Eastern Illinois University
Revised Course Proposal
KSS 3800, Biomechanics of Human Motion

Please check one:  □ New course  □ Revised course

PART I: CATALOG DESCRIPTION

1. Course prefix and number, such as ART 1000:  KSS 3800
2. Title (may not exceed 30 characters, including spaces):  Biomechanics of Human Motion
3. Long title, if any (may not exceed 100 characters, including spaces):  
4. Class hours per week, lab hours per week, and credit [e.g., (3-0-3)]:  (3-0-3)
5. Term(s) to be offered:  □ Fall  □ Spring  □ Summer  □ On demand
6. Initial term of offering:  □ Fall  □ Spring  □ Summer  Year:  2009
7. Course description (not to exceed four lines):  The study of forces and how they effect movement of the human body particularly during physical activity.
8. Registration restrictions:
   a. Identify any equivalent courses (e.g., cross-listed course, non-honors version of an honors course).  None
   b. Prerequisite(s): Admission to the Kinesiology and Sports Studies major; Grade of “C” or better in BIO 2001G or BIO 2210, KSS 1500, and KSS 2440.
   b. Who can waive the prerequisite(s)?
      □ No one  □ Chair  □ Instructor  □ Advisor  □ Other (Please specify)
   c. Co-requisites:  None
   d. Repeat status:  □ Course may not be repeated.
      □ Course may be repeated to a maximum of  hours or  times.
   e. Degree, college, major(s), level, or class to which registration in the course is restricted, if any:  KSS majors
   f. Degree, college, major(s), level, or class to be excluded from the course, if any:
9. Special course attributes:  None
10. Grading methods (check all that apply):  □ Standard letter  □ C/NC  □ Audit  □ ABC/NC (“Standard letter”—i.e., ABCDF—is assumed to be the default grading method unless the course description indicates otherwise.)
11. Instructional delivery method:  □ lecture  □ lab  □ lecture/lab combined  □ independent study/research
      □ internship  □ performance  □ practicum or clinical  □ study abroad  □ other
PART II: ASSURANCE OF STUDENT LEARNING

1. List the student learning objectives of this course:

   1. Recognize the external forces that act on the body.
   2. Analyze movement through the use of linear kinematics
   3. Analyze the influence of linear kinetic laws on human movement
   4. Examine the relationships between mechanical work and energy and the application to human movement
   5. Understand resultant torques and how they contribute to equilibrium in human movement.
   7. Understand the influence of angular kinematics on human motion.

2. Identify the assignments/activities the instructor will use to determine how well students attained the learning objectives:

<table>
<thead>
<tr>
<th>Objective</th>
<th>Midterm Exam</th>
<th>Learning Module</th>
<th>Final Exam</th>
<th>Research Project</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recognize the external forces that act on the body.</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Analyze movement through the use of linear kinematics</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Analyze the influence of linear kinetic laws on human movement</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Examine the relationships between mechanical work and energy and the application to human movement.</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>
### Understand resultant torques and how they contribute to equilibrium in human movement.

| X | X | X |

### Understand angular kinetics impact on human movement.

| X | X | X |

### Understand the influence of angular kinematics on human motion.

| X | X | X |

3. **Explain how the instructor will determine students’ grades for the course:**

   - Midterm Exam: 25%
   - Learning Modules: 30%
   - Final Exam: 25%
   - Research Project: 20%

4. **For technology-delivered and other nontraditional-delivered courses/sections, address the following:** N/A

5. **For courses numbered 4750-4999, specify additional or more stringent requirements for students enrolling for graduate credit.** N/A

6. **If applicable, indicate whether this course is writing-active, writing-intensive, or writing-centered, and describe how the course satisfies the criteria for the type of writing course identified. (See Appendix *.)**

**PART III: OUTLINE OF THE COURSE**

| Week 1. | Forces and their effect on human movement |
| Week 2. | Linear Kinematics: Acceleration |
| Week 3. | Linear Kinematics: Inertia |
| Week 4. | Linear Kinematics: Momentum |
| Week 5. | Work and energy |
| Week 6. | Power and energy |
| Week 7. | Torques and movements of force |
Week 8.   Center of Gravity
Week 9.   Angular and Linear Displacement
Week 10.  Angular Velocity
Week 11.  Angular Acceleration
Week 12.  Angular Inertia
Week 13.  Angular Momentum
Week 14.  Fluid mechanics: water

PART IV: PURPOSE AND NEED

1. Explain the department’s rationale for developing and proposing the course.

   The amount of material for this class was more than what could adequately be covered in a 2 semester hour course. The majority of similar classes at other universities are 3 semester hours.

2. Justify the level of the course and any course prerequisites, co-requisites, or registration restrictions.

   Course content applies and expounds upon knowledge from the lower level KSS 2440 course; therefore this is a junior level course.

3. If the course is similar to an existing course or courses, justify its development and offering.

   This is a revised course.

4. Impact on Program(s):

   This course will be required in the Exercise Science concentration for Kinesiology and Sports Studies majors.

PART V: IMPLEMENTATION

1. Faculty member(s) to whom the course may be assigned:

   Dr. Jeff Willardson or any qualified faculty member in the Department of Kinesiology and Sports Studies.

2. Additional costs to students:

   None


PART VI: COMMUNITY COLLEGE TRANSFER

A community college course will not be judged equivalent to this course.
PART VII: APPROVALS

Date approved by the department or school: October 17, 2008

Date approved by the college curriculum committee: November 10, 2008

Date approved by the Honors Council (if this is an honors course): Not applicable.

Date approved by CAA: December 11, 2008        CGS: Not applicable.