Course Description

San José State University
Dept. Physics & Astronomy
Phys 23 (Animation Physics) Fall 2017
Section 01 (Hybrid); Section 80 (On-line)

[Link to Instructor Info](https://sjsu.instructure.com/courses/1239705/pages/contact-info) [Link to Course Calendar](https://sjsu.instructure.com/courses/1239705/assignments/syllabus)

Course and Contact Information
Instructor: Alejandro Garcia
Office Location: Science 245
Telephone: (408) 924-5244
Email: Alejandro.Garcia@sjsu.edu
Office Hours: Thurs., 1pm-2pm

Class Days/Time: Thurs., 6pm-7pm (Section 01); Online only (Section 80)
Classroom: Science 258 (Section 01); Online only (Section 80)
Prerequisites: None
GE/SJSU Studies Category: Area B1
Course Format: Hybrid (Section 01); Online (Section 80)

Technology Intensive, Hybrid, and Online Courses
Section 01 is a hybrid class that is primarily online but meets roughly once per week; Section 80 is entirely online. Both sections rely heavily on Canvas (login website at http://sjsu.instructure.com). Computer and internet access is required for this course.

Faculty Web Page and MYSJSU Messaging
Course materials such as syllabus, handouts, notes, assignment instructions, etc. can be found on the Canvas Learning Management System course page (login website at http://sjsu.instructure.com). You are responsible for regularly checking with the messaging systems through MySJSU at http://my.sjsu.edu and through Canvas to learn of any updates.

Course Description
This course presents principles and concepts of physics relevant to animation and special effects. Students will demonstrate mastery of this scientific knowledge in the critical analysis of films, shows, video games, etc., and in creating their own animated shorts.

Who Should Take This Course? Animation / Illustration majors (ideally concurrent with Ani 28); Film majors; non-science majors interested in physics and in animation / special-effects. Science and engineering majors will not find this course to be useful because they cover the same physics in their required courses.

Goals and Learning Outcomes
Visit the Goals and Learning Outcomes page (https://sjsu.instructure.com/courses/1239705/pages/goals-and-learning-outcomes) for a full description. Each module also includes its own list of learning outcomes for the module.

Required Materials
There is no textbook in this course; all course materials will be posted on this website. Several assignments use public-domain software or trial versions of applications so you will need access to a personal computer (of any type) on which you can install software. It is strongly recommended that you download Adobe Creative Cloud (http://its.sjsu.edu/services/software/adobe/index.html) and Microsoft Office (http://its.sjsu.edu/services/software/microsoft-students/index.html) software, which are available for free to SJSU students. Several assignments require creating short digital
video clips so you will need access to a digital camera; note that most compact cameras have the option of recording video. Video equipment may also be checked out from Media Services (http://www.sjsu.edu/at/ms/), located on the ground floor of the Instructional Resources Center (IRC).

Course Requirements and Assignments
All course assignments will be distributed and turned in using Canvas; see the Assignments page on Canvas for due dates and other information. Requirements and assignments in this course fall into four general categories:

On-line Quizzes: Each module has several short (10-12 minute) lecture videos followed by a two-question quiz administered by Canvas. Each quiz question is worth one point (see Grading Info below).

Homework Assignments: There are weekly homework assignments and each is worth between 20 to 40 points. Assignments include: Shooting and analyzing digital video; scripting, filming, and producing stop-motion animation; creating photo-realistic images and stereoscopic-3D photos. There are also two term papers (see below).

Mini-Tests: There are six in-class “mini-tests” during the semester; questions on these tests are taken from the on-line quiz questions linked to each lecture video. The mini-tests may be taken either in-class or on-line. You should not take both the in-class and the on-line mini-tests, if you do then you will receive the lower of the two scores. There is also a final exam at the end of the semester (see below).

Term Papers: You will write two term papers in this course. The required length of each term paper is 750 words, which is about 3 double-spaced typewritten pages (not counting images). Each term paper is worth 120 points and will be graded based on how well the paper addresses the topic (60 points) and how well the paper is written (60 points).

Content Rubric (60 points) The assignment for each term paper is:

- First Term Paper (“Science Fact or Cinematic Fiction?”) Describe two scenes from two different films, shows, or video games that incorrectly illustrate a basic physics law or principle and a scene from a third film, show, or video game in which that physics law or principle is presented accurately.

- Second Term Paper (“The Nexus of Art and Science”) Discuss two ways in which science, specifically physics, has influenced or been influenced by the cinematic arts, including any resulting political and moral impacts.

The content of the term papers will be scored by the following rubric:

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<th>60 points</th>
<th>40 points</th>
<th>20 points</th>
<th>0 points</th>
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<tr>
<td>Content</td>
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<tr>
<td>The narrative is well-developed and addresses the assigned topic with a consistent and effective point-of-view and with the right level of detail. All the examples presented in the paper are strong.</td>
<td>The narrative is good, with many strong points presented that are relevant to the assigned topic, but some may lack details. One of the examples presented in the paper is somewhat weak.</td>
<td>The narrative is uneven. There are some good points made and some examples that address the assigned topic. However, in many places the narrative either lacks details, presents some incorrect information, or fails to demonstrate relevance to the point being made.</td>
<td>The narrative is weak and mostly fails to address the assigned topic. Main points are poorly developed or irrelevant to the main theme. The examples discussed are poorly chosen; their accompanying narrative is disjointed and rambling.</td>
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Style Rubric (60 points) The style of the writing in the term papers will be scored by the following rubric:
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<th></th>
<th>15 points</th>
<th>10 points</th>
<th>5 points</th>
<th>0 points</th>
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<tr>
<td><strong>Introduction and Conclusion</strong></td>
<td>Well-developed introduction engages the reader and creates interest. Conclusion effectively wraps up and goes beyond summarizing main ideas.</td>
<td>Introduction creates interest. Thesis clearly states the position. Conclusion wraps up the presentation in a satisfying way.</td>
<td>Introduction adequately explains the background, but may lack detail or ramble. Conclusion is recognizable and ties up almost all loose ends.</td>
<td>Introduction is either not related to the topic, a random collection of information, or otherwise unclear. Paper ends without a satisfying conclusion.</td>
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<tr>
<td><strong>Organization</strong></td>
<td>Logical progression of ideas with a clear structure that enhances the points being made. Transitions are mature and graceful. Images/video, if any, serve to complement the presentation.</td>
<td>Logical progression of ideas. Transitions are present equally throughout essay. Images/video, if any, contribute to the overall points.</td>
<td>Organization is mostly clear. Transitions are present. Some rambling in places. Images/video, if any, pleasant but not necessary.</td>
<td>Little or no discernable organization. Transitions are not present. Images/video, if any, do not contribute in any meaningful way.</td>
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<tr>
<td><strong>Style</strong></td>
<td>Writing is smooth, skillful, and coherent. Sentences are strong and expressive with varied structure. Diction is consistent and words well chosen.</td>
<td>Writing is clear and sentences have a varied structure. Diction is consistent.</td>
<td>Writing is clear, but sentences may lack variety. Diction is appropriate.</td>
<td>Writing is confusing, hard to follow. Contains fragments and/or run-on sentences. Inappropriate diction.</td>
</tr>
<tr>
<td><strong>Mechanics</strong></td>
<td>Punctuation, spelling, and capitalization are correct. No significant errors.</td>
<td>Punctuation, spelling, and capitalization are generally correct, with few errors.</td>
<td>A handful of errors in punctuation, spelling, capitalization.</td>
<td>Distracting errors in punctuation, spelling, capitalization.</td>
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**Final Examination**

(Section 10) At the end of the semester there is an in-class final exam consisting of 10 essay questions based on material covered in the lecture videos. See the schedule below for the day, time, and place of the final exam. You also have the option to take the on-line final exam (see below) instead of the in-class exam.

(Section 80) At the end of the semester there is an on-line final exam consisting of 50 quiz questions based on material covered in the lecture videos.

**Grading Information**

Your grade will be based on the number of experience points (XP) that you accumulate by the end of the course. These points are mostly earned from assignments: Two term papers (120 points each); Homework assignments (totaling 400 points); On-line quizzes (250 points); Mini-tests (60 points); and Final Exam (50 points). There are also Extra Credit opportunities listed on the course Canvas page; extra credit is limited to a maximum of 100 points.

Course grade versus total XP is tabulated below:
Grade | A+ | A | A-  
--- | --- | --- | ---  
Total XP | > 1050 | 1050-951 | 950-926  
Grade | B+ | B | B-  
Total XP | 925-901 | 900-851 | 850-826  
Grade | C+ | C | C-  
Total XP | 825-801 | 800-751 | 750-726  
Grade | D+ | D | D-  
Total XP | 725-701 | 700-651 | 650-626  
Grade | F |   |    
Total XP | < 625 |   |   

On-line quizzes must be completed by their due dates, as listed on Canvas. Homework assignments and term papers may be turned in after their due date but with a 50% point penalty. No late work will be accepted after the date of the final exam.

**Classroom Protocol**

(Section 01) Although most of the work in this class is done on-line we do meet in-class regularly. On alternate weeks there will be an in-class "mini-test" on the material covered in the online videos. There are also various opportunities for participating during class so be sure to arrive on time and be prepared to contribute. According to University Policy F15-12, “Students are expected to attend all meetings for the courses in which they are enrolled as they are responsible for material discussed therein and active participation is frequently essential to ensure maximum benefit to all class members. In some cases, attendance is fundamental to course objectives; for example, students may be required to interact with others in the class. Attendance is the responsibility of the student.”

(Section 80) Although the class does not meet in person you are encouraged to participate in the Discussions forum on Canvas.

**SJSU Support Services**

For help with technology, tutoring, writing, counseling, etc. see:

[http://www.sjsu.edu/gup/syllabusinfo/](http://www.sjsu.edu/gup/syllabusinfo/)

For questions regarding accessibility see:

[http://www.sjsu.edu/aec/](http://www.sjsu.edu/aec/)

**University Policies**

Per University Policy S16-9, university-wide policy information relevant to all courses, such as academic integrity, accommodations, etc. will be available on Office of Graduate and Undergraduate Programs’ Syllabus Information web page at:

[http://www.sjsu.edu/gup/syllabusinfo/](http://www.sjsu.edu/gup/syllabusinfo/)