Course information:
Copy and paste current course information from Class Search/Course Catalog.

Academic Unit | Human Systems Engineering | Department | The Polytechnic School
---|---|---|---
Subject | EGR |Number | 223 | Title | Biology of Human Systems (to be HSE 223 when new prefix is approved) |
Is this a cross-listed course? | (Choose one) | No | Units: | 3 |
Is this a shared course? | (choose one) | If so, list all academic units offering this course | No |
Course description: |

Requested designation: (Choose One)
Note: a separate proposal is required for each designation requested

Eligibility:
Permanent numbered courses must have completed the university's review and approval process.
For the rules governing approval of omnibus courses, contact Phyllis.Lucie@asu.edu or Lauren.Leo@asu.edu.

Submission deadlines dates are as follow:
For Fall 2015 Effective Date: October 9, 2014
For Spring 2016 Effective Date: March 19, 2015

Area(s) proposed course will serve:
A single course may be proposed for more than one core or awareness area. A course may satisfy a core area requirement and more than one awareness area requirements concurrently, but may not satisfy requirements in two core areas simultaneously, even if approved for those areas. With departmental consent, an approved General Studies course may be counted toward both the General Studies requirement and the major program of study.

Checklists for general studies designations:
Complete and attach the appropriate checklist
- Literacy and Critical Inquiry core courses (L)
- Mathematics core courses (MA)
- Computer/statistics/quantitative applications core courses (CS)
- Humanities, Arts and Design core courses (HU)
- Social-Behavioral Sciences core courses (SB)
- Natural Sciences core courses (SQ/SG)
- Cultural Diversity in the United States courses (C)
- Global Awareness courses (G)
- Historical Awareness courses (H)

A complete proposal should include:
- Signed General Studies Program Course Proposal Cover Form
- Criteria Checklist for the area
- Course Catalog description
- Course Syllabus
- Copy of Table of Contents from the textbook and list of required readings/books

Respectfully request that proposals are submitted electronically with all files compiled into one PDF. If necessary, a hard copy of the proposal will be accepted.

Contact information:
Name | Nancy J. Cooke | Phone | 480-727-5158 |
Mail code | 2880 | E-mail | ncooke@asu.edu |

Department Chair/Director approval: (Required)
Chair/Director name (Typed): Ann McKenna
Chair/Director (Signature): 
Date: 12/30/14

Rev. 1/94, 4/95, 7/98, 4/00, 1/02, 10/08, 11/11/12/11, 7/12, 5/14
Rationale and Objectives

Social-behavioral sciences use distinctive scientific methods of inquiry and generate empirical knowledge about human behavior, within society and across cultural groups. Courses in this area address the challenge of understanding the diverse natures of individuals and cultural groups who live together in a complex and evolving world.

In both private and public sectors, people rely on social scientific findings to consider and assess the social consequences of both large-scale and group economic, technological, scientific, political, ecological and cultural change. Social scientists' observations about human interactions with the broader society and their unique perspectives on human events make an important contribution to civic dialogue.

Courses proposed for a General Studies designation in the Social-Behavioral Sciences area must demonstrate emphases on: (1) social scientific theories, perspectives and principles, (2) the use of social-behavioral methods to acquire knowledge about cultural or social events and processes, and (3) the impact of social scientific understanding on the world.

Revised April 2014
Proposer: Please complete the following section and attach appropriate documentation.

### ASU--[SB] CRITERIA

**A SOCIAL-BEHAVIORAL SCIENCES [SB] course should meet all of the following criteria. If not, a rationale for exclusion should be provided.**

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
<th>Identify Documentation Submitted</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td><strong>1.</strong> Course is designed to advance basic understanding and knowledge about human interaction.**</td>
</tr>
<tr>
<td>X</td>
<td></td>
<td>Course description, syllabus, &amp; table of Contents from the textbook</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>2.</strong> Course content emphasizes the study of social behavior such as that found in:**</td>
</tr>
<tr>
<td>X</td>
<td></td>
<td>Psychology, Sociology</td>
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<tr>
<td></td>
<td></td>
<td><strong>ANTHROPOLOGY</strong> <strong>ECONOMICS</strong> <strong>CULTURAL GEOGRAPHY</strong> <strong>HISTORY</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>3.</strong> Course emphasizes:</td>
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<tr>
<td></td>
<td></td>
<td>a. the distinct knowledge base of the social and behavioral sciences (e.g., sociological anthropological).**</td>
</tr>
<tr>
<td>X</td>
<td></td>
<td>OR</td>
</tr>
<tr>
<td></td>
<td></td>
<td>b. the distinct methods of inquiry of the social and behavioral sciences (e.g., ethnography, historical analysis).**</td>
</tr>
<tr>
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<td></td>
<td><strong>4.</strong> Course illustrates use of social and behavioral science perspectives and data.**</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Course description, syllabus, &amp; table of Contents from the textbook</td>
</tr>
</tbody>
</table>

**THE FOLLOWING TYPES OF COURSES ARE EXCLUDED FROM THE [SB] AREA EVEN THOUGH THEY MIGHT GIVE SOME CONSIDERATION TO SOCIAL AND BEHAVIORAL SCIENCE CONCERNS:**

- Courses with primarily arts, humanities, literary or philosophical content.
- Courses with primarily natural or physical science content.
- Courses with predominantly applied orientation for professional skills or training purposes.
- Courses emphasizing primarily oral, quantitative, or written skills.
Explain in detail which student activities correspond to the specific designation criteria. Please use the following organizer to explain how the criteria are being met.

<table>
<thead>
<tr>
<th>Criteria (from checksheet)</th>
<th>How course meets spirit (contextualize specific examples in next column)</th>
<th>Please provide detailed evidence of how course meets criteria (i.e., where in syllabus)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The goal of this introductory course is to provide students with an understanding of the biological basis of human individual and social behavior. Topics specifically include emotion &amp; affective disorders (Chap 11, 16), human communication (Chap 14), learning (Chap 13), anxiety disorders (Chap 17), autistic disorders (Chap 17), and drug abuse (Chap 18).</td>
<td>See the classes from Oct. 20 through Oct. 27 and from Nov. 19 through Dec.1 in the syllabus.</td>
</tr>
<tr>
<td>2</td>
<td>The course provides a wealth of information that will be particularly beneficial for students in neuroscience, psychology, anthropology, and sociology. The covered topics include (but are not limited to) sexual behavior, emotional responses, perceptual and cognitive functions, learning, communication, mental illness, anxiety/stress disorders, autistic disorders, and drug abuse.</td>
<td>See the table of content from the textbook. Chapters 11, 16, 17, &amp; 18 emphasize specifically the study of social behavior such as emotional interactions, affective disorders, stress-related disorders, and drug abuse, which are also covered extensively in psychology and sociology.</td>
</tr>
<tr>
<td>3</td>
<td>The course teaches students a wealth of knowledge about the biological basis of human behavior. It also introduces students to a wide range of techniques and methods used to investigate human behavior (Chap 5).</td>
<td>Throughout this course, students will learn the biological basis of human individual and social behaviors such as eating (Chap 12), sleeping (Chap 9), sexual behavior (Chap 10), emotional responses (Chap 11), sensory perception (Chaps 6, 7, 9), learning and memory (Chap 13), language and cognitive functions (Chap 14), mental illness (Chaps 15, 16, 17), and drug abuse (Chap 18). Chapter 5 is devoted specifically to research methods.</td>
</tr>
<tr>
<td>4</td>
<td>This course uses a lot of social and behavioral studies to illustrate how our behavior is shaped and sometimes changed by the underlying biological or pathological processes. An emphasis is placed on applying the knowledge to some real-world problems like treatment of schizophrenia, affective disorders, stress-related problems, autistic disorders, drug abuse, etc.</td>
<td>See the classes from Nov. 17 through Dec. 1 in the syllabus.</td>
</tr>
</tbody>
</table>
Course Catalog Description

HSE 223: Biology of Human Systems

Introduction to the biological processes involved in many aspects of our behavior such as eating, sleeping, sexual behavior, emotional responses, sensory perception, learning, language, memory, cognitive functions, mental illness, and drug abuse. A foundational Social/Behavioral Science course to prepare students for advanced courses in psychology, anthropology, sociology, neuroscience, or related fields.
Instructor Information:

Dates of classes:  Tues & Thurs, Aug. 20 - Dec. 3
Instructor: Bing Wu, Ph.D.
Human System Engineering Program
Email: Bing.Wu@asu.edu (preferred contact method)
Work Phone: 480-727-3716 (O)
Office Hours: Tues & Thurs, 4:30 – 5:30 or by appointments through email
Office Location: 150E, Santa Catalina Hall, Polytechnic campus

Course Information:

Pre-requisites:  HSE 101, PSY 101, or EGR 103
Course Format: Lectures. The class will meet on Tuesdays and Thursdays from 3:00 to 4:15 pm at Room 120, Peralta Hall.
Course description:  Introduction to the biological processes involved in many aspects of our behavior such as eating, sleeping, sexual behavior, emotional responses, sensory perception, learning, language, memory, cognitive functions, mental illness, and drug abuse. A foundational Social/Behavioral Science course to prepare students for advanced courses in psychology, anthropology, sociology, neuroscience, or related fields.

Required Course Texts, Materials and Resources:

The required textbook is as follows:

Course materials like Powerpoint presentations and study guides for the exams will be available on the Blackboard (http://myasucourses.asu.edu).

Student Learning Outcomes
After successfully completing this course, students should be able to:

- Describe the methods used to study the biological basis of behavior;
- Explain the structure & functions of the nervous system;
- Discuss the role of the brain and nervous system in health and disease;
- Summarize the basic principles of psychopharmacology;
- Indicate the effects of the major neurotransmitters on behavior;
- Apply the principles of biopsychology to real-world human behavior and problems;
### Tentative Course Calendar

<table>
<thead>
<tr>
<th>Date</th>
<th>Class Topic &amp; Required Reading</th>
</tr>
</thead>
<tbody>
<tr>
<td>08/20/2015</td>
<td>Syllabus &amp; class introduction</td>
</tr>
</tbody>
</table>
| 08/25/2015  | Introduction to human biological systems  
Reading: Chapter 1 (pp. 1 - 26) |
| 08/27/2015  | Structure & Function of Cells of the Nervous System  
Reading: Chapter 2 (pp. 27 - 65) |
| 09/01/2015  | Structure of the Nervous System  
Reading: Chapter 3 (pp. 66 - 98) |
| 09/03/2015  | Psycho-pharmacology  
Reading: Chapter 4 (pp. 99 - 129) |
| 09/08/2015  | Methods & Strategies of Research  
Reading: Chapter 5 (pp. 130 - 163) |
| 09/10/2015  | Review (1)                        |
| 09/15/2015  | Exam 1                           |
| 09/17/2015  | Vision (1): Coding of Visual Information  
Reading: Chapter 6 (pp. 164 - 186) |
| 09/22/2015  | Vision (2): Analysis of Visual Information  
Reading: Chapter 6 (pp. 187 - 206) |
| 09/24/2015  | Audition & Vestibular System  
Reading: Chapter 7 (pp. 207 - 230) |
| 09/29/2015  | The Body Senses & Pain  
Reading: Chapter 7 (pp. 231 - 243) |
| 10/01/2015  | The Chemical Senses  
Reading: Chapter 7 (pp. 244 - 254) |
| 10/06/2015  | Review (2)                        |
| 10/08/2015  | Exam 2                           |
| 10/13/2015  | Fall Break – Classes Excused      |
| 10/15/2015  | Control of Movement  
Reading: Chapter 8 (pp. 255 - 287) |
| 10/20/2015  | Learning and Memory  
Reading: Chapter 13 (pp. 434 - 478) |
| 10/22/2015  | Human Communications  
Reading: Chapter 14 (pp. 479 - 515) |
| 10/27/2015  | Emotion  
Reading: Chapter 11 (pp. 359 - 392) |
| 10/29/2015  | Ingestive Behavior  
Reading: Chapter 12 (pp. 393 - 433) |
| 11/03/2015  | Sleep & Biological Rhythms  
Reading: Chapter 9 (pp. 288 - 322) |
| 11/05/2015  | Review (3)                        |
| 11/10/2015  | Exam 3                           |
| 11/13/2015  | Reproductive Behavior  
Reading: Chapter 10 (pp. 323 - 358) |
| 11/17/2015  | Neurological Disorders  
Reading: Chapter 15 (pp. 516 - 551) |
11/19/2015  Schizophrenia and the Affective Disorders  
Reading: Chapter 16 (pp. 552 - 583)

11/24/2015  Anxiety Disorders, Autistic Disorder, ADHD and Stress  
Reading: Chapter 17 (pp. 584 - 613)

11/26/2015  Thanksgiving – Classes Excused

12/01/2015  Drug Abuse  
Reading: Chapter 18 (pp. 614 - 643)

12/03/2015  Review (4)

12/08/2015  Exam 4

**WARNING:** Please always remember that the purpose of this course is to study the biological basis of human behavior. Some content like the biological basis of sexuality may be deemed offensive by some students. If that was the case, please let me know and feel free to discuss it with me.

**Course Assignments**

For each topic, there will be lectures and assigned readings. The course requirements are (1) participation in class, (2) quizzes, and (3) four exams.

**Readings:** Students need to read the assigned book chapters before class.

**Quizzes:** Quizzes will be given at the beginning of each class (excluding the review and exam days). They are designed to test your understanding of the reading assignment and ensure that you come prepared. Each quiz will account for 1% of the total grade. The quizzes also serve as an attendance record. NO make-up quizzes will be given. If a student misses a quiz, he or she will receive NO point for that quiz.

**Exams:** There will be four exams based on the materials covered in the classroom. The exams will be *closed-book, closed-notes, closed-homework, and taken in class*. The format is a combination of multiple-choice, short answer, and short essay. There will be NO make-up exam unless there is a documented emergency. Anyone missing an exam without a ASU sanctioned excuse will receive a zero score.

The course grade will be based as follows:

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<thead>
<tr>
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<tbody>
<tr>
<td>Exam 1</td>
<td>20 pts</td>
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<tr>
<td>Exam 2</td>
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<tr>
<td>Exam 3</td>
<td>20 pts</td>
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<tr>
<td>Exam 4</td>
<td>20 pts</td>
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<tr>
<td>Quizzes</td>
<td>20 pts</td>
</tr>
<tr>
<td>TOTAL</td>
<td>100 pts</td>
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</table>
### Grading Scale

Final grades will be assigned as follows:

<table>
<thead>
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<th>Grade</th>
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<tbody>
<tr>
<td>A+</td>
<td>&gt;=96%</td>
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<tr>
<td>A</td>
<td>93-95%</td>
</tr>
<tr>
<td>A-</td>
<td>90-92%</td>
</tr>
<tr>
<td>B+</td>
<td>86-89%</td>
</tr>
<tr>
<td>B</td>
<td>83-85%</td>
</tr>
<tr>
<td>B-</td>
<td>80-82%</td>
</tr>
<tr>
<td>C+</td>
<td>76-79%</td>
</tr>
<tr>
<td>C</td>
<td>70-75%</td>
</tr>
<tr>
<td>D</td>
<td>60-69%</td>
</tr>
<tr>
<td>E</td>
<td>&lt;60%</td>
</tr>
<tr>
<td>XE</td>
<td>Failure due to academic dishonesty</td>
</tr>
</tbody>
</table>

NO incomplete grades will be given except in cases of serious medical emergencies as evidenced by a documented report.

### Grade Appeals

ASU has formal and informal channels to appeal a grade. If you wish to appeal any grading decisions, please see [http://catalog.asu.edu/appeal](http://catalog.asu.edu/appeal).

### Classroom behavior:

- **Attendance and Participation**
  
  Your presence for the entire class period is mandatory and critical to academic success. The following penalties will be imposed for missing class without a valid and verifiable excuse: Every unexcused absence causes a deduction of 5 points from the final grade. Absences will be excused ONLY if the student has a ASU sanctioned excuse. The excused absences include those resulting from: (1) illness, death in the family or other emergency, or other reasons beyond the student’s control; (2) a student’s religious beliefs, observances, and practices that are in accord with ACD 304-04 (http://www.asu.edu/aad/manuals/acad/acd304-04.html), “Accommodation for Religious Practices”, and (3) those university sanctioned events/activities that are in accord with ACD 304-02 (http://www.asu.edu/aad/manuals/acad/acd304-02.html), “Missed Classes Due to University-Sanctioned Activities”.

- **Late and Missing Assignments**
  
  Make-up exams will NOT be given unless the student provides documentation of the illness or emergency. Anyone missing an exam without a university sanctioned excuse will receive a zero score.

- **Cell Phone and Recording Devices**
  
  Always turn off your cellular phone before you enter our classroom. You are not allowed to receive and make phone calls during class meetings. Other communication devices and recording devices are also strictly prohibited from the classroom.

- **Electronic Communication**
  
  Acceptable use of university computers, internet and electronic communications can be found in the Student Code of Conduct (http://www.asu.edu/aad/manuals/usi/us104-01.html) and in the University’s Computer, Internet, and Electronic Communications Policy (http://www.asu.edu/aad/manuals/acad/acd125.html).
University policies:

- **Academic Integrity**
  All students at ASU are expected to follow the Student Code of Conduct. Each student must act with honesty and integrity, and must respect the rights of others in carrying out all academic assignments. Plagiarism, and any other form of academic dishonesty that is in violation with the Student Code of Conduct, will not be tolerated. All necessary and appropriate sanctions will be issued to all parties involved with plagiarizing any and all course work. For more information, please see the ASU Student Academic Integrity Policy: [http://provost.asu.edu/academicintegrity](http://provost.asu.edu/academicintegrity).

- **Nondiscrimination, Anti-Harassment, and Nonretaliation**
  Arizona State University is committed to providing the university community, including students, faculty, staff, and guests, with an environment that is free of harassment, discrimination, or retaliation. ASU expressly prohibits harassment, discrimination, and retaliation by employees, students, contractors, or agents of the university based on protected status, including race, color, religion, sex, national origin, age, disability, veteran status, sexual orientation, and gender identity. If you believe that you have been subjected to any discrimination, harassment, or retaliation in violation of this policy, or you believe that this policy has been violated, you should report the matter immediately to the Office of Equity and Inclusion ([https://cfo.asu.edu/hr-equityandinclusion](https://cfo.asu.edu/hr-equityandinclusion); Phone: (480) 965-5057; Fax: (480) 237-7998; Email: EqualityandInclusion@mainex1.asu.edu).

- **Policy against Threatening Behavior**
  Any kind of abusive, disruptive, threatening, or violent behaviour will NOT be tolerated. Students are expected to comply with the ASU policy against threatening behavior, per the Student Services Manual, SSM 104–02 ([http://www.asu.edu/aad/manuals/ssm/ssm104-02.html](http://www.asu.edu/aad/manuals/ssm/ssm104-02.html)), “Handling Disruptive, Threatening, or Violent Individuals on Campus”. Any violent or threatening conduct by an ASU student in this class will be reported to the ASU Police Department and the Office of the Dean of Students.

- **Disability Accommodations**
  To request academic accommodations due to a disability, please contact the ASU Disability Resource Center ([https://eoss.asu.edu/drc](https://eoss.asu.edu/drc); Phone: (480) 965-1234; Fax: (480) 965-0441; Email: DRC@asu.edu). This is a very important step as accommodations may be difficult to make retroactively. If you have a letter from their office indicating that you have a disability which requires academic accommodations, in order to assure that you receive your accommodations in a timely manner, please present this documentation to me no later than the end of the first week of the semester so that your needs can be addressed effectively.

- **Religious Accommodations**
  Students will not be penalized for missing class due to religious obligations, holidays, observances, and practices that are in accord with ACD 304–04 ([http://www.asu.edu/aad/manuals/acd/acd304-04.html](http://www.asu.edu/aad/manuals/acd/acd304-04.html)). Students who need to be absent from class due to the observance of a religious holiday or participate in
required religious functions must notify me in writing as far in advance of the holiday/obligation as possible. Students will need to identify the specific holiday or obligatory function to me. The student should contact me to make arrangements for making up tests/assignments within a reasonable time.

- **Military Personnel Statement**
  A student who is a member of the National Guard, Reserve, or other U.S. Armed Forces branch and is unable to complete classes because of military activation may request complete or partial administrative unrestricted withdrawals or incompletes depending on the timing of the activation. For information, please see http://www.asu.edu/aad/manuals/usi/usi201-18.html.

**Syllabus disclaimer:**
This syllabus is intended to give the student guidance in what may be covered during the semester. Efforts will be made to follow the syllabus as outlined above, but the possibility exists that unforeseen events will make syllabus changes necessary. The instructor reserves the right to make changes to this syllabus and/or course schedule. If changes are made, students will be notified in a timely manner by e-mail or by an announcement in class.
<table>
<thead>
<tr>
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<th>Title</th>
<th>Page</th>
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