PHYS&221 - Engineering Physics I

BASIC INFORMATION
Requester(s): Elizabeth Schoene
College: South Seattle College
Division/Dept: Academic Programs
Dean: Laura Kingston
Peer Reviewer(s): Sean Rogers

COLLEGE SUPPLEMENTAL
Proposed Quarter of Implementation: Spring 2015

Class Capacity: 24

Note: The following questions are being asked in order to fulfill Seattle Colleges District VI and AFT Seattle, Local 1789 Agreement language:

Have you discussed the class cap for the course with your unit administrator and with other unit faculty that will be teaching?
Yes, discussion has been held.

Is the class cap number that you have indicated mutually agreed upon by unit faculty and unit administrators?
Yes, agreement has been reached.

Modes of Delivery: (Check all that apply)

- [x] Fully On Campus
- [ ] Fully Online
- [x] Hybrid
- [ ] Correspondence
- [ ] Credit by Exam
- [ ] Seminar
- [ ] Visual Media
- [ ] Other

Explanation:

Select the Special Designation(s) this course will satisfy, if applicable:
(No Special Designations Selected)

Class Schedule Description:
Calculus-based study of kinematics, Newton's Laws of Motion, dynamics, energy, and momentum in linear and rotational coordinates. Lab Included. Prereq: MATH& 151 with a 2.0 or higher.

Course Prerequisite(s):
MATH& 151 with a 2.0 or higher
Course Corequisite(s):
None

AA Degree Outcomes:  (If Applicable)

**Critical Thinking, Inquiry and Analysis, and Problem Solving**
Explore issues, ideas, phenomena, and artifacts to define and articulate problems or to formulate hypotheses. Analyze evidence to formulate an opinion, identify strategies, develop and implement solutions, evaluate outcomes, and/or draw conclusions.

**Quantitative Literacy**
Reason and solve quantitative problems in a wide array of contexts and use quantitative evidence to develop and communicate sound arguments.

**Technology Literacy**
Effectively and critically evaluate, navigate, and use a range of digital technologies.

Student Learning Outcomes:

**Computation**
Use arithmetic and other basic mathematical operations as required by program of study

Apply quantitative skills for academic and career purposes

**Critical Thinking and Problem-Solving**
Think critically in evaluating information, solving problems, and making decisions

**Technology**
Select and use appropriate technological tools for academic and career tasks

Program Outcomes:

<table>
<thead>
<tr>
<th>SLO #</th>
<th>Included in Course Objective Number</th>
<th>SSCC Student Learning Outcomes</th>
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</thead>
<tbody>
<tr>
<td>SLO 1.1</td>
<td></td>
<td>Communication - Read and listen actively to learn and communicate.</td>
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<tr>
<td>SLO 1.2</td>
<td></td>
<td>Communication - Speak and write effectively for academic and career purposes.</td>
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<tr>
<td>SLO 2.1</td>
<td>1, 4</td>
<td>Computation - Use arithmetic and other basic mathematical operations as required by program of study.</td>
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<tr>
<td>SLO 2.2</td>
<td>1, 2, 3, 4, 5, 6</td>
<td>Computation - Apply quantitative skills for academic and career purposes.</td>
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<tr>
<td>SLO 3.1</td>
<td></td>
<td>Human Relations - Use social skills to work in groups effectively.</td>
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<tr>
<td>SLO 3.2</td>
<td></td>
<td>Human Relations – Have knowledge of the diverse cultures in our multicultural society.</td>
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<tr>
<td>SLO 4.1</td>
<td>1, 2, 3, 5, 6</td>
<td>Critical Thinking—Think critically in evaluating information, solving problems, and making decisions.</td>
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### Course Outcomes / Objectives:

Upon successful completion of the course, students will be able to:

1. Solve problems involving Newton's laws, energy, and momentum.
2. Discriminate between necessary and unnecessary information when solving problems.
3. Assess the reasonableness of answers to numeric and symbolic computations.
4. Perform calculations using vectors.
5. Represent information in multiple ways, such as graphical, pictorial, mathematical, etc.
6. Identify the largest source of error in an experiment.

### Explain the student demand for the course and potential enrollment:

This course is offered four times per year with an enrollment of about 80 students.

### Explain why this course is being revised:

The course pre-requisite is being changed.

### What challenges, if any, do you foresee in offering this course:

None.

### Notations:

List any additional course fees or any additional notes (e.g. Permission required)

The two hybrid physics courses offered Fall 2015 are being offered on a pilot basis and will be evaluated at the end of the quarter.
This is to certify that the above criteria have all been met and all statements are accurate to the best of my knowledge.

Faculty involved in originating this program:

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<thead>
<tr>
<th>Name</th>
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<tbody>
<tr>
<td>Elizabeth Schoene</td>
<td></td>
<td>10/9/2015</td>
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Dean:

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<tr>
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Results of SSCC Curriculum Coordinating Council Findings

**Participating Faculty Response and Remarks**

- [ ] Recommended for approval
- [ ] Not recommended for approval
- [X] This course has not yet reached Committee Review

Chairman, Curriculum Coordinating Council:

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Vice President for Instruction:

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<td>Peter Lortz</td>
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