CHEM 167: BIOCHEMISTRY OF AGING

In Workflow

1. CHEM Committee Chair (robertslm@csus.edu)
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10. Registrar's Office (k.mcfarland@csus.edu)
11. PeopleSoft (PeopleSoft@csus.edu)

Approval Path

1. Wed, 01 Mar 2023 21:13:23 GMT
   Linda Roberts (robertslm): Approved for CHEM Committee Chair
2. Mon, 13 Mar 2023 23:59:13 GMT
   Susan Crawford (crawford): Approved for CHEM Chair
3. Thu, 16 Mar 2023 01:19:50 GMT
   Thomas Krabacher (tsk): Rollback to CHEM Chair for NSM College Committee Chair
4. Thu, 16 Mar 2023 22:39:05 GMT
   Susan Crawford (crawford): Approved for CHEM Chair
5. Thu, 16 Mar 2023 22:57:25 GMT
   Thomas Krabacher (tsk): Approved for NSM College Committee Chair
6. Thu, 16 Mar 2023 23:03:10 GMT
   Shannon Datwyler (datwyler): Approved for NSM Dean

New Course Proposal

Date Submitted: Fri, 18 Nov 2022 20:22:23 GMT

Viewing: CHEM 167 : Biochemistry of Aging

Last edit: Thu, 16 Mar 2023 22:38:11 GMT

Changes proposed by: Johannes Bauer (223000388)

Contact(s):

Name (First Last)	Email	Phone 999-999-9999
Johannes Bauer	j.bauer@csus.edu	916.278.4635

Catalog Title:
Biochemistry of Aging

Class Schedule Title:
Aging Biochemistry

Academic Group: (College)
NSM - Natural Sciences & Mathematics

Academic Organization: (Department)
Chemistry

Will this course be offered through the College of Continuing Education (CCE)?
No

Catalog Year Effective:
Fall 2023 (2023/2024 Catalog)

Subject Area: (prefix)
CHEM - Chemistry

Catalog Number: (course number)
167

Course ID: (For administrative use only.)
TBD

Units:
3

Is the only purpose of this change to update the term typically offered or the enforcement of existing requisites at registration?
No

In what term(s) will this course typically be offered?
Spring term only

Does this course require a room for its final exam?
Yes, final exam requires a room

This course complies with the credit hour policy:
Yes

Justification for course proposal:
While a Biology of Aging course (BIO120) is in the Biology Department course catalog, this course has not been taught for at least ten years, and a course syllabus is not available. In addition, students in the Chemistry Department require a number of Upper Division Chemistry Electives. Especially for students in the Biochemistry track, the number of available elective courses that are relevant to this career track (i.e. cover biochemical topics) are extremely limited. This novel interdisciplinary course thus adds more choice to the course list, and relieves some pressure on the existing courses. This proposal therefore aims to revive BIO120 and add an equivalent course to the catalog of the Chemistry Department (CHEM167). By cross-listing these two courses, I will create a highly interdisciplinary course for students from both departments and provide a novel, much needed, upper division elective course for our students.

Course Description: (Not to exceed 80 words and language should conform to catalog copy.)
Aging is a process that has always intrigued humans, yet its causes and mechanisms have remained elusive.
This course provides an introduction to modern aging research. It will cover theories and definitions of aging, and explore how organisms age. We will discuss in detail events at the biochemical level that contribute to the aging process. Using this molecular understanding of aging, we will lastly explore anti-aging interventions and means to increase life spans.

Are one or more field trips required with this course?
No

Fee Course?
No

Is this course designated as Service Learning?
No

Is this course designated as Curricular Community Engaged Learning?
No

Does this course require safety training?
No

Does this course require personal protective equipment (PPE)?
No

Does this course have prerequisites?
Yes

Prerequisite:
One semester of Biochemistry (Chem160A or Chem161)
At least one UD Biology course recommended (may be taken concurrently)

Prerequisites Enforced at Registration?
Yes

Does this course have corequisites?
No

Graded:
Letter

Approval required for enrollment?
No Approval Required

Course Component(s) and Classification(s):
Lecture

Lecture Classification
CS#02 - Lecture/Discussion (K-factor=1WTU per unit)
Lecture Units
3

Is this a paired course?
Yes

Please confirm that it complies with the Paired Courses Policy and enter the course with which it is paired:
CHEM267

Is this course crosslisted?
Yes

Do they meet together and fulfill the same requirement?
Yes

Please identify the crosslisted course:
BIO120

Can this course be repeated for credit?
No

Can the course be taken for credit more than once during the same term?
No

Description of the Expected Learning Outcomes and Assessment Strategies:

List the Expected Learning Outcomes and their accompanying Assessment Strategies (e.g., portfolios, examinations, performances, pre-and post-tests, conferences with students, student papers). Click the plus sign to add a new row.

	Expected Learning Outcome	Assessment Strategies
1	DESCRIBE phenotypes, definitions and theories of aging.	Quizzes and Exercise worksheets (Quizzes and Exercises that will cover the week's reading and lecture assignments.) Exams (There will be one mid-semester exam.)
2	EXPLAIN how aging can be measured in various organisms, and COMPARE the models used by researchers to investigate aging.	Quizzes and Exercise worksheets (Quizzes and Exercises that will cover the week's reading and lecture assignments.) Exams (There will be one mid-semester exam.)
3	EXPLAIN and SUMMARIZE the evidence for and mechanisms of biological systems that modulate aging.	Quizzes and Exercise worksheets (Quizzes and Exercises that will cover the week's reading and lecture assignments.) Exams (There will be one mid-semester exam.) Student Lecture presentation (Students will present to the class a 30-40min lecture on an aging-related topic. This may be a group assignment.)

4	IDENTIFY the components of common biological and biochemical pathways that modulate aging and longevity, and EXAMINE the scientific literature for the evidence of the involvement of those components.	Quizzes and Exercise worksheets (Quizzes and Exercises that will cover the week's reading and lecture assignments.) Exams (There will be one mid-semester exam.) Student Lecture presentation (Students will present to the class a 30-40min lecture on an aging-related topic. This may be a group assignment.) Peer Review (the lecture presentation will be 'mock' peer-reviewed by the class. Peer-review will be conducted anonymously, and the average peer-review grade will be incorporated into the presentation grade.)
5	COMPARE and EVALUATE anti-aging interventions.	Quizzes and Exercise worksheets (Quizzes and Exercises that will cover the week's reading and lecture assignments.) Exams (There will be one mid-semester exam.) Student Lecture presentation (Students will present to the class a 30-40min lecture on an aging-related topic. This may be a group assignment.) Exams.

Attach a list of the required/recommended course readings and activities:

CHEM167 Syllabus.docx

For whom is this course being developed?

Majors in the Dept
Minors in the Dept
Majors of other Depts

Is this course required in a degree program (major, minor, graduate degree, certificate?)

No

Does the proposed change or addition cause a significant increase in the use of College or University resources (lab room, computer)?

No

Will there be any departments affected by this proposed course?

Yes

Indicate which department(s) will be affected by the proposed course:

Department(s)
Biological Sciences

I/we as the author(s) of this course proposal agree to provide a new or updated accessibility checklist to the Dean's office prior to the semester when this course is taught utilizing the changes proposed here.

I/we agree

University Learning Goals

Undergraduate Learning Goals:

Competence in the disciplines
Knowledge of human cultures and the physical and natural world
Integrative learning
Intellectual and practical skills

Is this course required as part of a teaching credential program, a single subject, or multiple subject waiver program (e.g., Liberal Studies, Biology) or other school personnel preparation program (e.g., School of Nursing)?

No

GE Course and GE Goal(s)

Is this a General Education (GE) course or is it being considered for GE?

No

Please attach any additional files not requested above:

Kneitel:Crawford Discussion.pdf
Aging Support Letter.docx

Reviewer Comments:

Thomas Krabacher (tsk) (Thu, 16 Mar 2023 01:19:50 GMT): Rollback: Revise along the lines already discussed (Ben G. has the details). Resubmit by Friday noon, if possible,

Key: 14853