and Mathematics (STEM)

The College of Education and Human Development is submitting a proposal for a Minor in Applied Learning in STEM for consideration by the University Curriculum Committee in its June meeting. The minor has been approved by the faculty of the Department of Teaching, Learning, and Culture and the Curriculum Committee of College of Education and Human Development.

This minor will provide a third option for students seeking certification as secondary teachers in high-need STEM areas. Other options currently include the Graduate Certification and Accelerate programs. We hope that students in your colleges who have an interest in secondary will make use of this minor or the other options available to pursue their secondary teaching certificate.

We hope that your college will support this new minor. If you have no objection to this proposal, please indicate below and return to me by May 30. If you have questions, please contact me at 458-3560 or jimkracht@tamu.edu. Thanks

The College of Science has no objections to the Minor in Applied Learning in STEM as proposed by the College of Education and Human Development.

[Signature]
Associate Dean

[Date]
Texas A&M University  
Proposed Minor Field of Study

Name of Minor Program: Minor in Applied Learning in Science, Technology, Engineering, and Mathematics (STEM)

Department: Department of Teaching, Learning and Culture

College: College of Education and Human Development

Will grant a minor Yes Academic Year: 2008

A selection from among the following courses will constitute a minor field of study.

A. The following _15_ hours of course work are required.

* TEED 302 (3)  
* TEFB 322 or INST 310 (3)  
* TEFB 323 (3)

* TEFB 324 (3)  
* RDNG 465 (3)

B. Select 3 hours from the following courses:

* TEFB 406 or TEED 649 sec. 503 OR TEFB 407 or TEED 649 sec. 504 (3)

Please indicate further requirements such as grade point requirement, prerequisites, resident (if above the minimum 6 hours at the 300 to 400 level), capstone or methods courses.

- Minimum of 18 hours required.
- Minimum of 6 hours at the 300 to 400 level.
- TEFB 201 (1) is a prerequisite for the minor.
- All courses must be completed with a grade of “C” or better.
- Students will be required to maintain a GPR of 2.5 in minor courses in order to be eligible to pursue teacher certification.

Reviewed and approved by:

Department Head/Program Director  Date  
AOC Dean of College  Date