

Minutes of the Campus Curricula Committee Meeting

January 14, 2014

3:30 pm, Room 117 Fulton Hall

Attendees: Lahne Black, Kaylon Buckner, Barry Flachsbart, Irina Ivliyeva, Deanne Jackson, Keith Nisbett, Steve Raper, Tom Schuman, Daniel Tauritz, and Paul Worsey.

The Committee welcomed Kaylon Buckner, who will serve as secretary to the Campus Curricula Committee, replacing Lahne Black.

The meeting agenda was amended, changing the order of items to be discussed.

The following curriculum forms were discussed and approved:

Degree Change Forms:

File #16.1

File #17.1

File #48.1

File #64.1

File #115.1

File #193.1

Course Change Forms:

CC File #8475

CC File #8476

CC File #8477

CC File #8479

CC File #8480

Experimental Course Forms:

File #3990

File #4006

File #4013

File #4014

File #4015

File #4017

File #4019

File #4020

File #4021

File #4024

File #4025

File #4026

File #4028

Materials Science and Engineering withdrew the following form:

CC #8478 Materials Science and Engineering 325 - Materials Selection in Mechanical Design



While creating the master crosswalk tables for the 4-digit course renumbering implementation, a few instances of duplicate course numbers were found within a discipline. The Registrar's Office worked with the departments to identify the correct number and change the erroneous submission.

The Committee briefly discussed the concerns related to implementing experiential learning into undergraduate curricula. Members agreed to revisit the topic at the February meeting.

The meeting adjourned at 5:15 pm.

A handwritten signature in blue ink that reads "Daniel Tauritz".

Daniel Tauritz, Chair
Missouri S&T Campus Curricula Committee

Program Change Request

Date Submitted: 12/03/13 2:29 pm

Viewing: **CHEM-BS : Chemistry BS**

File: 16.1

Last edit: 01/17/14 11:24 am

Changes proposed by: tschuman

Catalog Pages

Using this

Program

[Chemistry](#)

Start Term **Fall 2014**

Program Code CHEM-BS

Department Chemistry

Title

In Workflow

1. **RCHEMIST Chair**
2. **CCC Secretary**
3. **Sciences DSCC Chair**
4. **Pending CCC Agenda post**
5. **CCC Meeting Agenda**
6. **Campus Curricula Committee Chair**
7. **FS Meeting Agenda**
8. Faculty Senate Chair
9. Registrar
10. Peoplesoft

Approval Path

1. 12/03/13 5:52 pm
woelkk: Approved for RCHEMIST Chair
2. 12/05/13 9:27 am
lahne: Approved for CCC Secretary
3. 12/13/13 5:09 pm
tauritzd: Approved for Sciences DSCC Chair
4. 12/16/13 9:27 am
lahne: Approved for Pending CCC Agenda post
5. 01/17/14 12:43 pm
lahne: Approved for CCC Meeting Agenda
6. 01/17/14 12:49 pm
tauritzd: Approved for Campus Curricula Committee Chair

Chemistry BS

Program Requirements and Description

Bachelor of Science Chemistry

A minimum of 131 credit hours is required for a Bachelor of Science degree in Chemistry and an average of at least two grade points per credit hour must be obtained. These requirements for the B.S. degree are in addition to credit received for algebra, trigonometry, and basic ROTC.

The Chemistry science curriculum requires twelve semester hours in humanities, exclusive of foreign language, and must include [ENGLISH 60](#) or [ENGLISH 160](#). A minimum of nine semester hours is required in social sciences, including either [HISTORY 175](#), [HISTORY 176](#), [HISTORY 112](#), or [POL SCI 90](#). Specific requirements for the bachelor degree are outlined in the sample program listed below.

Freshman Year			
First Semester	Credits	Second Semester	Credits
CHEM 1	4	CHEM 3	3
CHEM 2	1	CHEM 8	2
CHEM 4	1	MATH 21	5
CHEM 11	1	Electives	6
MATH 8	5		
ENGLISH 20	3		
HISTORY 112 , or 175 , or 176 , or POL SCI 90	3		
	18		16
Sophomore Year			
First Semester	Credits	Second Semester	Credits
CHEM 221	4	CHEM 223	4
CHEM 226	1	CHEM 228	1
MATH 22	4	PHYSICS 25	4
PHYSICS 21	4	PHYSICS 26	1
PHYSICS 22	1	COMP SCI 53 or 74 and 78	3
Elective	3	COMP SCI 74 & COMP SCI 78	3
		STAT 213	3
	17		16
Junior Year			
First Semester	Credits	Second Semester	Credits
CHEM 343	3	CHEM 151	4

ENGLISH 60	3	CHEM 237	3
CHEM 361	3	CHEM 238	1
Electives	6	CHEM 241	3
		CHEM 242	1
		CHEM 328	3
	15		15
Senior Year			
First Semester	Credits	Second Semester	Credits
CHEM 243	3	CHEM 310 or 390	1
CHEM 244	1	Chemistry Electives	7
CHEM 251	4	Electives	9
CHEM 310 or 390	1		
Chemistry Electives	6		
Electives	2		
	17		17
Total Credits: 131			

Notes:

Grade Requirements: Students must complete a minimum of 131 credit hours for a Bachelor of Science in Chemistry degree. A minimum grade of "C" is required for each chemistry course counted towards the degree.

ROTC: Basic ROTC may be taken in the freshman and sophomore year, but is not countable towards a degree.

Chemistry Electives: Of these thirteen (13) hours of chemistry electives, three (3) must be chosen from **3xxx, 4xxx 300** (or **5xxx or higher 400** with permission) level chemistry courses, and ten (10) hours must be **2xxx 200**-level **or higher or higher** in chemistry **or or** another technical area with permission of department chairperson.

Electives: There are twenty-six (26) hours of electives. Six (6) elective hours must be completed in the social sciences. Nine (9) elective hours are required in the humanities, exclusive of foreign language. Three of the humanities hours must be literature.

Students planning to attend graduate school are encouraged to incorporate additional higher level chemistry electives, math, and foreign language, including a scientific literature course. Three (3) of the humanities hours are to be at the 100-level or higher. Students planning to attend graduate school are encouraged to incorporate additional higher level chemistry electives, math, and foreign language, including scientific literature course. Recommended courses include but are not limited to the following:

- **Biology, 2xxx, 3xxx and 4xxx level, especially [BIO SCI 211](#), or [BIO SCI 331](#) & [BIO SCI 332](#)**
- **~~Biology, 200 and 300 level, especially [BIO SCI 214](#)~~ Math **2xxx, 3xxx 200** and **4xxx 300**-level, especially [MATH 204](#), [MATH 208](#) & [MATH 325](#)**
- **Physics **2xxx, 3xxx 200** and **4xxx 300**-level, especially [PHYSICS 208](#), [PHYSICS 221](#), [PHYSICS 323](#), [PHYSICS 377](#), or [PHYSICS 381](#) [PHYSICS 323](#) & [PHYSICS 341](#)**
- **Statistics, **2xxx, 3xxx and 4xxx 200 & 300**-level, especially [STAT 343](#), [STAT 346](#) or ~~[STAT 346](#)~~ & [STAT 353](#)**
- **[CER ENG 291](#) and [CER ENG 292](#), or [GEO 275](#)**
- ~~[CER ENG 391](#)~~ and ~~[CER ENG 392](#)~~, or [GEOLOGY 381](#) A foreign language series.

Students who plan to teach high school chemistry should consult the Education section of this catalog.

Chemistry Biochemistry Emphasis Area

Freshman Year			
First Semester	Credits	Second Semester	Credits
CHEM 1	4	CHEM 3	3
CHEM 2	1	CHEM 8	2
CHEM 4	1	MATH 21	5
CHEM 11	1	BIO SCI 211	3
MATH 8	5	BIO SCI 212	1
ENGLISH 20	3	Humanities Elective	3
HISTORY 112 , or 175 , or 176 , or POL SCI 90	3		
	18		17
Sophomore Year			
First Semester	Credits	Second Semester	Credits
CHEM 221	4	CHEM 223	4
CHEM 226	1	CHEM 228	1
MATH 22	4	PHYSICS 25	4
PHYSICS 21	4	PHYSICS 26	1
PHYSICS 22	1	COMP SCI 53 or 74 and 78	3
Literature Elective	3	COMP SCI 74 & COMP SCI 78	3
		STAT 213	3
	17		16
Junior Year			
First Semester	Credits	Second Semester	Credits
CHEM 343	3	CHEM 151	4
CHEM 361	3	CHEM 241	3
CHEM 362	2	CHEM 242	1
ENGLISH 60	3	CHEM 363	3
Social Sciences Elective	3	Humanities Elective	3
Electives	3	Electives	2
	17		16
Senior Year			
First Semester	Credits	Second Semester	Credits
CHEM 243	3	CHEM 237	3
CHEM 244	1	CHEM 238	1

CHEM 251	4	CHEM 300	1
CHEM 310 or 390	1	CHEM 310 or 390	1
BIO SCI 331	3	CHEM 328	3
Elective	3	Social Sciences Elective	3
		Elective	3
	15		15
Total Credits: 131			

Notes:

Grade Requirements: Students must complete a minimum of 131 credit hours for the Bachelor of Science in Chemistry degree. A minimum grade of "C" is required for each Chemistry course counted towards the degree.

ROTC: Basic ROTC may be taken in the freshman and sophomore years, but is not countable towards a degree.

Electives: There are eleven (11) hours of electives. **Students planning to attend graduate school are encouraged to incorporate additional higher level chemistry electives, math, and foreign language, including a scientific literature course. Three of the humanities hours must be literature.**

~~Students planning to attend graduate school are encouraged to incorporate additional higher level chemistry electives, math, and foreign language, including a scientific literature course.~~ Recommended courses include but are not limited to the following:

- Biology, ~~2xxx, 3xxx 200~~ and ~~4xxx 300m~~ especially [BIO SCI 315](#), [BIO SCI 335](#), [BIO SCI 370](#), [BIO SCI 375](#), & [BIO SCI 383](#)
~~BIO SCI 383~~
- Math ~~2xxx, 3xxx 200~~ and ~~4xxx 300~~-level, especially [MATH 204](#), [MATH 208](#) and [MATH 325](#)
- Physics ~~2xxx, 3xxx 200~~ and ~~4xxx 300~~-level, especially [PHYSICS 208](#), [PHYSICS 221](#), & [PHYSICS 323](#)
- Statistics, ~~2xxx, 3xxx and 4xxx 200 & 300~~-level, especially [STAT 343](#), [STAT 346](#) & [STAT 353](#)
- A foreign language series, French, German or Russian are recommended.

Polymer & Coatings Science Emphasis Area

Freshman Year			
First Semester	Credits	Second Semester	Credits
CHEM 1	4	CHEM 3	3
CHEM 2	1	CHEM 8	2
CHEM 4	1	MATH 21	5
CHEM 11	1	Electives	6
MATH 8	5		
ENGLISH 20	3		
HISTORY 112 , or 175 , or 176 , or POL SCI 90	3		
	18		16
Sophomore Year			
First Semester	Credits	Second Semester	Credits
CHEM 221	4	CHEM 223	4

CHEM 226	1	CHEM 228	1
MATH 22	4	PHYSICS 25	4
PHYSICS 21	4	PHYSICS 26	1
PHYSICS 22	1	COMP-SCI 53 or 74 and 78	3
Electives	3	COMP SCI 74 & COMP SCI 78	3
		STAT 213	3
	17		16
Junior Year			
First Semester	Credits	Second Semester	Credits
CHEM 343	3	CHEM 151	4
CHEM 381	3	CHEM 241	3
CHEM 361	3	CHEM 242	1
ENGLISH 60	3	CHEM 384	3
Electives	4	CHEM 385	3
		CHEM 390	3
	16		17
Senior Year			
First Semester	Credits	Second Semester	Credits
CHEM 243	3	CHEM 237	3
CHEM 244	1	CHEM 238	1
CHEM 251	4	CHEM 328	3
CHEM ENG 349	3	Chemistry Electives	3
Electives	6	Electives	4
	17		14
Total Credits: 131			

Notes:

Grade Requirements: Students must complete a minimum of 131 credit hours for a Bachelor of Science-Chemistry degree. A minimum grade of "C" is required for each Chemistry course counted towards the degree.

ROTC: Basic ROTC may be taken in the freshman and sophomore years, but is not countable towards a degree.

[CHEM 390 Undergraduate Research:](#) The undergraduate research must be done in Polymers and Coatings Science.

Electives: There are twenty-six (26) hours of electives. Six (6) elective hours must be completed in the social sciences. Nine (9) elective hours are required in the humanities, exclusive of foreign language. Three of the humanities hours must be literature. **Three of the humanities hours are to be at the 100 level or higher.** Three (3) hours of elective may be chosen from Materials Science related courses numbered in the **3xxx- or 4xxx-series. 300-series.**

Students planning to attend graduate school are encouraged to incorporate additional higher level chemistry electives,

math, and foreign language, including a scientific literature course. Students planning to attend graduate school are encouraged to incorporate additional higher-level chemistry electives, math, and foreign language, including a scientific literature course. Recommended courses include but are not limited to the following:

- Biology, 2xxx, 3xxx and 4xxx level, especially [BIO SCI 211](#), or [BIO SCI 331](#) & [BIO SCI 332](#)
- [CH ENG 381](#)
- Math 2xxx, 3xxx and 4xxx level, especially [MATH 204](#), [MATH 208](#) & [MATH 325](#)
- Physics 2xxx, 3xxx and 4xxx level, especially [PHYSICS 208](#), [PHYSICS 221](#), [PHYSICS 323](#), [PHYSICS 377](#), or [PHYSICS 381](#)
- Statistics, 2xxx, 3xxx and 4xxx level, especially [STAT 343](#), [STAT 346](#) or [STAT 353](#)
- [CER ENG 291](#) and [CER ENG 292](#), or [GEO 275](#)
- Biology, 200 and 300 level, especially [BIO SCI 211](#) Math 200 and 300 level, especially [MATH 204](#), [MATH 208](#) and [MATH 325](#) Physics 200 and 300 level, especially [PHYSICS 208](#), [PHYSICS 221](#), [PHYSICS 323](#) & [PHYSICS 341](#) Statistics, 200 & 300 level, especially [STAT 343](#), [STAT 346](#) & [STAT 353](#) [CER ENG 391](#) and [CER ENG 392](#), or [GEOLOGY 381](#) A foreign language series.

Pre-medicine Emphasis Area

Freshman Year			
First Semester	Credits	Second Semester	Credits
CHEM 1	4	CHEM 3	3
CHEM 2	1	CHEM 8	2
CHEM 4	1	MATH 21	5
CHEM 11	1	BIO SCI 110	3
MATH 8	5	BIO SCI 112	2
HISTORY 112 , or 175 , or 176 , or POL SCI 90	3	ENGLISH 20	3
	15		18
Sophomore Year			
First Semester	Credits	Second Semester	Credits
CHEM 221	4	CHEM 223	4
CHEM 226	1	CHEM 228	1
MATH 22	4	PHYSICS 25	4
PHYSICS 21	4	PHYSICS 26	1
PHYSICS 22	1	COMP SCI 53 or 74 and 78	3
BIO SCI 211	3	COMP SCI 74 & COMP SCI 78	3
BIO SCI 212	1	STAT 213	3
	18		16
Junior Year			
First Semester	Credits	Second Semester	Credits
CHEM 343	3	CHEM 151	4
CHEM 361	3	CHEM 241	3

CHEM 362	2	CHEM 242	1
ENGLISH 60	3	CHEM 363	3
BIO SCI 241	5	BIO SCI 242	3
CHEM 310 or 390	1	Humanities Elective	3
	17		17
Senior Year			
First Semester	Credits	Second Semester	Credits
CHEM 243	3	CHEM 237	3
CHEM 244	1	CHEM 238	1
CHEM 251	4	CHEM 328	3
CHEM 310 or 390	1	Advanced Chemistry Electives	4
Social Sciences Elective	3	Social Sciences Elective	3
Literature Elective	3	Humanities Elective	3
	15		17
Total Credits: 133			

Notes:

Grade Requirements: Students must complete a minimum of 133 credit hours for the Bachelor of Science in Chemistry degree. A minimum grade of "C" is required for each Chemistry course counted towards the degree.

ROTC: Basic ROTC may be taken in the freshman and sophomore years, but is not countable towards a degree.

Chemistry Electives: The advanced Chemistry Elective is chosen from [CHEM 321](#), [CHEM 331](#), [CHEM 346](#), [CHEM 381](#), [CHEM 385](#).

Electives: At least three hours of the humanities or literature electives are to be at the 100 level or higher.

Justification for request

The changes update the B.S. program for the new four digit numbering system, including 'new' 4xxx level course designations and 5xxx and higher course specifications, and to correct for non-existent courses in other departments.

Supporting Documents

Course Reviewer Comments

woelkk (11/20/13 2:34 pm): Rollback: need to fix the CompSci courses

Program Change Request

Date Submitted: 10/30/13 9:47 am

Viewing: **CHEM-MI : Chemistry Minor**

File: 17.1

Last edit: 11/21/13 11:02 am

Changes proposed by: tschuman

Catalog Pages

Using this

Program

[Chemistry](#)

Start Term **Fall 2014**

Program Code CHEM-MI

Department Chemistry

Title

In Workflow

1. **RCHEMIST Chair**
2. **CCC Secretary**
3. **Sciences DSCC Chair**
4. **CCC Meeting Agenda**
5. **Campus Curricula Committee Chair**
6. **FS Meeting Agenda**
7. Faculty Senate Chair
8. Registrar
9. Peoplesoft

Approval Path

1. 11/20/13 2:33 pm
woelkk: Approved for RCHEMIST Chair
2. 11/21/13 11:02 am
lahne: Approved for CCC Secretary
3. 12/06/13 12:54 pm
tauritzd: Approved for Sciences DSCC Chair
4. 01/17/14 12:00 pm
lahne: Approved for CCC Meeting Agenda
5. 01/17/14 12:27 pm
tauritzd: Approved for Campus Curricula Committee Chair

Chemistry Minor

Program Requirements and Description

Minor in Chemistry

A minor in chemistry requires a minimum of 19 hours of chemistry course work selected in conjunction with a chemistry faculty advisor. The required courses are [CHEM 1](#), [CHEM 2](#), [CHEM 3](#), [CHEM 4](#), [CHEM 8](#), [CHEM 221](#) and either [CHEM 224](#) or [CHEM 226](#). Three additional hours of chemistry are to be selected from [CHEM 151](#), or other Chem **2000, 3000, 200** and **4000-level** ~~300-level~~ courses.

Justification for request

To update program for the four digit numbering system to include 'new' 4xxx course level

Supporting Documents

Course Reviewer Comments

Program Change Request

Date Submitted: 09/13/13 12:24 pm

Viewing: **ENGL-BA : English BA**

File: 48.1

Last edit: 01/17/14 12:21 pm

Changes proposed by: kswenson

Catalog Pages

Using this

Program

[English](#)

Start Term	Fall 2014
Program Code	ENGL-BA
Department	English and Technical Communication
Title	

In Workflow

1. **REGLISH Chair**
2. **CCC Secretary**
3. **Arts & Humanities DSCC Chair**
4. **CCC Meeting Agenda**
5. **Campus Curricula Committee Chair**
6. **FS Meeting Agenda**
7. Faculty Senate Chair
8. Registrar
9. Peoplesoft

Approval Path

1. 09/13/13 12:29 pm
kswenson:
Approved for
REGLISH Chair
2. 09/30/13 1:43 pm
lahne: Approved for
CCC Secretary
3. 09/30/13 2:29 pm
ivliyeva: Approved
for Arts &
Humanities DSCC
Chair
4. 11/07/13 1:21 pm
lahne: Rollback to
REGLISH Chair
for CCC Meeting
Agenda
5. 11/07/13 1:31 pm
kswenson:
Approved for
REGLISH Chair
6. 11/21/13 10:57 am
lahne: Approved for
CCC Secretary
7. 11/21/13 11:00 am
ivliyeva: Approved
for Arts &
Humanities DSCC

- Chair
8. 01/17/14 12:24 pm
lahne: Approved for
CCC Meeting
Agenda
9. 01/17/14 12:40 pm
tauritzd: Approved
for Campus
Curricula
Committee Chair

English BA

Program Requirements and Description

Bachelor of Arts English

The requirements for the English major are as follows:

1. ~~Prerequisites for the English major are ENGLISH 75, ENGLISH 80, ENGLISH 105, and ENGLISH 106.~~ **Prerequisites for the English major are ENGLISH 75, ENGLISH 80, ENGLISH 105, and ENGLISH 106.** Six ~~Six~~ of these hours will satisfy the General Education Humanities requirements ~~for the~~ **for the** Bachelor of Arts degree.
2. **ENGLISH 202 Critical Approaches to Literature.**
3. **Capstone course for major: ENGLISH 350 Texts and Contexts.**
4. **In addition to the requirements above, fifteen hours of course work at the 2000-level or above in departmental courses, twelve of which must be at the 3000 level or above.**

~~Twenty-four hours of English course work at the 200 and 300 level, including ENGLISH 202 Critical Approaches To Literature and ENGLISH 350 Texts And Contexts. Of these twenty-four hours a minimum of fifteen hours must be at the 300 level. Only nine hours at the 200 level may count towards fulfilling the major requirements.~~ Students are strongly recommended to work closely with their advisors in planning their major curriculum.

Bachelor of Arts (Emphasis Area in Secondary Education)

The student will fulfill the general requirements for the Bachelor of Arts degree, *except for foreign language and a minor*; the requirements for the English major (*emphasis in secondary education*); and the requirements for Missouri certification in the teaching of English. See Education. Contact the Missouri S&T English Department for advising. Students who do not complete certification requirements must complete regular requirements (foreign language and a minor) in order to receive a B.A. Students preparing for Teacher Certification should note that the requirements for the English major are as follows:

1. ENGLISH 75, ENGLISH 80, ENGLISH 105, ENGLISH 106.
2. **ENGLISH 202 Critical Approaches to Literature.**
3. **Capstone course for major: ENGLISH 350 Texts and Contexts.**
4. Fifteen hours of course work at the ~~2000~~ ~~200~~ or ~~3000~~ ~~300~~ level in English and American literature, including two courses in English Literature; and two American Literature courses, including literature for adolescents.
5. Six hours of linguistics.
6. ~~ENGLISH 202 Critical Approaches To Literature. Capstone course for major: ENGLISH 350.~~ Twelve hours of writing, including a

course in the teaching of writing. Six of these hours will also be satisfied by the General Education Composition requirement for the B.A. degree; three of these hours will also be satisfied by the capstone course.

7. A minimum of fifteen hours must be at the **3000 level or above**. ~~300-level~~.
-

Justification for
request

Updated in keeping with renumbering.

Supporting
Documents

Course Reviewer

Comments

lahne (11/07/13 1:21 pm): Rollback: At the 10/30/2013 CCC meeting, committee member asked for clarification to the program description and requirements.

Program Change Request

Date Submitted: 09/24/13 12:29 pm

Viewing: **GL&GPH-BS : Geology and Geophysics BS**

File: 64.1

Last edit: 01/17/14 12:57 pm

Changes proposed by: ikuenobe

Catalog Pages

Using this

Program

[Geology and Geophysics](#)

Start Term	Fall 2014
Program Code	GL&GPH-BS
Department	Geological Science and Engineering
Title	

In Workflow

1. **RGEOENG Chair**
2. **CCC Secretary**
3. **Sciences DSCC Chair**
4. **CCC Meeting Agenda**
5. **Campus Curricula Committee Chair**
6. **FS Meeting Agenda**
7. Faculty Senate Chair
8. Registrar
9. Peoplesoft

Approval Path

1. 10/30/13 2:37 pm
reflori: Approved for RGEOENG Chair
2. 11/21/13 10:57 am
lahne: Approved for CCC Secretary
3. 12/03/13 2:05 pm
sraper: Rollback to CCC Secretary for Engineering DSCC Chair
4. 12/03/13 2:11 pm
lahne: Approved for CCC Secretary
5. 12/13/13 4:44 pm
tauritzd: Approved for Sciences DSCC Chair
6. 01/17/14 12:50 pm
lahne: Approved for CCC Meeting Agenda
7. 01/17/14 12:57 pm
tauritzd: Approved for Campus Curricula Committee Chair

Geology and Geophysics BS

Program Requirements and Description

Bachelor of Science Geology and Geophysics

A minimum of **127** of ~~129~~ credit hours is required for a Bachelor of Science degree in Geology and **Geophysics**. **Students must average at least two grade points per credit hour Geophysics and must obtain a letter grade of "C" or better in all Geology and Geophysics courses. an average of at least two grade points per credit hour must be obtained.**

The ~~Geology and Geophysics curriculum requires nine semester hours in humanities, exclusive of a foreign language, and must include ENGLISH 60. The Geology~~ A minimum of six semester hours is required in social sciences and **Geophysics curriculum** must include **ENGLISH 20 and ENGLISH 60**, either ~~ECON 121~~ or **ECON 122**, either ~~ECON 122 and either HISTORY 112, HISTORY 175, HISTORY 176 or POL SCI 90, and nine elective hours in humanities/social sciences. POL SCI 90.~~ Six semester hours of course work are available to the student to choose course work that best fits their individual needs for completion of the degree. Specific requirements for the bachelor degree program are outlined in the sample program below

Freshman Year					
First Semester	Credits	Second Semester	Credits		
MATH 4	3	<u>GEOLOGY 52</u> ¹	3		
MATH 6 (or 2 hours free electives)	2	<u>GEOLOGY 54</u> ¹	1		
<u>GEOLOGY 51</u>	3	<u>MATH 8</u> ²	5		
<u>GEOLOGY 53</u>	1	Elective (Science & Eng) ³	3		
Free Elective ¹	4	Humanities/Social Science Elective	3		
<u>ENGLISH 20</u>	3				
<u>CHEM 1</u>	4				
<u>CHEM 2</u>	1				
<u>CHEM 4</u>	1				
	13		15		
Sophomore Year					
First Semester	Credits	Second Semester	Credits	Summer Semester	Credits
<u>GEOLOGY 113</u>	4	<u>GEOLOGY 130</u> ¹	4	<u>GEOLOGY 373</u>	3
GEOLOGY 338, or COMP SCI-53 and COMP SCI-71 and COMP SCI-77, or COMP SCI-53 and COMP SCI-73 and COMP SCI-77	3	<u>GEOLOGY 275</u>	3		

GEOPHYS 270	3	Hum/Sec-Sci Elective	3		
MATH 21²	5	ENGLISH 60 or 160	3		
COMP SCI 73 & COMP SCI 77 (or COMP SCI 74 & COMP SCI 78)	3	ECON 121 or 122	3		
		HISTORY 112 , or 175 , or 176 , or POL SCI 90	3		
	15		16		3
Junior Year					
First Semester	Credits	Second Semester	Credits	Summer Semester	Credits
GEOLOGY 220¹	4	GEOLOGY 223	3	GEOLOGY 374	3
PHYSICS 23⁴	4	Elective (Geo & Geop)⁴	3		
STAT 213 , or 215 , or 217 , or GEO ENG 315	3	GEOLOGY 224	1		
Elective (Geo & Geop) ⁵	3	PHYSICS 24⁴	4		
		Elective (Geo & Geop)⁵	6		
		Humanities/Social Sciences Elective	3		
		Free Elective¹	3		
	14		17		3
Senior Year					
First Semester	Credits	Second Semester	Credits		
GEOLOGY 310	1	GEOPHYS 381¹	3		
Humanities/Social Sciences Elective	3	GEOLOGY 344	3		
Elective (Science & Eng) ³	6	Elective (Science & Eng) ³	6		
Elective (Geo & Geop)⁵	6	Electives (Geo & Geop)⁴	5		
Elective (Geo & Geop)⁴	3	Free Elective⁶	3		
	16		15		
Total Credits: 127					

¹ Communications Emphasized (CE) courses

² Students may substitute [MATH 14](#) for [MATH 8](#); [MATH 15](#) for [MATH 22](#).

³ All Geology/Geophysics students must complete at least 15 hours of elective course work in science (which may include additional Geology/Geophysics courses), mathematics, and/or engineering, courses required for the basic program. 12 hours of this course work must be numbered 2000 or above.

⁴ Students may substitute [PHYSICS 21](#) and [PHYSICS 22](#) for [PHYSICS 23](#); [PHYSICS 25](#) and [PHYSICS 26](#) for [PHYSICS 24](#).

⁵ All Geology and Geophysics students must complete at least 15 hours of elective course work numbered 2000 or above in the Department of Geology and Geophysics, in addition to the required core curriculum.

⁶ **Free elective hours may be taken in any combination of credit hours (1, 2, 3, etc.) and can include any course offerings at the University.**

~~Core Curriculum Geochemistry Emphasis Area In addition, to complete degree requirements with an emphasis area in Groundwater and Environmental Geology students must complete 4 courses (12 hours minimum) to be selected from an approval list and with guidance from student's advisor.~~
~~General Geology Emphasis Area In addition to complete degree requirements with an emphasis area in General Geology students must complete 4 courses (12 hrs. minimum) to be selected from an approved list and with guidance from student's advisor.~~
Core Curriculum

Taken by all students in Geology & Geophysics.		
<u>GEOLOGY 51</u>	Physical And Environmental Geology	3
<u>GEOLOGY 53</u>	Physical and Environmental Geology Laboratory	1
<u>GEOLOGY 52</u>	Evolution Of The Earth	3
<u>GEOLOGY 54</u>	Evolution of the Earth Laboratory ⁵	1
<u>GEOLOGY 113</u>	Mineralogy And Crystallography	4
<u>GEOLOGY 130</u>	Igneous And Metamorphic Petrology	4
<u>GEOLOGY 220</u>	Structural Geology	4
<u>GEOLOGY 223</u>	Stratigraphy And Sedimentation	3
<u>GEOLOGY 224</u>	Stratigraphy Lab	1
<u>GEOPHYS 270</u>	Introduction to Geophysics	3
<u>GEOLOGY 275</u>	Introduction To Geochemistry	3
<u>GEOLOGY 310</u>	Seminar	1
<u>GEOLOGY 344</u>	Remote Sensing Technology	3
<u>GEOLOGY 373</u>	Field Geology	3
<u>GEOLOGY 374</u>	Advanced Field Geology	3
<u>GEOPHYS 381</u>	Global Tectonics	3
Total Credits		43

~~Geology Geophysics Emphasis Area Groundwater and Geophysics Focus Areas Environmental~~

The following courses are required:		
MATH 22	Calculus With Analytic Geometry III	4
GEOPHYS 286	Introduction To Geophysical Data Analysis	3

GEPHYS 320	Computational Geophysics	3
GEPHYS 377	Seismic Interpretation	3
Total Credits		0

Geochemistry

Students should complete at least 5 courses (15 hours minimum) from the list. Students may also choose additional courses to be selected from an approval list and with guidance from student's advisor.

GEOLOGY 234	Course GEOLOGY 234 Not Found	3
GEOLOGY 275	Introduction To Geochemistry	3
<u>GEOLOGY 294</u>	Metallic And Industrial Mineral Deposits	3
<u>GEOLOGY 330</u>	Granites And Rhyolites	4
<u>GEOLOGY 334</u>	Advanced Igneous and Metamorphic Petrology	4
<u>GEOLOGY 372</u>	Geological Field Studies	3
<u>GEOLOGY 375</u>	Applied Geochemistry	3
<u>GEOLOGY 376</u>	Aqueous Geochemistry	3
<u>GEOLOGY 378</u>	Isotope Geochemistry	3

General Geology

Students should complete at least 5 courses (15 hours minimum) from the list. Students may also choose additional courses to be selected from an approval list and with guidance from student's advisor.

<u>GEOLOGY 227</u>	Systematic Paleontology	3
GEOLOGY 275	Introduction To Geochemistry	3
GEOLOGY 234	Course GEOLOGY 234 Not Found	3
<u>GEOLOGY 294</u>	Metallic And Industrial Mineral Deposits	3
<u>GEOLOGY 248</u>	Fundamentals Of Geographic Information Systems	3
<u>GEOLOGY 320</u>	Advanced Structural Geology	3
<u>GEOLOGY 329</u>	Micropaleontology	3
<u>GEOLOGY 330</u>	Granites And Rhyolites	4
<u>GEOLOGY 334</u>	Advanced Igneous and Metamorphic Petrology	4
<u>GEOLOGY 340</u>	Petroleum Geology	3
<u>GEOLOGY 350</u>	Paleoclimatology and Paleoecology	3
<u>GEOLOGY 372</u>	Geological Field Studies	3
<u>GEO ENG 275</u>	Geomorphology And Terrain Analysis	3

Geophysics

Students must choose 1 math and 3 geophysics courses from the list. Students should also choose at least one additional course to be selected from an approved list and with guidance from student's advisor.

<u>MATH 22</u>	Calculus With Analytic Geometry III	4
<u>MATH 204</u>	Elementary Differential Equations	3
<u>MATH 208</u>	Linear Algebra I	3
<u>MATH 325</u>	Partial Differential Equations	3
<u>GEOPHYS 320</u>	Computational Geophysics	3
<u>GEOPHYS 377</u>	Seismic Interpretation	3
<u>GEOPHYS 336</u>	Geophysical Field Methods	3
<u>GEOLOGY 340</u>	Petroleum Geology	3
<u>GEOPHYS 382</u>	Environmental And Engineering Geophysics	3
<u>GEOPHYS 385</u>	Exploration And Development Seismology	3
<u>GEOPHYS 389</u>	Seismic Data Processing	3

Groundwater Emphasis Area In addition, to complete degree requirements with an emphasis area in Groundwater and Environmental Geochemistry

Students should complete at least 5 courses (15 hours minimum) from the list. Students may also choose additional courses to be selected from an approval list and with guidance from student's advisor.

<u>GEOLOGY 275</u>	Introduction To Geochemistry	3
<u>GEOLOGY 360</u>	Methods Of Karst Hydrogeology	3
<u>GEOLOGY 305</u>	Hydrogeology	3
<u>GEOLOGY 350</u>	Paleoclimatology and Paleoecology	3
<u>GEOLOGY 375</u>	Applied Geochemistry	3
<u>GEOLOGY 376</u>	Aqueous Geochemistry	3
<u>GEO ENG 335</u>	Environmental Geological Engineering	3
or <u>GEO ENG 334</u>	Subsurface Hydrology	
<u>GEOPHYS 382</u>	Environmental And Engineering Geophysics	3
<u>BIO SCI 151</u>	Introduction to Environmental Sciences	3
<u>ENV ENG 261</u>	Fundamentals of Environmental Engineering and Science	3
<u>ENV ENG 360</u>	Environmental Law And Regulations	3
<u>GEO ENG 331</u>	Subsurface Hydrology	3
<u>GEO ENG 337</u>	Geological Aspects Of Hazardous Waste Management	3

Petroleum Geology

Students should complete at least 5 courses (15 hours minimum) from the list. Students may also choose additional courses to be selected from an approval list and with guidance from student's advisor.

<u>GEOLOGY 227</u>	Systematic Paleontology	3
<u>GEOLOGY 275</u>	Introduction To Geochemistry	3
<u>GEOLOGY 324</u>	Advanced Stratigraphy And Basin Evolution	3

GEOLOGY 338	Computer Mapping In Geology	3
<u>GEOLOGY 329</u>	<u>Micropaleontology</u>	<u>3</u>
<u>GEOLOGY 332</u>	<u>Depositional Systems</u>	<u>3</u>
<u>GEOLOGY 340</u>	Petroleum Geology	3
GEOLOGY 385	Course GEOLOGY 385 Not Found	3
<u>GEOPHYS 385</u>	<u>Exploration And Development Seismology</u>	<u>3</u>
<u>PET ENG 232</u>	Well Logging I	3

~~Geology students must complete 4 courses (12 hrs. minimum) to be selected from an approval list and with guidance from student's advisor. Petroleum Geology Emphasis Area In addition, to complete degree requirements with an emphasis area in Petroleum Geology students must complete two courses (6 hours minimum) to be selected from an approval list and with guidance from student's advisor.~~

Justification for request

Several modifications have been made to the Bachelor of Science degree curriculum as follows:

1) reduced total credit hours from 129 to 127; 2) changed sequencing of some courses to reflect the semesters during which they are currently offered; 3) renamed emphasis areas "focus areas"; and 4) revised the list of courses in each focus area.

Supporting Documents

Course Reviewer Comments

sraper (12/03/13 2:05 pm): Rollback: should this be science DSCC? Also note 127 hours.

Program Change Request

Date Submitted: 09/27/13 9:09 am

Viewing: **PHYSIC-BS : Physics BS**

File: 115.1

Last edit: 01/17/14 12:53 pm

Changes proposed by: waddill

Catalog Pages

Using this

Program

[Physics](#)

Start Term **Fall 2014**

Program Code PHYSIC-BS

Department Physics

Title

In Workflow

1. **RPHYSICS Chair**
2. **CCC Secretary**
3. **Sciences DSCC Chair**
4. **CCC Meeting Agenda**
5. **Campus Curricula Committee Chair**
6. **FS Meeting Agenda**
7. Faculty Senate Chair
8. Registrar
9. Peoplesoft

Approval Path

1. 09/27/13 9:14 am
waddill: Approved for RPHYSICS Chair
2. 09/27/13 3:42 pm
lahne: Approved for CCC Secretary
3. 11/14/13 12:04 pm
lahne: Rollback to CCC Secretary for Sciences DSCC Chair
4. 11/18/13 12:40 pm
lahne: Approved for CCC Secretary
5. 11/18/13 1:00 pm
tauritzd: Approved for Sciences DSCC Chair
6. 01/17/14 12:54 pm
lahne: Approved for CCC Meeting Agenda
7. 01/17/14 12:58 pm
tauritzd: Approved for Campus Curricula Committee Chair

Physics BS

Program Requirements and Description

Bachelor of Science Physics

A minimum of 128 credit hours is required for a Bachelor of Science degree in Physics and an average of at least two grade points per credit hour must be obtained. These requirements for the B.S. degree are in addition to credit received for algebra, trigonometry, and basic ROTC.

The Physics curriculum requires twelve semester hours in humanities, exclusive of foreign language, and must include **ENGLISH 60** and **ENGLISH 60** or **ENGLISH 160**. A minimum of nine semester hours is required in social sciences, including either **HISTORY 175**, **HISTORY 176**, **HISTORY 112**, or **POL SCI 90**, **POL-SCI-90** or **POL-SCI-176**. Specific requirements for the bachelor degree are outlined in the sample program listed below

Freshman Year			
First Semester	Credits	Second Semester	Credits
CHEM 1	4	CHEM 3	3
CHEM 2	1	HISTORY 112 , or 175 , or 176 , or POL SCI 90	3
CHEM 4	1	MATH 21	5
ENGLISH 20	3	PHYSICS 21	4
MATH 8	5	PHYSICS 22	1
PHYSICS 1	1		
	15		16
Sophomore Year			
First Semester	Credits	Second Semester	Credits
ENGLISH 60	3	MATH 204	3
MATH 22	4	PHYSICS 207	3
PHYSICS 25	4	PHYSICS 212	3
PHYSICS 26	1	PHYSICS 208	3
COMP SCI 53 & COMP SCI 54 ⁴	4	Elective ¹	3
Elective ¹	3		
	19		15
Junior Year			
First Semester	Credits	Second Semester	Credits
PHYSICS 308	3	PHYSICS 221	3

PHYSICS 322	3	PHYSICS 332	3
PHYSICS 307	3	Math/Stat Elective ²	3
Math/Stat Elective ²	3	Electives ¹	6
Electives ¹	6		
	18		15
Senior Year			
First Semester	Credits	Second Semester	Credits
PHYSICS 321	3	PHYSICS 311	3
PHYSICS 361	3	Elective-Humanities (300 level) ¹	3
Physics Elective ³	3	Physics Elective ³	3
Electives ¹	6	Electives ¹	6
	15		15
Total Credits: 128			

Note: The minimum credit hours required for a Bachelor of Science in Physics is 128 hours. No more than two of the required physics and mathematics courses with a grade of "D" may be used to meet graduation requirements. Upon petition to and approval by the physics faculty, three semester hours of advanced ROTC (Military Science or Aerospace Credit Studies) credit can be counted as elective credit to meet requirements for graduation.

¹ Electives, in addition to the Math/Stat electives² and Physics electives³, shall include six hours of social studies and nine hours of humanities, at least three of which must be literature and at least three of which must be at the 3000 level or above not including Special Problems courses ([PHILOS 345](#) recommended). Nineteen hours of free electives may be used to develop an emphasis area. Eighteen hours of elective credit shall be in courses at the 3000 level or above.

² Six hours of mathematics or statistics beyond [MATH 204](#) are required. [MATH 208](#), [MATH 322](#), [MATH 325](#), or [MATH 351](#) are recommended.

³ In addition to the specific physics courses listed ([PHYSICS 307](#), [PHYSICS 308](#), [PHYSICS 311](#), [PHYSICS 321](#), [PHYSICS 322](#), [PHYSICS 332](#), and [PHYSICS 361](#)) two other physics 3000 level or higher courses are required.

⁴ **Alternatively COMP SCI 73 & COMP SCI 77, or COMP SCI 74 & COMP SCI 78; note that this will require one less credit hour than the option listed in the sample schedule.**

Students may develop an emphasis area in secondary education by satisfying the requirements for a Bachelor of Science in Physics and by completing the following additional requirements:

a. Take the education Professional Requirements courses:

EDUC 40	Perspectives In Education	2
EDUC 174	School Organization & Adm For Elementary & Secondary Teachers	2
EDUC 216	Teaching Reading In Content Area	3
EDUC 251	Historical Foundation Of American Education	3
EDUC 280	Teaching Methods And Skills In The Content Areas	6
EDUC 298	Student Teaching Seminar	1

PSYCH 155	Educational Psychology	3
PSYCH 208	Psychological & Educational Development Of The Adolescent	3
PSYCH 354	Psychology Of The Exceptional Child	3

Fifteen of these credit hours may be used to substitute for six hours of mathematics electives, six hours of physics electives, and three hours of computer science courses.

b. Take the education Clinical Experience courses:

EDUC 104	Teacher Field Experience	2
EDUC 164	Aiding Elementary, Middle And Secondary Schools	2
EDUC 299	Student Teaching	12

c. Take these additional courses:

SP&M S 85	Principles Of Speech	3
POL SCI 90	American Government	3
PSYCH 50	General Psychology	3
BIO SCI 110	General Biology	3
PHYSICS 6	Environmental Physics I	3
HISTORY 275	History Of Science	3
A 3 hour Art/Music/Theater elective		3

d. Complete the requirements for teacher certification listed in this catalog.

e. [PHYSICS 23](#) ~~PHYSICS-23~~ and [PHYSICS 24](#) may be substituted for:

PHYSICS 21	General Physics I	4
PHYSICS 22	General Physics Laboratory	1
PHYSICS 25	General Physics II	4
PHYSICS 26	General Physics Laboratory	1

[MATH 14](#) and [MATH 15](#) ~~MATH-15~~ may be substituted for:

MATH 8	Calculus With Analytic Geometry I	5
MATH 21	Calculus With Analytic Geometry II	5

Justification for
request

To update reflecting new course renumbering scheme.

Supporting

Documents

Course Reviewer

Comments

lahne (11/14/13 12:04 pm): Rollback: please adjust plan of study requirements.

Key: 115

Program Change Request

Date Submitted: 10/24/13 3:23 pm

Viewing: **PSYCH-BS : Psychology BS**

File: 193.1

Last edit: 01/17/14 12:59 pm

Changes proposed by: nstone

Catalog Pages

Using this

Program

[Psychology](#)

Start Term	Fall 2014
Program Code	PSYCH-BS
Department	Psychological Science
Title	

In Workflow

1. **RPSYCHOL Chair**
2. **CCC Secretary**
3. **Social Sciences DSCC Chair**
4. **CCC Meeting Agenda**
5. **Campus Curricula Committee Chair**
6. **FS Meeting Agenda**
7. Faculty Senate Chair
8. Registrar
9. Peoplesoft

Approval Path

1. 10/24/13 3:24 pm
nstone: Approved for RPSYCHOL Chair
2. 11/21/13 11:03 am
lahne: Approved for CCC Secretary
3. 11/21/13 6:43 pm
barryf: Approved for Social Sciences DSCC Chair
4. 01/17/14 1:00 pm
lahne: Approved for CCC Meeting Agenda
5. 01/17/14 1:04 pm
tauritzd: Approved for Campus Curricula Committee Chair

Psychology BS

Program Requirements and Description

Bachelor of Science Psychology

A minimum of 124 credit hours is required for a Bachelor of Science degree in Psychology and a cumulative grade point average of 2.0 must be obtained. These requirements for the B.S. degree are in addition to credit received for basic ROTC.

The Psychology Bachelor of Science curriculum requires six hours of English composition; 23 hours of math, science and computer science; and twelve semester hours in humanities. Specific requirements for the bachelor degree are outlined in the sample program listed below.

1. [ENGLISH 20](#) and [ENGLISH 60](#) (entering students will normally take [ENGLISH 20](#) either semester of the first year.) (6 hours)
2. A total of 23 hours in biological, physical, (chemistry, geology and geophysics, and physics), and mathematical (mathematics/statistics and computer science or information science & technology) sciences, to **include [COMP SCI 53](#) and [include ~~COMP SCI 53 and~~ \[COMP SCI 54\]\(#\); or \[COMP SCI 73\]\(#\) and \[COMP SCI 77\]\(#\); or \[COMP SCI 74\]\(#\) and \[COMP SCI 78\]\(#\); or ~~COMP SCI 73 and COMP SCI 77; or COMP SCI 74 and COMP SCI 78; or~~ \[IS&T 51\]\(#\)](#)** and at least one course taken in the biological and one in the physical sciences. Of the biological and physical science offering, at least one must be a laboratory course. Engineering courses may, at the discretion of the student's major advisor, also count toward this total requirement. (23 hours)
3. 12 hours in humanities and fine arts (literature, philosophy, art, music, or theater). Foreign language courses may count toward fulfilling this requirement. Courses used to satisfy this requirement must be taken in at least two humanities areas. (12 hours)
4. 12 hours in at least two social sciences fields outside the major area (economics or history or political science). A course in Modern Western Civilization ([HISTORY 112](#)), American History To 1877 ([HISTORY 175](#)) or American History Since 1877 ([HISTORY 176](#)), or American Government ([POL SCI 90](#)) must be taken to satisfy the requirement of the state of Missouri (the "Williams Law"), and this course may count toward fulfilling the social sciences requirement. (12 hours)
5. Minor: A minor will be selected from any discipline other than the major with the approval of the student's advisor. A total of at least 15 hours is required for the minor, but may include courses, which also satisfy other requirements. At least nine hours must be beyond the introductory level.
6. Basic ROTC may be elected in the freshman and sophomore years, but is not creditable toward a degree. Six credit hours of advanced ROTC may be credited toward a degree.
7. Elective Credits: In consultation with his/her advisor, each student will elect sufficient additional courses to complete a minimum of 124 credit hours which may include [MATH 6](#) ~~MATH 2 or MATH 4~~ and **one of [MATH 2](#) or [MATH 4](#) . ~~MATH 6~~**.
8. Psychology Requirements:
 - a. Introduction to Psychology ([PSYCH 10](#)), General Psychology ([PSYCH 50](#)), Research Methods ([PSYCH 140](#)) and Capstone course ([PSYCH 302](#), [PSYCH 310](#), [PSYCH 350](#), [PSYCH 375](#), [PSYCH 377](#), ~~[PSYCH 375](#), [PSYCH 377](#), [PSYCH 380](#)~~, or [PSYCH 390](#), 3 hours credit).
 - b. Three additional courses from each of the following two areas of Psychology:
 - i. Sensation & Perception, Cognitive, Learning, Neuroscience, Developmental, Abnormal, Social, or Personality
 - ii. Educational, Adolescent, Human-Computer Interaction, Industrial, Human Factors, Clinical, Group Dynamics, or Organizational
 - c. Electives from Psychology to complete a requirement of 34 hours.
 - d. A cumulative grade point average of 2.0 must be earned in all course work taken in the major field. Upper class (**3000-level** ~~(200- and above) 300-level~~) courses completed with grades of "D" may not be included in the major field without the approval of the advisor and the chair of the department concerned.

Emphasis Areas

Note: The following areas identify courses from which a student may opt to develop an emphasis area. It is not required that students obtain an emphasis specialty within Psychology.

Human Resources/Personnel		
PSYCH 307	Industrial Psychology	3
PSYCH 308	Social Psychology	3
PSYCH 372	Group Dynamics	3
PSYCH 374	Organizational Psychology	3
Human Services		
PSYCH 208	Psychological & Educational Development Of The Adolescent	3
or PSYCH 250	Developmental Psychology	
PSYCH 362	Abnormal Psychology	3
PSYCH 360	Personality Theory	3
PSYCH 368	Clinical Psychology	3
Cognitive Neuroscience		
PSYCH 340	Sensation and Perception	3
PSYCH 240	Theories Of Learning	3
or PSYCH 362	Abnormal Psychology	
PSYCH 305	Cognitive Psychology	3
PSYCH 330	Neuroscience	3
Usability of Technology		
PSYCH 155	Educational Psychology	3
PSYCH 211	Web Design And Development	3
PSYCH 311	Human Factors	3
PSYCH 314	Human-Computer Interaction	3
Psychology of Leadership		
PSYCH 308	Social Psychology	3
or PSYCH 378	Social Influence: Science and Practice	
PSYCH 316	Psychology of Leadership in Organizations	3
PSYCH 350	Psychology of Women	3
or PSYCH 372	Group Dynamics	
PSYCH 374	Organizational Psychology	3

Bachelor of Science Psychology (Secondary Education Emphasis Area)

You may earn a B.S. Degree in Psychology from Missouri S&T and certification to teach at the secondary level in the schools of Missouri with the Secondary Education emphasis area program. This program can be completed in four academic years and student teaching is arranged with public schools within 30 miles of the Rolla campus.

Students interested in this emphasis area should consult with the advisor for the Secondary Education Emphasis Area in the Department of Psychological Science.

In order to successfully complete this emphasis area, students must have at least 22 on the ACT, maintain a cumulative GPA of at least 2.5, and attain at least a 2.5 GPA in all Psychology courses. Current Missouri S&T or transfer students who wish to pursue this emphasis area must meet both of these GPA requirements to be accepted into the program. Students must also meet all requirements listed under the Teacher Education Program in this catalog. Students who do not meet all the teacher certification requirements will not be eligible for the Secondary Education Emphasis Area, even if they have completed all course work.

A degree in this emphasis area requires 136 credit hours. The required courses are provided below.

Communications Skills: 9 semester hours		
ENGLISH 20	Exposition And Argumentation	3
ENGLISH 60	Writing And Research	3
SP&M S 85	Principles Of Speech	3
Humanities: 12 semester hours		
One must be in Art, Music, or Theatre		3
One must be in Philosophy		3
One must be in Literature		3
One additional humanities from the above course groups, Foreign Language, or Etymology		3-4
Social Sciences: 18 semester hours		
HISTORY 175	American History To 1877	3
or HISTORY 176	American History Since 1877	
POL SCI 90	American Government	3
POL SCI 237	Contemporary Political Thought	3
or POL SCI 290	American Political Parties	
or POL SCI 315	Principles Of Public Policy	
or POL SCI 316	The American Presidency	
PSYCH 50	General Psychology	3
ECON 121	Principles Of Microeconomics	3
or ECON 122	Principles Of Macroeconomics	
Geography		3
Natural Sciences/Mathematics: 21 semester hours		
Physics, Chemistry or Geology		3-4
Mathematics		3
BIO SCI 110	General Biology	3
STAT 115	Statistics For The Social Sciences I	3
COMP SCI 53 & COMP SCI 54	Introduction To Programming and Introduction To Programming Laboratory	3-4
or COMP SCI 73 & COMP SCI 77	Basic Scientific Programming and Computer Programming Laboratory	

or COMP SCI 74 & COMP SCI 78	Introduction To Programming Methodology and Programming Methodology Laboratory	
5-6 additional hours of Math &/or Science courses		5-6
Professional Requirements: 26 semester hours		
EDUC 40	Perspectives In Education	2
EDUC 174	School Organization & Adm For Elementary & Secondary Teachers	2
EDUC 216	Teaching Reading In Content Area	3
EDUC 251	Historical Foundation Of American Education	3
EDUC 280	Teaching Methods And Skills In The Content Areas	6
EDUC 298	Student Teaching Seminar	1
PSYCH 155	Educational Psychology	3
PSYCH 208	Psychological & Educational Development Of The Adolescent	3
PSYCH 354	Psychology Of The Exceptional Child	3
Clinical Experience: 16 semester hours		
EDUC 104	Teacher Field Experience	2
EDUC 164	Aiding Elementary, Middle And Secondary Schools	2
EDUC 299	Student Teaching	12
Psychology Degree Requirements: 17 semester hours		
PSYCH 10	Introduction to Psychology	1
PSYCH 140	Research Methods	4
PSYCH 240	Theories Of Learning	3
PSYCH 250	Developmental Psychology	3
PSYCH 362	Abnormal Psychology	3
or PSYCH 360	Personality Theory	
PSYCH 308	Social Psychology	3
Certification: 17 semester hours		
9 hours of American History		
HISTORY 341	Colonial America	
HISTORY 342	Revolutionary America, 1754-1789	
HISTORY 343	Age Of Jefferson And Jackson	
HISTORY 344	Civil War And Reconstruction	
HISTORY 347	Course HISTORY 347 Not Found	
HISTORY 348	Recent United States History	
HISTORY 351	Course HISTORY 351 Not Found	
HISTORY 353	History Of The Old South	
HISTORY 354	History Of The Modern South	

HISTORY 355	Course HISTORY 355 Not Found
HISTORY 357	History of the American West
HISTORY 358	Course HISTORY 358 Not Found
HISTORY 360	Course HISTORY 360 Not Found
HISTORY 370	History Of Baseball
HISTORY 380	20Th Century Americans In Combat
HISTORY 382	The United States in Vietnam
HISTORY 383	U.S. Diplomatic History to World War II
HISTORY 385	Course HISTORY 385 Not Found
8 hours of World History	
HISTORY 111	Early Western Civilization
HISTORY 112	Modern Western Civilization
HISTORY 220	Making Of Modern Britain
HISTORY 222	The Making Of Modern France
HISTORY 224	Making Of Modern Russia
HISTORY 225	European Diplomatic History 1814 - Present
HISTORY 226	Modern East Asia
HISTORY 321	Ancient Greece
HISTORY 323	Medieval History I
HISTORY 324	Medieval History II
HISTORY 325	History Of Renaissance Thought
HISTORY 327	Europe In The Age Of The French Revolution And Napoleon
HISTORY 328	Foundations Of Contemporary Europe 1815-1914
HISTORY 329	Contemporary Europe

Justification for
request

Need to remove the History courses that are no longer active.

Supporting
Documents

Course Reviewer
Comments

CC File # 8475-2013-Min Eng - 407-32

Effective Year: 2014 Effective Term: Summer Fall Spring

Course Change Form (CC)

This form is for creating or modifying permanent courses.

Course Changes (Check all changes.)

New Course Course Deletion Credit Hours Prerequisites
Course Title Catalog Description Course Number Co-listing

Course Information (Sections 1-9 must be completed. Leave "Proposed" items blank if no change is being made.)

1. Department: **Mining and Nuclear Engineering** *min eng 6632*

2. Discipline and Course Number: Present: ~~MinE 407~~ Proposed:

3. Course Title: Present: **Theory of High Explosives**

Proposed:

Abbreviated Course Title (24 Spaces or Less. Only needed for New Courses or Title Changes.):

4. Catalog Description (360 character spaces or less.)

Present:

Proposed:

5. If course requires field trip check box:

6. Credit Hours: Present: Lecture **3.0** Lab *0* Total *3.0*

Proposed: Lecture Lab Total

7. Prerequisites:

Present: **Successful background check and Graduate Standing.** ~~(Co-listed with Exp Eng 407)~~

Proposed: **Graduate Standing.** ~~(Co-listed with Exp Eng 407)~~

8. Required for Majors: Elective for Majors:

9. Justification: **Background check not required for this class. No explosives will be handled**

10. Semesters previously offered as an experimental course (101, 201, 301, 401):

11. List all co-listed courses, initialed by Dept. Chair, if signature does not appear below.

- 1) *Exp Eng 407* 3)
- 2) *6212* 4)
- 5)
- 6)

Recommended by Department: _____
(Chair signature)

Date: *06/06/13*

Recommended by DSCC: _____
(Chair signature)

Date: *6/26/13*

Approved by Curricula Committee: _____
(Chair signature)

Date: *1/17/2014*

Approved by Faculty Senate: _____
(Chair signature)

Date: _____

Effective Year: 201⁴
Term: Summer Fall Spring

CC File # 8476-2013-Elon-350-10

Course Change Form (CC)

This form is for creating or modifying permanent courses.

Course Changes (Check all changes.)

New Course Course Deletion Credit Hours Prerequisites
Course Title Catalog Description Course Number Co-listing

Course Information (1-9 Must Be Completed. Leave "Proposed" items blank if no change is being made.)

1. Department: Economics

2. Discipline and Course Number: Present :

Proposed: Econ ~~345~~ ~~350~~ 4643

3. Course Title: Present:

Proposed: Ethical Problems in a Global Environment

Abbreviated Course Title: Ethical Probs Global Env

(24 Spaces or Less. Only needed for New Courses or Title Changes.)

4. Catalog Description (300 Character Spaces or Less.)

Present:

Proposed: Focuses on the international dimension of ethics including corporate responsibility from economic, social, and environmental perspectives. It address^{es} the ethical challenges of decision making, stakeholder engagement, and governance at micro- (personal), meso- (org), and macro-levels (systems), LEVELS.

5. If course requires field trip check box:

6. Credit Hours: Present: Lecture: Lab: Total:

Proposed: Lecture: 3 Lab: 0 Total: 3

7. Prerequisites:

Present:

Proposed: Senior or graduate standing.

8. Required for Majors: Elective for Majors:

9. Justification: Taught as BUS 301-International Ethical Problems in International Business, SS 12 (6 Distance and 15 in-class students)/ECON 301-Ethical Problems in a Global Environment, SS 13 (3 Distance and 13 in-class students). This course was also taught last summer as part of a study abroad experience in China is an elective for a minor (Global Sustainable Economics) and a graduate certificate.

10. Semesters

previously offered as an experimental course (101, 201, 301, 401): SS 12, SS 13

11. List all co-listed courses, initialed by Dept. Chair, if signature does not appear below.

1) 2) 3)

4) 5) 6)

Recommended by Department

Greg Gilles
(Chair signature)

Date: 6/14/13

Recommended by Discipline Specific Curricula Committee

Barry Thompson
(Chair signature)

Date: 7/17/13

Approved by Curricula Committee:

David Gault
(Chair signature)

Date: 1/17/2014

Approved by Faculty Senate:

(Chair signature)

Date: _____

CC File # 8477-2013-Exp Eng-305-32

Effective Year: 2014 Effective Term: Summer Fall Spring

Course Change Form (CC)

This form is for creating or modifying permanent courses.

Course Changes (Check all changes.)

New Course Course Deletion Credit Hours Prerequisites
Course Title Catalog Description Course Number Co-listing

Course Information (Sections 1-9 must be completed. Leave "Proposed" items blank if no change is being made.)

1. Department: **Mining and Nuclear Engineering** *Exp Eng 5112*

2. Discipline and Course Number: Present: **Exp Eng 305** Proposed:

3. Course Title: Present: **Explosives Handling and Safety**
Proposed:

Abbreviated Course Title (24 Spaces or Less. Only needed for New Courses or Title Changes.):

4. Catalog Description (360 character spaces or less.)

Present:

Proposed:

5. If course requires field trip check box:

6. Credit Hours: Present: Lecture **3.0** Lab **0** Total **3**
Proposed: Lecture Lab Total

7. Prerequisites:

Present: **Min Eng 151, Min Eng 307, Successful background check. (~~Co-listed with Min Eng 305~~)**

Proposed: ~~Co-listed with Min Eng 305~~ *Min Eng 307 5612*

8. Required for Majors: Elective for Majors:

9. Justification: **Background check not required for this class. No explosives will be handled**

10. Semesters previously offered as an experimental course (101, 201, 301, 401):

11. List all co-listed courses, initialed by Dept. Chair, if signature does not appear below.

- 1) 3) 5)
- 2) 4) 6)

Recommended by Department *[Signature]* Date: 06/06/13
(Chair signature)

Recommended by DSCC *[Signature]* Date: 6/26/13
(Chair signature)

Approved by Curricula Committee: *[Signature]* Date: 1/17/2014
(Chair signature)

Approved by Faculty Senate: _____ Date: _____
(Chair signature)

Effective Year: 2014
Term: Summer Fall Spring

CC File # 8479-2013-EnvEng-265-32

Course Change Form (CC)

This form is for creating or modifying permanent courses.

Course Changes (Check all changes.)

New Course Course Deletion Credit Hours Prerequisites
Course Title Catalog Description Course Number Co-listing

Course Information (1-9 Must Be Completed. Leave "Proposed" items blank if no change is being made.)

1. Department: Civil, Arch., Env.
2. Discipline and Course Number: Present: EnvE ~~265~~ ^{NE 3615} Proposed:
3. Course Title: Present: Water And Wastewater Engineering
Proposed:

Abbreviated Course Title:
(24 Spaces or Less. Only needed for New Courses or Title Changes.)

4. Catalog Description (300 Character Spaces or Less.)

Present: A study of the engineering design principles dealing with the quantity, quality and treatment of water, and the quantity, characteristics, treatment and disposal of wastewater.

Proposed:

5. If course requires field trip check box:

6. Credit Hours: Present: Lecture: 3 Lab: 0 Total: 3
Proposed: Lecture: Lab: Total:

7. Prerequisites:
Present: Civ Eng 230 with grade of "C" or better, Civ Eng 261

Proposed: Civ Eng ~~261~~ 2601

8. Required for Majors: Elective for Majors:

9. Justification: Fluids and piping (CE 230 content) are not a significant portion of CE 265.

10. Semesters previously offered as an experimental course (101, 201, 301, 401):

11. List all co-listed courses, initialed by Dept. Chair, if signature does not appear below.

1) CE ~~265~~ 2) 3)
4) 2615 5)

Recommended by Department [Signature]
(Chair signature)

Date: 5/15/13

Recommended by Discipline Specific Curricula Committee [Signature]
(Chair signature)

Date: 5/25/13

Approved by Curricula Committee: [Signature]
(Chair signature)

Date: 1/17/2014

Approved by Faculty Senate: _____
(Chair signature)

Date: _____

(Revised 1/29/09)

Effective Year: 2014
Term: Summer Fall Spring

CC File # *8480-2013-Philos-*
254-10

Course Change Form (CC)

This form is for creating or modifying permanent courses.

Course Changes (Check all changes.)

New Course Course Deletion Credit Hours Prerequisites
Course Title Catalog Description Course Number Co-listing

Course Information (1-9 Must Be Completed. Leave "Proposed" items blank if no change is being made.)

1. Department: Arts, Languages, and Philosophy
2. Discipline and Course Number: Present: Philosophy 203 Proposed: Philosophy ~~254~~
3. Course Title: Present: Symbolic Logic in Argumentation Proposed: *3254*

Abbreviated Course Title: Symbolic Logic
(24 Spaces or Less. Only needed for New Courses or Title Changes.)

4. Catalog Description (300 Character Spaces or Less.)

Present: An introduction to sentential and predicate logic with an emphasis on the latter. It will include metatheoretic discussions of both syntax and semantics with a focus on various techniques used to examine logical relationships within an artificial language.

Proposed:

5. If course requires field trip check box:

6. Credit Hours: Present: Lecture: 3 Lab: Total: 3
Proposed: Lecture: Lab: Total:

7. Prerequisites:

Present: None

Proposed: Any introductory ^{1000-LEVEL} (below 100) philosophy course. (Philosophy 15 is recommended.)

8. Required for Majors: Elective for Majors:

9. Justification: Students in this course will: (1) acquire an understanding of an artificial language that is governed with mathematically precise rules, (2) learn many important logical concepts, including meta-theoretical ones, and (3) learn various methods of exposing logical relationships between sentences, including truth tables, models, and proofs. *Philos 1115*

10. Semesters previously offered as an experimental course (101, 201, 301, 401): Spring 2012, Spring 2013

11. List all co-listed courses, initiated by Dept. Chair, if signature does not appear below.

- 1) 2) 3)
- 4) 5) 6)

Recommended by Department *[Signature]*
(Chair signature)
Recommended by Discipline Specific Curricula Committee *[Signature]*
(Chair signature)
Approved by Curricula Committee: _____
(Chair signature)
Approved by Faculty Senate: _____
(Chair signature)

Date: *4/27/2013*
Date: *5/27/20*
Date: _____
Date: _____

Course Inventory Change Request

New Experimental Course Proposal

Date Submitted: 10/21/13 4:17 pm

Viewing: **ART 201.TBD : Topics in Visual Culture and Aesthetics**

File: 3990

Last edit: 12/05/13 9:22 am

Changes proposed by: ivliyeva

Requested	Spring 2014
Effective Change Date	
Department	Arts, Languages, & Philosophy
Discipline	Art (ART)
Course Number	201
Topic ID	TBD
Title	

In Workflow

1. RPHILOSO Chair
2. CCC Secretary
3. Arts & Humanities DSCC Chair
4. CCC Meeting Agenda
5. Campus Curricula Committee Chair
6. Registrar
7. Peoplesoft

Approval Path

1. 12/03/13 12:12 pm
lance: Approved for RPHILOSO Chair
2. 12/05/13 9:22 am
lahne: Approved for CCC Secretary
3. 12/05/13 9:36 am
ivliyeva: Approved for Arts & Humanities DSCC Chair
4. 01/17/14 12:04 pm

lahne: Approved
for CCC Meeting
Agenda

5. 01/17/14 12:29
pm

tauritzd:
Approved for
Campus Curricula
Committee Chair

Topics in Visual Culture and Aesthetics

Abbreviated Course Title Visual Culture/Aesthetic

Instructors Andrew M. Tohline

Catalog

Description

An exploration of contemporary visual culture and aesthetics topics, including inquiries into the role of technology and copyright in art and media, representations of gender and identity in advertising and art, questions of taste, and the constantly-shifting definition of art. An art and philosophy class for people who like ideas and the occasional movie.

Prerequisites

None.

Field Trip

Statement

Credit Hours	LEC: 3.0	LAB: 0.0	IND: 0.0	RSD: 0.0
Total: 3.0				

Justification for

new course:

Department requested.

Semester(s)
previously taught

Co-Listed

Courses:

PHILOS 201 - Special Topics

Course Reviewer

Comments

Key: 3990

Course Inventory Change Request

New Experimental Course Proposal

Date Submitted: 08/29/13 4:25 pm

Viewing: **CHEM 301.TBD : Organometallics**

File: 4006

Last edit: 12/12/13 2:25 pm

Changes proposed by: pericles

Requested	Spring 2014
Effective Change Date	
Department	Chemistry
Discipline	Chemistry (CHEM)
Course Number	301
Topic ID	TBD
Title	

In Workflow

1. **RCHEMIST Chair**
2. **CCC Secretary**
3. **Sciences DSCC Chair**
4. **CCC Meeting Agenda**
5. **Campus Curricula Committee Chair**
6. **Registrar**
7. Peoplesoft

Approval Path

1. 11/20/13 2:27 pm
woelkk: Approved for RCHEMIST Chair
2. 11/21/13 10:58 am
lahne: Approved for CCC Secretary
3. 12/06/13 12:49 pm
tauritzd: Approved for Sciences DSCC Chair
4. 01/17/14 12:06 pm

lahne: Approved
for CCC Meeting
Agenda

5. 01/17/14 12:29
pm

tauritzd:
Approved for
Campus Curricula
Committee Chair

Organometallics

Abbreviated Course Title Organometallics

Instructors Pericles Stavropoulos

Catalog

Description

The course concentrates on the use of transition metals in organic synthesis, with particular emphasis on catalytic reactions and issues of stereoselectivity.

Prerequisites

Chem 232

Field Trip

Statement

Credit Hours	LEC: 3	LAB: 0	IND: 0	RSD: 0
Total: 3				

Justification for new course:

The course will discuss aspects of Inorganic/Organic Chemistry which are vital to the synthetic chemist and can only be tangentially covered in other inorganic or organic chemistry courses.

Semester(s)

previously taught

none

Co-Listed

Courses:

Course Reviewer

Comments

Key: 4006

Course Inventory Change Request

New Experimental Course Proposal

Date Submitted: 11/01/13 2:34 pm

Viewing: **BIO SCI 301.TBD : Experimental**

Research Design

File: 4013

Last edit: 12/13/13 8:23 am

Changes proposed by: shannonk

Requested	Summer 2014
Effective Change Date	
Department	Biological Sciences
Discipline	Biological Sciences (BIO SCI)
Course Number	301
Topic ID	TBD
Title	

In Workflow

1. **RBIOLSCI Chair**
2. **CCC Secretary**
3. **Sciences DSCC Chair**
4. **CCC Meeting Agenda**
5. **Campus Curricula Committee Chair**
6. **Registrar**
7. Peoplesoft

Approval Path

1. 11/01/13 2:36 pm
aronstam:
Approved for
RBIOLSCI Chair
2. 11/21/13 10:55 am
lahne: Rollback to
RBIOLSCI Chair
for CCC Secretary
3. 11/21/13 12:15 pm
aronstam:
Approved for
RBIOLSCI Chair
4. 11/21/13 12:29 pm

lahne: Approved
for CCC Secretary

5. 12/06/13 12:48
pm

tauritzd:
Approved for
Sciences DSCC
Chair

6. 01/17/14 12:08
pm

lahne: Approved
for CCC Meeting
Agenda

7. 01/17/14 12:30
pm

tauritzd:
Approved for
Campus Curricula
Committee Chair

Experimental Research Design

Abbreviated	Research Design
Course Title	
Instructors	staff

Catalog

Description

The course is designed to develop students' abilities to design, execute and communicate research projects. Students will be introduced to the advantages and limitations of different model organisms and experimental systems. The course will address problems in formulating hypotheses, conducting and analyzing research, and critically evaluating results.

Prerequisites

BIO SCI 110 or 111

Field Trip
Statement

Credit Hours LEC: 1 LAB: 2 IND: 0 RSD: 0
Total: 3

Justification for
new course:

Will provide structured environment for summer undergraduate research, with students receiving formalized instruction in research design, and opportunities to share research struggles and successes with professors and fellow students.

Semester(s)
previously taught

Co-Listed
Courses:

Course Reviewer
Comments

lahne (11/01/13 2:32 pm): Rollback: Campus will still be using 3-digit numbers in Summer 2014. Please resubmit using 3-digit course numbers for the course and prerequisite courses.

lahne (11/21/13 10:55 am): Rollback: Please edit the credit hours.

Key: 4013

Course Inventory Change Request

New Experimental Course Proposal

Date Submitted: 10/21/13 4:16 pm

Viewing: **ART 201.TBD : Exploring Digital Art**

File: 4014

Last edit: 10/21/13 4:16 pm

Changes proposed by: ivliyeva

Requested Spring 2014

Effective Change

Date

Department Arts, Languages, & Philosophy

Discipline Art (ART)

Course Number 201

Topic ID TBD

Title

In Workflow

1. **RPHILOSO Chair**
2. **CCC Secretary**
3. **Arts & Humanities DSCC Chair**
4. **CCC Meeting Agenda**
5. **Campus Curricula Committee Chair**
6. **Registrar**
7. Peoplesoft

Approval Path

1. 12/03/13 12:12 pm
lance: Approved for RPHILOSO Chair
2. 12/05/13 9:23 am
lahne: Approved for CCC Secretary
3. 12/05/13 9:36 am
ivliyeva: Approved for Arts & Humanities DSCC Chair
4. 01/17/14 12:09 pm

lahne: Approved
for CCC Meeting
Agenda

5. 01/17/14 12:31
pm

tauritzd:

Approved for
Campus Curricula
Committee Chair

Exploring Digital Art

Abbreviated Course Title Exploring Digital Art

Course Title

Instructors Lucille Myers

Catalog

Description

This course is an exploration of digital art as a medium for making art as well as understanding visual culture from the past, present, and ideas for the future. A multidisciplinary approach will combine digital arts, design thinking, and humanities in a creative and scholarly atmosphere.

Prerequisites

None

Field Trip

Statement

Credit Hours LEC: 1.5 LAB: 1.5 IND: 0 RSD: 0

Total: 3

Justification for

new course:

None

Semester(s)

previously taught

Co-Listed

Courses:

Course Reviewer

Comments

Key: 4014

Course Inventory Change Request

New Experimental Course Proposal

Date Submitted: 10/29/13 2:14 pm

Viewing: **BIO SCI 201.TBD : Cave Biology**

File: 4015

Last edit: 12/13/13 8:35 am

Changes proposed by: shannonk

Requested	Summer 2014
Effective Change	
Date	
Department	Biological Sciences
Discipline	Biological Sciences (BIO SCI)
Course Number	201
Topic ID	TBD
Title	

In Workflow

1. **RBIOLSCI Chair**
2. **CCC Secretary**
3. **Sciences DSCC Chair**
4. **CCC Meeting Agenda**
5. **Campus Curricula Committee Chair**
6. **Registrar**
7. Peoplesoft

Approval Path

1. 10/29/13 2:50 pm
aronstam:
Approved for
RBIOLSCI Chair
2. 11/01/13 2:30 pm
lahne: Approved
for CCC Secretary
3. 12/06/13 12:42
pm
tauritzd:
Approved for
Sciences DSCC
Chair
4. 01/17/14 12:09
pm
lahne: Approved

for CCC Meeting
 Agenda
 5. 01/17/14 12:32
 pm
 tauritzd:
 Approved for
 Campus Curricula
 Committee Chair

Cave Biology

Abbreviated Course Title Cave Biology

Instructors staff

Catalog

Description

In Cave Biology we will study cave organisms and cave ecosystems. We will cover such topics as growth of speleothems, caves as a natural laboratory, behavior of cave animals, and regressive characteristics of cave species. We will investigate the relationship between Karst topography (caves, springs, sinkholes) and underground water contamination.

Prerequisites

Any geology, environmental engineering, or biology class except Bio Sci 102

Field Trip

Statement

This is a one week class meeting each day from 9-5. Trips will be arranged to local caves, there is no cost.

Credit Hours	LEC: 1	LAB: 1	IND: 0	RSD: 0
Total: 2				

Justification for

new course:

Cave Biology is an opportunity for students to learn about an important natural feature of Missouri's ecology

Semester(s)
previously taught
Summer 2013

Co-Listed
Courses:

Course Reviewer
Comments

Key: 4015

Course Inventory Change Request

New Experimental Course Proposal

Date Submitted: 11/10/13 5:22 pm

Viewing: **BIO SCI 301.TBD : Biology of Aging**

File: 4017

Last edit: 01/17/14 12:10 pm

Changes proposed by: houch

Requested Fall 2014

Effective Change

Date

Department Biological Sciences

Discipline Biological Sciences (BIO SCI)

Course Number 301

Topic ID TBD

Title

In Workflow

1. **RBIOLSCI Chair**
2. **CCC Secretary**
3. **Sciences DSCC
Chair**
4. **CCC Meeting
Agenda**
5. **Campus Curricula
Committee Chair**
6. **Registrar**
7. Peoplesoft

Approval Path

1. 11/10/13 7:20 pm
aronstam:
Approved for
RBIOLSCI Chair
2. 11/21/13 10:54
am
lahne: Approved
for CCC Secretary
3. 12/06/13 12:45
pm
tauritzd:
Approved for
Sciences DSCC
Chair
4. 01/17/14 12:10
pm

lahne: Approved
for CCC Meeting
Agenda

5. 01/17/14 12:32
pm

tauritzd:
Approved for
Campus Curricula
Committee Chair

Biology of Aging

Abbreviated Course Title	Biology of Aging
Instructors	Chen Hou

Catalog

Description

We will discuss the proximate and ultimate mechanisms of aging, and review a few leading theories of aging with the emphases on oxidative stress and life history tradeoffs. We will take the comparative approach to study aging across species, and the interventions that extend animals' lifespan, and explore why they may or may not work on humans.

Prerequisites

Bio Sci 211

Field Trip

Statement

Credit Hours	LEC: 3	LAB: 0	IND: 0	RSD: 0
Total: 3				

Justification for

new course:

Requested by students

Semester(s)

previously taught

N/A

Co-Listed

Courses:

Course Reviewer

Comments

Key: 4017

Course Inventory Change Request

New Experimental Course Proposal

Date Submitted: 12/05/13 9:20 am

Viewing: **CHEM 401.TBD : Neurochemistry with Clinical Correlations**

File: 4019

Last edit: 12/13/13 4:18 pm

Changes proposed by: lahne

Requested	Spring 2014
Effective Change Date	
Department	Chemistry
Discipline	Chemistry (CHEM)
Course Number	401
Topic ID	TBD
Title	

In Workflow

1. **RCHEMIST Chair**
2. **CCC Secretary**
3. **Sciences DSCC Chair**
4. **Pending CCC Agenda post**
5. **CCC Meeting Agenda**
6. **Campus Curricula Committee Chair**
7. **Registrar**
8. Peoplesoft

Approval Path

1. 12/05/13 12:15 pm
woelkk: Approved for RCHEMIST Chair
2. 12/05/13 12:16 pm
lahne: Approved for CCC Secretary
3. 12/05/13 12:18 pm
lahne: Rollback to CCC Secretary for Pending CCC

- Agenda post
4. 12/05/13 12:18 pm
lahne: Approved for CCC Secretary
 5. 12/13/13 4:18 pm
tauritzd:
Approved for Sciences DSCC Chair
 6. 12/16/13 9:26 am
lahne: Approved for Pending CCC Agenda post
 7. 01/17/14 12:11 pm
lahne: Approved for CCC Meeting Agenda
 8. 01/17/14 12:34 pm
tauritzd:
Approved for Campus Curricula Committee Chair

Neurochemistry with Clinical Correlations

Abbreviated Course Title	Neurochemistry
Instructors	Drs. Daniel Hier and Nuran Ercal

Catalog

Description

This course introduces the neurochemistry of how neurons maintain membrane potentials, transmit signals and summate input signals to compute output signals. It

includes clinical correlations that demonstrate how insights from neurochemistry have furthered our understanding of neurological diseases such as epilepsy, Parkinson's disease, Alzheimer's, and more.

Prerequisites

Chem 361

Field Trip

Statement

N/A

Credit Hours

LEC: 3

LAB: 0

IND: 0

RSD: 0

Total: 3

Justification for

new course:

There are mainly two reasons to offer this course: 1) Several faculty member's research area is focused on an understanding of neurodegenerative disorders. 2) There has been a rise in neurodegenerative disorders (Alzheimer's, Parkinson's, and other types of dementia) as human beings live longer. There is no cure for these disorders yet and drug discoveries are historically accomplished by chemists. We believe there is a need for our students to have an early understanding of the chemical pathology of neurological disorders.

Semester(s)

previously taught

N/A

Co-Listed

Courses:

Course Reviewer

Comments

lahne (11/14/13 3:31 pm): Rollback: please approve

lahne (12/05/13 12:18 pm): Rollback: correct workflow

Course Inventory Change Request

New Experimental Course Proposal

Date Submitted: 11/20/13 9:41 am

Viewing: **CHEM 301.TBD : Fundamentals of Mass Spectrometer Design and Fabrication**

File: 4020

Last edit: 12/06/13 12:55 pm

Changes proposed by: lahne

Requested	Spring 2014
Effective Change Date	
Department	Chemistry
Discipline	Chemistry (CHEM)
Course Number	301
Topic ID	TBD
Title	

In Workflow

1. **RCHEMIST Chair**
2. **CCC Secretary**
3. **Sciences DSCC Chair**
4. **CCC Meeting Agenda**
5. **Campus Curricula Committee Chair**
6. **Registrar**
7. Peoplesoft

Approval Path

1. 11/20/13 2:28 pm
woelkk: Approved for RCHEMIST Chair
2. 11/21/13 11:00 am
lahne: Approved for CCC Secretary
3. 12/06/13 12:55 pm
tauritzd: Approved for Sciences DSCC Chair
4. 01/17/14 12:11 pm

lahne: Approved
for CCC Meeting
Agenda
5. 01/17/14 12:34
pm
tauritzd:
Approved for
Campus Curricula
Committee Chair

Fundamentals of Mass Spectrometer Design and Fabrication

Abbreviated Course Title MS Design & Fabrication

Course Title

Instructors Shubhender Kapila

Catalog

Description

The aim of the course is to provide an understanding of ion optics, optimization of ion optics through simulation software and incorporation of the optimized optics in the design and fabrication of compact functional mass spectrometers in a lecture lab format.

Prerequisites

Chem 251

Field Trip

Statement

Credit Hours LEC: 1 LAB: 2 IND: 0 RSD: 0

Total: 3

Justification for

new course:

department request

Semester(s)

previously taught

Co-Listed

Courses:

Course Reviewer

Comments

Key: 4020

Course Inventory Change Request

New Experimental Course Proposal

Date Submitted: 11/19/13 3:59 pm

Viewing: **STAT 6001.TBD : Statistical Shape**

Analysis

File: 4021

Last edit: 11/19/13 3:59 pm

Changes proposed by: imorgan

Requested Fall 2014

Effective Change

Date

Department Mathematics & Statistics

Discipline Statistics (STAT)

Course Number 6001

Topic ID TBD

Title

In Workflow

1. **RMATHEMA**
Chair
2. **CCC Secretary**
3. **Sciences DSCC**
Chair
4. **CCC Meeting**
Agenda
5. **Campus Curricula**
Committee Chair
6. **Registrar**
7. Peoplesoft

Approval Path

1. 11/19/13 4:14 pm
sclark: Approved
for RMATHEMA
Chair
2. 12/05/13 9:25 am
lahne: Approved
for CCC Secretary
3. 12/13/13 4:20 pm
tauritzd:
Approved for
Sciences DSCC
Chair
4. 01/17/14 12:11
pm
lahne: Approved

for CCC Meeting
Agenda

5. 01/17/14 12:35
pm

tauritzd:

Approved for
Campus Curricula
Committee Chair

Statistical Shape Analysis

Abbreviated Course Title	Stat Shape Analysis
Instructors	Robert L. Paige

Catalog

Description

Statistical shape analysis considers random objects where location, rotation and scale information is removed. This is a new area of statistics that has a huge variety of novel applications in many areas of science including agriculture, archeology, bioinformatics, biology, computer science, engineering, genetics, geography, geology and medicine.

Prerequisites

Math 22 and one of Stat 211, 213, 215, 217 or 343

Field Trip

Statement

Credit Hours	LEC: 3.0	LAB: 0.0	IND: 0.0	RSD: 0.0
Total: 3.0				

Justification for

new course:

This is a novel area of statistics which is very interdisciplinary and should be of interest to students in a variety of STEM fields.

Semester(s)

previously taught

None

Co-Listed

Courses:

Course Reviewer

Comments

Key: 4021

Course Inventory Change Request

New Experimental Course Proposal

Date Submitted: 11/21/13 11:28 am

Viewing: **NUC ENG 401.TBD : Nuclear Reactor**

Passive Safety

File: 4024

Last edit: 01/17/14 12:14 pm

Changes proposed by: usmans

Requested	Spring 2014
Effective Change Date	
Department	Mining & Nuclear Engineering
Discipline	Nuclear Engineering (NUC ENG)
Course Number	401
Topic ID	TBD
Title	

In Workflow

1. **RMINNUCL Chair**
2. **CCC Secretary**
3. **Engineering DSCC Chair**
4. **Pending CCC Agenda post**
5. **CCC Meeting Agenda**
6. **Campus Curricula Committee Chair**
7. **Registrar**
8. Peoplesoft

Approval Path

1. 11/21/13 11:58 am
frimpong: Approved for RMINNUCL Chair
2. 12/05/13 9:25 am
lahne: Approved for CCC Secretary
3. 12/16/13 2:55 pm
sraper: Approved for Engineering DSCC Chair
4. 12/16/13 3:00 pm
lahne: Approved

- for Pending CCC Agenda post
- 5. 01/17/14 12:15 pm
lahne: Approved for CCC Meeting Agenda
- 6. 01/17/14 12:36 pm
tauritzd: Approved for Campus Curricula Committee Chair

Nuclear Reactor Passive Safety

Abbreviated	Reactor Passive Safety
Course Title	
Instructors	Shoaib Usman

Catalog

Description

Overview of passive safety covering two parts: neutronics safety and thermo fluid safety. Thermo fluid safety relies on natural forces alone (gravity, natural circulation, phase change) to keep the core at acceptable temperatures. For neutronic safety, the core is designed to produce sufficient negative reactivity to shut down the fission chain reaction.

Prerequisites

Graduate Standing, NUC ENG 221, NUC ENG 223, NUC ENG 303

Field Trip

Statement

Credit Hours	LEC: 3	LAB: 0	IND: 0	RSD: 0
Total: 3				

Justification for

new course:

There is no course being offered in this area and passive safety is increasingly important area in new reactor designs.

Semester(s)

previously taught

Co-Listed

Courses:

Course Reviewer

Comments

Key: 4024

Course Inventory Change Request

New Experimental Course Proposal

Date Submitted: 12/03/13 9:26 am

Viewing: **IS&T 6001.TBD : Information**

Visualization and Analytics

File: 4025

Last edit: 01/17/14 12:16 pm

Changes proposed by: barryf

Requested Fall 2014

Effective Change

Date

Department Business and Information Technology

Discipline Info Science & Technology (IS&T)

Course Number 6001

Topic ID TBD

Title

In Workflow

1. **RBUSADMN
Chair**
2. **CCC Secretary**
3. **Social Sciences
DSCC Chair**
4. **Pending CCC
Agenda post**
5. **CCC Meeting
Agenda**
6. **Campus Curricula
Committee Chair**
7. **Registrar**
8. Peoplesoft

Approval Path

1. 12/04/13 12:35
am
siauk: Approved
for RBUSADMN
Chair
2. 12/05/13 9:23 am
lahne: Approved
for CCC Secretary
3. 12/05/13 11:49
am
barryf: Approved
for Social
Sciences DSCC

Chair

4. 12/12/13 2:26 pm

lahne: Approved
for Pending CCC
Agenda post5. 01/17/14 12:16
pmlahne: Approved
for CCC Meeting
Agenda6. 01/17/14 12:38
pmtauritzd:
Approved for
Campus Curricula
Committee Chair

Information Visualization and Analytics

Abbreviated	Info Visualization/Anal.
Course Title	
Instructors	Dr. Michael Hilgers

Catalog

Description

Develops models of modern information systems using combinatorial constructs to analyze and visualize the underlying structure and related growth dynamics.

Potential information models include the massive graph structure of the World Wide Web, clustering in social media, random graph models of web dynamics, and information flow across random networks.

Prerequisites

Statistics and calculus knowledge

Field Trip

Statement

Credit Hours

LEC: 3

LAB: 0

IND: 0

RSD: 0

Total: 3

Justification for
new course:

Continued development of big data courses.

Semester(s)

previously taught

Co-Listed

Courses:

Course Reviewer

Comments

Key: 4025

Course Inventory Change Request

New Experimental Course Proposal

Date Submitted: 11/22/13 2:16 pm

Viewing: **ART 3001.TBD : Study of Documentary**

File: 4026

Last edit: 01/17/14 12:17 pm

Changes proposed by: denises

Requested Fall 2014

Effective Change

Date

Department Arts, Languages, & Philosophy

Discipline Art (ART)

Course Number 3001

Topic ID TBD

Title

In Workflow

1. **RPHILOSO Chair**
2. **CCC Secretary**
3. **Arts & Humanities DSCC Chair**
4. **Pending CCC Agenda post**
5. **CCC Meeting Agenda**
6. **Campus Curricula Committee Chair**
7. **Registrar**
8. Peoplesoft

Approval Path

1. 12/03/13 12:12 pm
lance: Approved for RPHILOSO Chair
2. 12/05/13 9:23 am
lahne: Approved for CCC Secretary
3. 12/05/13 9:37 am
ivliyeva:
Approved for Arts & Humanities DSCC Chair

4. 12/12/13 2:26 pm
lahne: Approved
for Pending CCC
Agenda post
5. 01/17/14 12:17
pm
lahne: Approved
for CCC Meeting
Agenda
6. 01/17/14 12:38
pm
tauritzd:
Approved for
Campus Curricula
Committee Chair

Study of Documentary

Abbreviated Course Title	Study of Documentary
Instructors	Andrew Max Tohline

Catalog

Description

An exploration of the art, truth, and controversy of the documentary from 1895 to the present, featuring landmark films seen through contemporary and historical perspectives: actualities, city symphonies, war documentaries, concert films, personal documentaries, and mockumentaries.

Prerequisites

Art 85

Field Trip

Statement

Credit Hours	LEC: 3	LAB: 0	IND: 0	RSD: 0
Total: 3				

Justification for

new course:

Need 3000-level course to support Literature and Film minor.

Semester(s)

previously taught

N/A

Co-Listed

Courses:

Course Reviewer

Comments

Key: 4026

Course Inventory Change Request

New Experimental Course Proposal

Date Submitted: 12/09/13 1:40 pm

Viewing: **CHEM 401.TBD : Molecular Reaction**

Dynamics

File: 4028

Last edit: 01/17/14 12:18 pm

Changes proposed by: dawesr

Requested	Spring 2014
Effective Change Date	
Department	Chemistry
Discipline	Chemistry (CHEM)
Course Number	401
Topic ID	TBD
Title	

In Workflow

1. **RCHEMIST Chair**
2. **CCC Secretary**
3. **Sciences DSCC Chair**
4. **Pending CCC Agenda post**
5. **CCC Meeting Agenda**
6. **Campus Curricula Committee Chair**
7. **Registrar**
8. Peoplesoft

Approval Path

1. 12/09/13 1:42 pm
woelkk: Approved for RCHEMIST Chair
2. 12/09/13 1:48 pm
lahne: Approved for CCC Secretary
3. 12/13/13 4:26 pm
tauritzd:
Approved for Sciences DSCC Chair
4. 12/16/13 9:25 am
lahne: Approved

- for Pending CCC
Agenda post
5. 01/17/14 12:18
pm
lahne: Approved
for CCC Meeting
Agenda
6. 01/17/14 12:39
pm
tauritzd:
Approved for
Campus Curricula
Committee Chair

Molecular Reaction Dynamics

Abbreviated Course Title	Mol Reaction Dynamics
Instructors	Richard Dawes

Catalog

Description

The course will cover several aspects of molecular reaction dynamics. Topics will include collisions, scattering, potential energy surfaces, spectroscopic techniques, molecular energy transfer, and photodissociation.

Prerequisites

Chem 243 and Chem 343

Field Trip

Statement

none

Credit Hours	LEC: 3	LAB: 0	IND: 0	RSD: 0
Total: 3				

Justification for
new course:

We have a number of interested graduate students who need a course like this and are prepared to sign up. No currently listed course is similar enough in description to justify covering the desired material.

Semester(s)

previously taught

none

Co-Listed

Courses:

Course Reviewer

Comments

Key: 4028

There is a long tradition of experiential learning. One of the early proponents was John Dewey, the Progressive era education reformer. Dewey argued that educators should move from teaching abstractions to instruction based upon problem solving and learning by doing. In other words, educators should encourage students to apply what they are learning. As he wrote in 1938, “There is an intimate and necessary relation between the process of actual experience and education.”

Key Elements of Experiential Learning

- Student centered rather than teacher centered
- Active learning rather than passive learning
- Application of learned principles to form realistic solutions to problems, issues and challenges
- Reflection upon the learning experience.

General Definition

Experiential learning at Missouri S&T refers to learning stimulated by a variety of structured activities that differ significantly from the traditional lecture format. Experiential learning activities are designed to require students to go beyond mastering basic skills and knowledge in the application of that material to problem solving challenges. These hands-on activities involve collaboration and reflective learning and allow students to learn in environments that align with their aptitudes.

Implementation Guidelines for Missouri S&T

To qualify:

1. The activity must be University sponsored or affiliated and the student must receive written approval of the activity from a faculty member or academic advisor in the student's degree program. Approval of the initial activity does not automatically imply approval of the overall experience. Degree programs may develop lists of pre-approved activities that will count as significant experiential learning activities if completed.
 2. The faculty member or academic advisor will ensure that the activity is of significant duration, intensity and rigor to demonstrate successful application of learned principles appropriate to the expectations of the degree program faculty (it may be that more than one activity could be combined to create a suite of experiential learning activities for a single student that may be approved in satisfaction of this requirement).
 3. The focus must be on "learning by doing" in a creative and innovative activity that generally falls outside the realm of the traditional lecture classroom experience and contributes significantly to professional and personal development allowing students to reflect on contributions to the S&T or broader community in addition to the student's development.
 4. Finally, a significant experiential learning activity will include a written summary reflection piece that will document the experience from the student's perspective; this written reflection piece should be of a quality suitable for inclusion as an attachment to a co-curricular transcript or in an e-portfolio that might be submitted by the student to potential employers or to graduate school admissions committees.
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Examples of activities that might qualify:

- Undergraduate research (OURE projects, NSF Research Experience for Undergraduates, Honors Academy senior research project, etc.)
- Co-Op, summer internship, and externships in industry or at a research center
- Significant participation on a student design team
- Study abroad
- S&T sponsored service learning (e.g., EWB, Bio Sci and Psychology capstone service learning or internship projects, Miner Challenge)
- Significant involvement in national/international competitions such as Chem-E Car, IEEE Robotics, etc.
- Field camp/ field trip experiences of significant duration and intensity
- Practicum or formalized student teaching
- Mentor/coach/tutor over a sustained period in an S&T sponsored mentoring program (Student Success Coaches, Peer Learning Assistant, On-Track Mentor, Opening Week Mentor - which continues through the academic year with programming such as ReConnect1 and 2)
- Paraprofessional, mentoring, peer teaching positions (Resident Assistants, Programming Resident Assistants, Chancellors Leadership Academy Advisors, Peer Involvement Advisors, Miner Mentors, Joe's P.E.E.R.S., Health Related Careers Mentoring Program, Admissions Ambassadors, PRO Leaders)
- Leadership positions within student governing boards (Student Council, Student Union Board, Inter-fraternity Council, PanHellenic Council, Greek Chapter Executive board, Residence Hall Association, National Residence Hall Honorary, Residence Hall Executive Board, Cultural Activities Planning Committees, Student Judicial Boards, GLVC Student Athlete Advisory Committee)
- Year-long leadership involvement experiences (Global Leaders Institute, Chancellor's Leadership Academy, Student Leadership Conference Chair, Intercollegiate Athletics Team)
- Leadership workshops and retreats (NRHA Leadership Trip, Greek Chapter retreats, Backpack to Briefcase, Student Leadership Conference, Sue Shear Leadership Academy)
- Activities provided in campus residences that are judged as an effective conduit for Missouri S&T to connect students' in-class experiences to their life within the campus community. A variety of activities are provided to support academic success and enhance professionalism, time management, leadership, project management, and interpersonal, and communication skills.

This list is not meant to be all-inclusive or restrictive. The faculty in each degree program must come to consensus on activities they will accept within the structure and expectations of their degree programs; however, activities must embody the spirit and intent of the Missouri S&T definition and implementation guidelines delineated above.