

NSM 195A: STEM PEDAGOGICAL PRACTICES

In Workflow

1. NSM College Committee Chair (mikkel.jensen@csus.edu)
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Approval Path

1. Wed, 03 Nov 2021 22:39:21 GMT
Mikkel Jensen (mikkel.jensen): Rollback to Initiator
2. Wed, 17 Nov 2021 23:46:34 GMT
Mikkel Jensen (mikkel.jensen): Approved for NSM College Committee Chair
3. Wed, 17 Nov 2021 23:47:02 GMT
Shannon Datwyler (datwyler): Approved for NSM Dean

New Course Proposal

Date Submitted: Sat, 06 Nov 2021 23:45:40 GMT

Viewing: NSM 195A : STEM Pedagogical Practices

Last edit: Sat, 06 Nov 2021 23:45:39 GMT

Changes proposed by: Vera Margoniner (210759745)

Contact(s):

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Catalog Title:

STEM Pedagogical Practices

Class Schedule Title:

STEM Pedagogical Practices

Academic Group: (College)

NSM - Natural Sciences & Mathematics

Academic Organization: (Department)

Natural Sciences and Mathematics

Will this course be offered through the College of Continuing Education (CCE)?

No

Catalog Year Effective:

Spring 2022 (2022/2023 Catalog)

Subject Area: (prefix)

NSM - Natural Sciences and Mathematics

Catalog Number: (course number)

195A

Course ID: (For administrative use only.)

TBD

Units:

1

Is the primary purpose of this change to update the term typically offered or the enforcement of prerequisites at registration?

No

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

Fall, Spring

Does this course require a room for its final exam?

No, final exam does not require a room

Does this course replace an existing experimental course?

No

This course complies with the credit hour policy:

Yes

Justification for course proposal:

The Teaching Credential program at Sac State requires that applicants document at least 45 hours of early field experiences with K-12 students in public schools. NSM 195A will provide pedagogical context to support students in their field experience (NSM 195B). Students will be introduced to research-supported pedagogical practices appropriate to Technology, Engineering, and Mathematics (STEM) instruction in secondary schools. Topics include: the Common Core Math Standards, the New Generation Science Standards (NGSS), classroom questioning strategies, active learning strategies, and different forms of assessment.

The two courses will also provide students who may not yet be sure about their future career with the opportunity to learn about the job of a secondary STEM teacher.

Course Description: (Not to exceed 80 words and language should conform to catalog copy.)

STEM Pedagogical Practices. Students will be introduced to research-supported pedagogical practices appropriate to Technology, Engineering, and Mathematics (STEM) instruction in secondary schools. Topics include: the Common Core Math Standards, the New Generation Science Standards (NGSS), classroom questioning strategies, active learning strategies, and different forms of assessment.

Are one or more field trips required with this course?

No

Fee Course?

No

Is this course designated as Service Learning?

No

Does this course require safety training?

No

Does this course require personal protective equipment (PPE)?

No

Course Note: (Note must be a single sentence; do not include field trip or fee course notations.)

NSM 195A will provide pedagogical context to support students in their field experience (NSM 195B).

Does this course have prerequisites?

Yes

Prerequisite:

All lower division coursework for a NSM major must be completed.

Prerequisites Enforced at Registration?

No

Does this course have corequisites?

No

Graded:

Credit / No Credit

Approval required for enrollment?

Instructor Approval

Course Component(s) and Classification(s):

Discussion

Discussion Classification

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

Discussion Units

1

Is this a paired course?

No

Is this course crosslisted?

No

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: Describe outcomes using the following format: "Students will be able to: 1), 2), etc."

Upon completing this course students will be able to:

- 1) Differentiate between open and closed questions;
- 2) Create different types of questions based on a range of Bloom's Taxonomy levels;
- 3) Describe teaching strategies that promote a growth mindset and improve academic tenacity;
- 4) Create, test, and refine formative assessment tools;
- 5) Describe several types of active learning teaching strategies (i.e. peer instruction, problem-based learning, project-based learning, cooperative learning, etc.);
- 6) Explain the structure and content of Next Generation Science Standards and the Common Core State Standards for Mathematics and Literacy in Science;
- 7) Understand the job of a secondary school STEM teacher and be better prepared to decide if they want to pursue teaching as a career.

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

NSM 195A Syllabus.pdf

Assessment Strategies: A description of the assessment strategies (e.g., portfolios, examinations, performances, pre-and post-tests, conferences with students, student papers) which will be used by the instructor to determine the extent to which students have achieved the learning outcomes noted above.

This is a credit / no credit class. To receive credit students must:

- Complete the Reading Musings (guided reflections about the reading assignments) (SLOs 1-7) and receive a passing grade in all minus two (i.e., if there are 10 assignments, 8 must receive a passing grade); and
- Participate in the weekly class discussions (SLOs 1-7) and have no more than two absences. Two tardies will count as one absence.

For whom is this course being developed?

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?

No

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
Personal and social responsibility
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

Reviewer Comments:

Mikkel Jensen (mikkel.jensen) (Wed, 03 Nov 2021 22:39:09 GMT): - Link assessment strategies and learning objectives - Change "Prerequisites Enforced at Registration" to "No", as completion of a lower-division NSM major is not automatically enforceable. - Can NSM 195A be taken without NSM 195B? (195B lists 195A as a corequisite, but not the other way around). Double-check and update as necessary.

Mikkel Jensen (mikkel.jensen) (Wed, 03 Nov 2021 22:39:21 GMT): Rollback: - Link assessment strategies and learning objectives - Change "Prerequisites Enforced at Registration" to "No", as completion of a lower-division NSM major is not automatically enforceable. - Can NSM 195A be taken without NSM 195B? (195B lists 195A as a corequisite, but not the other way around). Double-check and update as necessary.

Key: 14515