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ATTACHMENT B

# FORMAT FOR CURRICULUM CHANGE PROPOSAL

To: Curriculum Committee

From: Department of Physical Sciences

Date submitted: September 23, 2008

Type of Curriculum Change Requested: Program change to Chemistry - General Option and Chemistry – Biochemistry Option degrees

Submitted by: Gavin D. Jones, Ph.D.

Approved by: Department Head: Jeff Robertson, Ph.D.

Dean of School: Richard Cohoon, Ed.D.

Reviewed by: Registrar: Tammy Rhodes

Vice President: John Watson, Ed.D.

**I. Program or curriculum change as it will appear in the catalog.**

See attachments

**II. Course Information**

**A. Rationale for the requested change.**

With the addition of this course both the biochemistry and general options in chemistry will now be ACS (American Chemical Society) approved. According to the Spring 2008 ACS Guidelines and Evaluation Procedures for Bachelor's Degree Programs, "certified majors must have instruction *equivalent* to a one-semester course of at least three semester credit hours in each of the five major areas of chemistry: analytical chemistry, biochemistry, inorganic chemistry, organic chemistry, and physical chemistry" (Section 5.3) Arkansas Tech Dept of Physical Sciences currently fulfills this requirement with the exception of the inorganic course. In addition, the general option in chemistry will now require specifically a chemistry elective (see attached degree form). Furthermore, this course will be required for both options and it can be used as an upper level elective for biology and ACS option chemistry majors.

**B. What impact will the change have on staffing, on other programs, budget, and space allocation?**

**1. Within the department requesting the change.**

The only negative impact is that the Physical Sciences department will have to pick up the four credit hours with an instructor for one section of CHEM 2124.

**2. Outside the department.**

There is no known negative impact outside the department.

apscc 11/14/08
apFS 12/3/08

C. **Effective date or term:** Fall 2009 catalog

D. **When applicable, state with which departments you have specifically coordinated this change? (If unable to identify coordinating departments that change affects, Academic Affairs can offer assistance in identifying course use.)** This change should not affect any other department(s) only department of physical sciences.

| List Department Head/ Program Director Consulted: (Add to list as needed) | Indicate Support for Proposal (yes/no) | Date: |
|---|---|---|
| 1. Jeff Robertson, Ph.D. | yes | 2008 Sept 26 |
| 2. | | |
| 3. | | |
| 4. | | |
| 5. | | |

If no, please attach explanation from responding Department Head indicating why they do not support the proposal.

Note: A syllabus should accompany each course proposal. The syllabus should contain the objectives of the course, a summary of course content, and bibliography of resources.

***Each new program proposal must include an assessment plan using the approved University Assessment Form.**

*Updated 8/1/04
**Updated 9/1/05

# Chem 3423 – Descriptive Inorganic Chemistry
# Sample Syllabus

**Contact Info**
To be completed my faculty…

**Catalog Description**
Prerequisite: CHEM 3264. Basic descriptive inorganic chemistry dealing in a systematic way with the elements and the structures, properties and reactions of their inorganic compounds. Topics range from coordination chemistry to organometallic chemistry to bioinorganic chemistry. Three hours of lecture.

**Textbook(s) and Supplemental Materials**
Shriver & Atkins Inorganic Chemistry by Atkins, Overton, etc.; 4th edition. W.H. Freeman and Company, New York: 2006. (ISBN 0-7167-4878-9)
***This same textbook will be used again for CHEM 4424***

**Rationale for this course**
The justifications of this course are:
(1) To give the student a broad, yet thorough, understanding of inorganic chemistry.
(2) To value the scientific issues and the role of chemistry in the world today.
(3) To further develop critical thinking and problem solving skills necessary for competent scientists.

**Objectives**
Descriptive inorganic chemistry is considered an intermediate inorganic chemistry course such that it brings together both general chemistries I & II with advanced inorganic chemistry. The following topics will be covered: Hydrogen, Group 1 elements, Group 2 elements, Group 13 elements, Group 14 elements, Group 15 elements, Group 16 elements, Group 17 elements, Group 18 elements, *d*-block metals, and *f*-block metals. This will provide students with a thorough understanding of the entire periodic table. Moreover, the students will learn many industrial processes applicable to each group of elements.

**Grading**
The points for the course are earned as shown below:

Exams (3-4 total)
Final (Comprehensive)
Homework (10 assignments)

| | |
|---|---|
| 90 – 100 % | A |
| 80 – 89 % | B |
| 70 – 79 % | C |
| 60 – 69 % | D |
| 0 – 59 % | F |

Yes I do round up. There will be ***NO*** extra credit so **don't** ask. However, I reserve the right to lower the minimum number of points for each letter grade.

Tests will be announced at least one week early. I will do my best to have the tests graded and back to you by the next class meeting.

**Policies**
*Absences*: It is in your best interest to attend all lectures. There are NO makeup exams. This class is accelerated and we will cover copious material quickly.
*Academic Misconduct & Dishonesty*: In accordance with the faculty and student handbooks, academic misconduct and dishonesty will NOT be tolerated under any circumstance.

**Practice Problems**
I do not assign homework but there are numerous practice problems throughout the chapters and at the end of the chapters. I ***HIGHLY*** suggest you practice as many as possible.

**Email Notice**
I will notify you via your Tech email (and/or Blackboard) about anything class related.

**Note**
This syllabus is subject to change.

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## CHEMISTRY- BIOCHEM OPTION

| FRESHMAN | | | | SOPHOMORE | | | |
|---|---|---|---|---|---|---|---|
| FALL | | SPRING | | FALL | | SPRING | |
| ENGL1013 | 3 | ENGL1023 | 3 | Social Sciences | 3 | Social Sciences | 3 |
| MATH2914 | 4 | MATH2924 | 4 | PHYS2014 or 2114 | 4 | PHYS2024 or 2124 | 4 |
| CHEM2124 | 4 | CHEM2134 | 4 | CHEM3254 | 4 | CHEM3264 | 4 |
| SOC SCI | 3 | BIOL1114 | 4 | COMS 2003 or 2803 | 3 | CHEM3245 | 5 |
| PHSC1001 | 1 | PHSC 1011 | 1 | Physical Activity | 1 | | |
| | | | | | | | |
| | 15 | | 16 ~~15~~ | | 15 | | 16 |

| JUNIOR | | | | SENIOR | | | |
|---|---|---|---|---|---|---|---|
| FALL | | SPRING | | FALL | | SPRING | |
| Fine Arts | 3 | CHEM 3363 | 3 | CHEM3324 | 4 | Humanities | 3 |
| BIOL2124 | 4 | BIOL2134 | 4 | CHEM4414 | 4 | CHEM 4401 | 1 |
| CHEM3301 | 1 | BIOL3034 | 4 | BIOL3124 or 3174 | 4 | BIOL4033 | 3 |
| CHEM3344 | 4 | Descrip. Inorg | 3 | Elective | 4 | Social Sciences | 3 |
| Elective | 4 | Physical Activity | 1 | | | Electives | 5 ~~6~~ |
| | | | | | | | |
| | 16 | | 15 | | 16 | | 15 ~~16~~ |

Starting in Spring

| FRESHMAN | | | | SOPHOMORE | | | |
|---|---|---|---|---|---|---|---|
| SPRING | | FALL | | SPRING | | FALL | |
| ENGL1013 | 3 | ENGL1023 | 3 | Social Sciences | 3 | Social Sciences | 3 |
| MATH2914 | 4 | MATH2924 | 4 | PHYS2024 or 2124 | 4 | PHYS2014 or 2114 | 4 |
| CHEM2124 | 4 | CHEM2134 | 4 | CHEM3254 | 4 | CHEM3264 | 4 |
| SOC SCI | 3 | PHSC1001 | 1 | CHEM3245 | 5 | COMS2003 or 2803 | 3 |
| Physical Activity | 1 | BIOL1114 | 4 | | | Physical Activity | 1 |
| PHSC1011 | 1 | | | | | | |
| | 16 ~~15~~ | | 16 | | 16 | | 15 |

| JUNIOR | | | | SENIOR | | | |
|---|---|---|---|---|---|---|---|
| SPRING | | FALL | | SPRING | | FALL | |
| Humanites | 3 | Fine Arts | 3 | CHEM3363 | 3 | CHEM4414 | 4 |
| BIOL2124 | 4 | CHEM3344 | 4 | BIOL4033 | 3 | BIOL3124 or 3174 | 4 |
| BIOL3034 | 4 | BIOL2134 | 4 | Descrip. Inorg | 3 | CHEM4401 | 1 |
| Elective | 4 | CHEM3324 | 4 | Social Sciences | 3 | Elective | 6 |
| | | CHEM3301 | 1 | Elective | 3 ~~4~~ | | |
| | | | | | | | |
| | 15 | | 16 | | 15 ~~16~~ | | 15 |

The following are highly recommended for the electives:
CHEM 3353, CHEM 499x, BIOL 3054, BIOL 4014, BIOL 4023 BIOL 4074, BIOL 4883, BIOL 499x

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## CHEMISTRY- General OPTION

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| FRESHMAN | | | | SOPHOMORE | | | |
|---|---|---|---|---|---|---|---|
| FALL | | SPRING | | FALL | | SPRING | |
| ENGL1013 | 3 | ENGL1023 | 3 | Social Sciences | ✓ 3 | Social Sciences | 3 |
| MATH 2914 | 4 | MATH2924 | 4 | PHYS 2014 or 2114 | 4 | PHYS 2024 or 2124 | 4 |
| CHEM 2124 | 4 | CHEM2134 | 4 | CHEM3254 | 4 | CHEM 3264 | 4 |
| Social Sciences | 3 | BIOL1114 | 4 | COMS 2003 or 2803 | 3 | CHEM 3245 | 5 |
| PHSC1001 | 1 | Physical Activity | 1 | Physical Activity | ✓ 1 | | |
| | | PHSC 1011 | 1 | | | | |
| | 15 | | ~~16~~ 16 | | 15 | | 16 |

| JUNIOR | | | | SENIOR | | | |
|---|---|---|---|---|---|---|---|
| FALL | | SPRING | | FALL | | SPRING | |
| Fine Arts | 3 | Humanities | 3 | CHEM 4414 | 4 | CHEM 4401 | ✓ 1 |
| Science Elective | 3 | CHEM 3344 | ✓ 4 | CHEM Elective | 3 | CHEM Elective | ✓ 3 |
| CHEM 3301 | 1 | Descrip. Inorg 3423 | ✓ 3 | Elective | ✓ 9 | Social Sciences | ✓ 3 |
| CHEM 3324 | 4 | Elective | ✓ ~~5~~ 6 | | | Elective | ✓ 9 |
| Elective | 3 | PE | 1 | | | | |
| | | | | | | | |
| | 14 | | ~~16~~ 16 | | 16 | | 16 |

Starting in Spring

| FRESHMAN | | | | SOPHOMORE | | | |
|---|---|---|---|---|---|---|---|
| SPRING | | FALL | | SPRING | | FALL | |
| ENGL1013 | 3 | ENGL1023 | 3 | Social Sciences | 3 | Social Sciences | 3 |
| MATH2914 | 4 | MATH2924 | 4 | PHYS2024 or 2124 | 4 | PHYS2014 or 2114 | 4 |
| CHEM2124 | 4 | CHEM2134 | 4 | CHEM3254 | 4 | CHEM3264 | 4 |
| Social Sciences | 3 | PHSC1001 | 1 | CHEM3245 | 5 | COMS2003 or 2803 | 3 |
| Physical Activity | 1 | BIOL1114 | 4 | | | Physical Activity | 1 |
| PHSC 1011 | 1 | | | | | | |
| | ~~16~~ 15 | | 16 | | 16 | | 15 |

| JUNIOR | | | | SENIOR | | | |
|---|---|---|---|---|---|---|---|
| SPRING | | FALL | | SPRING | | FALL | |
| Humanites | 3 | Fine Arts | 3 | CHEM 4401 | 1 | CHEM 4414 | 4 |
| CHEM 3344 | 4 | Science Elective | 3 | CHEM Elective | 3 | CHEM Elective | 3 |
| Descrip. Inorg | 3 | CHEM 3301 | 1 | Social Sciences | 3 | Elective | 9 |
| Elective | ~~6~~ 5 | CHEM 3324 | 4 | Elective | 9 | | |
| PE | 1 | Elective | 3 | | | | |
| | | | | | | | |
| | 16 | | 14 | | 16 | | 16 |

## Karen Riddell

**From:** Jeff Robertson [jrobertson@atu.edu]
**Sent:** Monday, December 15, 2008 8:25 AM
**To:** kriddell@atu.edu
**Subject:** Re: Catalog Changes

CHEM (gen)
1. move Freshman Spring PE to Junior Spring.
2. Add PHSC 1011 to Freshman Spring
3. Reduce Elective by 1 hour in Junior Spring.

CHEM (BIO)
1. Add PHSC 1011 to Freshman Spring
2. Reduce Senior Spring elective by 1 hour.

Karen Riddell wrote:
> Dr. Robertson,
>
>
>
> I have a question regarding the curriculum changes for the 2009-2010
> catalog. In the proposal adding the CHEM 3423 Descriptive Inorganic
> Chemistry to the Chemistry (Biochemistry and General options), the
> PHSC
> 1011 was left out of the matrices. When I add this class in, it puts
> these programs at 125 hours. Where do you want me to deduct the extra hour?
>
>
>
> Thanks.
>
>
>
> Karen Riddell
>
> Academic Affairs
>
> Arkansas Tech University
>
> Administration 200
>
> Phone: 479-968-0319
>
> Fax: 479-968-0644
>
> kriddell@atu.edu <mailto:kriddell@atu.edu>
>
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