PHYS 292: PHYSICS PEDAGOGY

In Workflow

1. PHYS Committee Chair (mikkel.jensen@csus.edu)
2. PHYS Chair (degraff@csus.edu)
3. NSM College Committee Chair (mikkel.jensen@csus.edu)
4. NSM Dean (datwyler@csus.edu)
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9. Catalog Editor (catalog@csus.edu)
10. Registrar's Office (k.mcfarland@csus.edu)
11. PeopleSoft (PeopleSoft@csus.edu)

Approval Path

1. Fri, 13 Sep 2024 20:28:52 GMT
   Mikkel Jensen (mikkel.jensen): Approved for PHYS Committee Chair
2. Fri, 13 Sep 2024 20:29:20 GMT
   William DeGraffenreid (degraff): Approved for PHYS Chair
3. Wed, 16 Oct 2024 22:42:30 GMT
   Mikkel Jensen (mikkel.jensen): Rollback to Initiator
4. Fri, 31 Jan 2025 19:28:30 GMT
   Mikkel Jensen (mikkel.jensen): Approved for PHYS Committee Chair
5. Fri, 31 Jan 2025 19:38:42 GMT
   William DeGraffenreid (degraff): Approved for PHYS Chair
6. Tue, 11 Feb 2025 01:33:39 GMT
   Mikkel Jensen (mikkel.jensen): Rollback to Initiator
7. Fri, 28 Feb 2025 19:32:54 GMT
   Mikkel Jensen (mikkel.jensen): Approved for PHYS Committee Chair
8. Fri, 28 Feb 2025 19:37:03 GMT
   William DeGraffenreid (degraff): Approved for PHYS Chair
9. Wed, 05 Mar 2025 23:59:21 GMT
   Mikkel Jensen (mikkel.jensen): Approved for NSM College Committee Chair
10. Thu, 06 Mar 2025 15:56:31 GMT
    Chris Taylor (ctaylor): Approved for NSM Dean

New Course Proposal

Date Submitted: Thu, 20 Feb 2025 19:03:53 GMT

Viewing: PHYS 292 : Physics Pedagogy

Last edit: Thu, 20 Feb 2025 19:03:52 GMT

Changes proposed by: Rodolfo Barniol Duran (219696192)

Contact(s):

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Catalog Title:

Physics Pedagogy

Class Schedule Title:

Physics Pedagogy

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

Academic Organization: (Department)
Physics and Astronomy

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

Catalog Year Effective:
Fall 2025 (2025/2026 Catalog)

Subject Area: (prefix)
PHYS - Physics

Catalog Number: (course number)
292

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?
Fall term only

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:
Physics 292 is one of the elective courses being proposed as part of a new Master of Science in Physics. This course introduces students to the theories of pedagogy as students learn the protocols of teaching laboratory courses. The MS program is designed to allow flexibility for students to prepare for PhD programs or to prepare for a career in teaching, industry or government.

Course Description: (Not to exceed 90 words and language should conform to catalog copy.)
The course is designed for graduate students serving as laboratory Teaching Assistants. Students in this course will learn about theoretical topics in science education such as growth mindset, mental models, and conceptual change, as well as practical issues associated with facilitating learning and managing a diverse classroom.

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?
No

Does this course have corequisites?
No

Graded:
Letter

Approval required for enrollment?
No Approval Required

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

Seminar Classification
CS#05 - Seminar (K-factor=1 WTU per unit)
Seminar Units
3

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 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	Summarize some of the most established science education research findings.	Pedagogy reading reflections and quizzes.
2	Apply different leadership strategies in teaching.	Pedagogy article presentations, quizzes and teaching evaluation.
3	Manage a classroom effectively.	Teaching reflections and teaching evaluations.
4	Create and apply formative assessment tools.	Teaching reflections and teaching evaluations.
5	Critique laboratory instructions.	Teaching reflections and teaching evaluations.

Attach a list of the required/recommended course readings and activities:
PHYS 292- Physics Pedagogy_syllabus.pdf

For whom is this course being developed?
Majors in the Dept

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

Graduate (Masters) Learning Goals:

Disciplinary knowledge
Communication
Information literacy
Professionalism
Intercultural/Global perspectives

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

Is this a Graduate Writing Intensive (GWI) course?

No

Reviewer Comments:

Mikkel Jensen (mikkel.jensen) (Wed, 16 Oct 2024 22:42:30 GMT): Rollback: Please add more justification for the option to repeat for up to 6 units. This is a large fraction of the required elective units. How would the course be different the second time around?

Mikkel Jensen (mikkel.jensen) (Tue, 11 Feb 2025 01:33:39 GMT): Rollback: The LOs and corresponding assessment strategies don't indicate what is different from the first vs. the second iteration of taking the course. Need to indicate how students will benefit from taking the class the second time.

Key: 14757