

# Curriculum Committee Agenda Wednesday, October 16, 2019, 3:00 p.m. Loft Conference Room – Drescher Hall 300-E

Stacy Neal

Patricia Ramos

Estela Ruezga

Scott Silverman

Esau Tovar

Tammara Whitaker A.S. President

Members:

Dana Nasser, Chair Sheila Cordova Nick Mata Brandon Reilly Jason Beardsley, Vice ChairGuido Davis Del Piccolo Emin Menachekanian Lydia Strong Brenda Antrim Gary Huff Jennifer Merlic Toni Trives Garen Baghdasarian Sasha King Jacqueline Monge Audra Wells Fariba Bolandhemat Jae Lee Estela Narrie Michael John Siemer (A.S.) Lee Pritchard Safa Saleem (A.S.) Dione Carter Jamar London

Rachel Demski

Kiersten Elliott

Maral Hyeler

Vicki Drake

### **Interested Parties:**

Clare Battista Maria Bonin Patricia Burson Susan Caggiano

# Ex-Officio Members:

Nathaniel Donahue

(Information items are listed numerically; action items are listed alphabetically)

| I.<br>II.<br>III.<br>IV.<br>V. | Call to Order and Approval of Agenda<br>Public Comments (Two minutes is allotted to any member of the public who wishes to address the Committee.)<br>Announcements<br>Approval of Minutes     |
|--------------------------------|--|
| VI.                            | Information Items  |
|                                | <ol> <li>Redesign of the Student Experience</li> <li>Curriculum Representative META Training</li> </ol>  |
|                                | (Courses: Non-Substantial Changes)<br>3. PHYSCS 7 General Physics 2 with Lab<br>4. PHYSCS 22 Electricity And Magnetism with Lab<br>5. PHYSCS 23 Fluids, Waves, Thermodynamics, Optics with Lab |
| VII                            | . Action Items   |
|                                | (Courses: Substantial Changes)<br>a. ENGR 11 Engineering Graphics and Design (add prerequisites: MATH 3, MATH 4) 5   |
|                                | (Courses: Distance Education)<br>b. ASTORN 3 Stellar Astronomy with Laboratory14   |
|                                | (Programs: Revisions)<br>c. Anthropology Associate in Arts for Transfer (minor updates to PLOs)  |
|                                | 1 of 20  |

- d. Changes to degrees and certificates as a result of courses considered on this agenda
- VIII. New Business
- IX. Old Business
- X. Adjournment

Please notify Dana Nasser (x4841) or Jason Beardsley (x8054) if you are unable to attend this meeting.



## Curriculum Committee Minutes Wednesday, October 2, 2019, 3:00 p.m. Loft Conference Room – Drescher Hall 300-E

| Members Present:            |                         |                    |                     |
|-----------------------------|-------------------------|--------------------|---------------------|
| Dana Nasser, <i>Chair</i>   | Dione Carter            | Nick Mata          | Lee Pritchard       |
| Jason Beardsley, Vice Chair | Sheila Cordova          | Emin Menachekanian | Brandon Reilly      |
| Brenda Antrim               | Guido Davis Del Piccolo | Jennifer Merlic    | Toni Trives         |
| Garen Baghdasarian          | Sasha King              | Jacqueline Monge   | Audra Wells         |
| Fariba Bolandhemat          | Jamar London            | Estela Narrie      | Safa Saleem (A.S.)  |
| Members Absent:             |                         |                    |                     |
| Gary Huff                   | Jae Lee                 | Lydia Strong       | Yongha Hwang (A.S.) |
| Others Present:             |                         |                    |                     |
| Susan Caggiano<br>Sal Veas  | Rachel Demski           | Sehat Nauli        | Steven Sedky        |

(Information items are listed numerically; action items are listed alphabetically)

- Call to Order and Approval of Agenda
  Meeting called to order at 3:08 pm. Motion to approve the agenda with no revisions.
  Motion made by: Lee Pritchard; Seconded by: Estela Narrie
  The motion passed unanimously (Dione Carter and Jennifer Merlic were not present for vote)
- II. Public Comments

None

## III. Announcements

Sheila Cordova announced IndieCade (International Festival of Independent Games) will be happening October 10-12 at the CMD campus; IndieCade was held at the CMD last year, and they'll be returning this year. For more information visit: <u>https://www.indiecade.com/</u>

## **IV. Approval of Minutes**

Motion to approve the minutes of the September 18 meeting with no revisions. **Motion made by:** Jason Beardsley; **Seconded by:** Jamar London The motion passed unanimously (Dione Carter and Jennifer Merlic were not present for vote)

## V. Chair's Report

- META training workshop on Thursday, 10/10 at 11:15 a.m. 12:35 p.m. in BUS 253
- Attended AACC Pathways Institute 2.0 and explained the significance of defining effective Student Learning Outcomes and Program Learning Outcomes
- Discussed that we will have another META training at the next Curriculum Committee meeting to review the Curriculum Rep's approval process

## VI. Information Items

1. Redesign of the Student Experience

(Courses: Non-Substantial Changes)

- 2. ENGR 1 Introduction to Engineering
- 3. ENGR 12 Statics
- 4. ENGR 16 Dynamics
- 5. ENGR 21 Circuit Analysis
- 6. ENGR 22 Circuit Analysis Lab
- 7. PHYSCS 12 Introductory Physics Non-Lab
- 8. PHYSCS 14 Introductory Physics with Laboratory

## **VII. Action Items**

(Programs: Revisions)

- a. Management and Leadership AS/Certificate of Achievement
  - Certificate of Achievement being separated from AS degree (no changes to AS)
  - Remove BUS 5 from required courses in Certificate of Achievement (reducing required units to 9); overall Certificate of Achievement units reduced to 18
     Motion to table the program pending revisions of the Program Learning Outcomes and possible change in program name

Motion made by: Guido Davis Del Piccolo; Seconded by: Sheila Cordova The motion passed unanimously

- b. Sales and Promotion
  - Certificate of Achievement being separated from AS degree (no changes to AS)
  - Remove BUS 1, BUS 22, BUS 32, BUS 34 from required courses (reducing required units to 9); remove BUS 5, BUS 8, BUS 62 and add BUS 22, BUS 34, BUS 35 to electives; increase elective units from 3 to 6; overall certificate units reduced to 15 Motion to table the program pending revisions of the Program Learning Outcomes and possible change in program name

Motion made by: Guido Davis Del Piccolo; Seconded by: Sheila Cordova The motion passed unanimously

- c. Small Business Tax Practice Certificate of Achievement
  - Department Certificate being converted to Certificate of Achievement (no changes to courses and/or units)

Motion to approve Small Business Tax Practice Certificate of Achievement with no revisions

**Motion made by:** Estela Narrie; **Seconded by:** Toni Trives The motion passed unanimously

- d. Changes to degrees and certificates as a result of courses considered on this agenda None no vote needed/taken
- VIII. New Business None
- IX. Old Business None
- X. Adjournment The meeting was adjourned at 4:34 pm.

| Santa Monica College  |    |
|---|----|
| Course Outline for ENGINEERING 11, Engineering Graphics and Desig | In |

| Units:  | 3.00  |  |
|---|-------|--|
| Total Instructional Hours (usually 18 per unit):      | 90.00 |  |
| Hours per week (full semester equivalent) in Lecture: | 2.00  |  |
| In-Class Lab:   | 3.00  |  |
| Arranged:   | 0.00  |  |
| Outside-of-Class Hours                                | 72.00 |  |

| Date Submitted:       | August 2019                 |
|-----------------------|-----------------------------|
| Transferability:      | Transfers to CSU, UC        |
| Degree Applicability: | Credit - Degree Applicable  |
| Prerequisite(s):      | MATH 2 or MATH 3 and MATH 4 |

## Rationale

This is a required course for most engineering majors, including mechanical engineering and electrical engineering, which make up the majority of the engineering student population.

## I. Catalog Description

This course covers the principles of engineering drawings to visually communicate engineering designs. The course also serves as an introduction to computer-aided design (CAD). Topics include the development of visualization skills, orthographic projections, dimensioning and tolerancing practices, and an introduction to the engineering design process. Sketching, engineering drawings, and 3D CAD solid modeling skills are developed. The use of CAD software is an integral part of the course.

- **II. Examples of Appropriate Text or Other Required Reading:** (include all publication dates; for transferable courses at least one text should have been published within the last five years)
  - 1. <u>SOLIDWORKS 2016 and Engineering Graphics An Integrated Approach</u>, Shih, R.H, SDC Publications © 2016;
  - 2. <u>Engineering Graphics Essentials</u>, 5, Plantenberg, K., SDC Publications © 2016, ISBN: 1630570524;

## III. Course Objectives

Upon completion of this course, the student will be able to:

- 1. Apply rules of orthographic projection to create multiview drawings.
- 2. Create pictorials from orthographic views.
- 3. Use CAD software to create 2D engineering drawings, including working drawings and assembly drawings and 3D models and assemblies.
- 4. Create auxiliary and section views of an object following correct conventions.
- 5. Apply standards of dimensioning and tolerancing to engineering drawings.
- 6. Apply the engineering design process to a design project.

## **IV. Methods of Presentation:**

Group Work, Lab, Lecture and Discussion, Projects

## V. Course Content

| <u>% of</u><br>Course | Topic                              |
|-----------------------|------------------------------------|
| 6.00%                 | Engineering Design                 |
| 5.00%                 | Basic engineering drawing concepts |

| 5.00%   | Visualization skills                                      |
|---------|---|
| 5.00%   | Use of engineering/architect scales                       |
| 5.00%   | Multiview drawings  |
| 8.00%   | Auxiliary views   |
| 8.00%   | Pictorial projections                                     |
| 8.00%   | Section Views   |
| 8.00%   | Dimensioning  |
| 8.00%   | Tolerancing   |
| 8.00%   | Threaded fastener terminology                             |
| 20.00%  | CAD: 2D Construction and Editing Tools, 3D solid modeling |
| 6.00%   | Detail and Assembly Drawings                              |
| 0.00%   | Descriptive Geometry (optional)                           |
| 100.00% | Total   |

## Vb. Lab Content:

| <u>% of</u><br>course | Topic   |
|-----------------------|---|
| 10.00%                | Engineering Design  |
| 10.00%                | Basic engineering drawing concepts                        |
| 5.00%                 | Visualization skills                                      |
| 5.00%                 | Use of engineering/architect scales                       |
| 5.00%                 | Multiview drawings  |
| 10.00%                | Auxiliary and Sectional Views                             |
| 10.00%                | Pictorial projections                                     |
| 15.00%                | Dimensioning and Tolerancing                              |
| 25.00%                | CAD: 2D Construction and Editing Tools, 3D solid modeling |
| 5.00%                 | Detail and Assembly Drawings                              |
| 100.00%               | Total   |

# VI. Methods of Evaluation: (Actual point distribution will vary from instructor to instructor but approximate values are shown.)

| Percentage | Evaluation Method   |
|------------|---|
| 30 %       | Exams/Tests - 2-3 midterm examinations covering lecture and laboratory material |
| 20 %       | Final exam - Cumulative final examination                                       |
| 15 %       | Homework - Weekly homework assignments based on reading and in-class work       |
| 15 %       | Lab Reports - Weekly laboratory exercises                                       |

| 20 %  | Projects - Final design project including an engineering design document as a final report |
|-------|--|
| 100 % | Total  |

## VII. Sample Assignments:

**Sample Assignment 1:** Please see attached file ENGR\_11\_Assignment **Sample Assignment 2:** Please see attached file ENGR\_11\_Assignment

## VIII. Student Learning Outcomes

1. Demonstrate the ability to generate two- and three-dimensional and pictorial drawings of solid models using Computer Aided Drafting (CAD) for an engineering product using standard drawing conventions recognized in the engineering field.

## Prerequisite / Corequisite Checklist and Worksheet

## Engineering 11 ; Engineering Graphics and Design

## Prerequisite: MATH 3 ; Trigonometry with Applications

Other prerequisites, corequisites, and advisories also required for this course: MATH 2; MATH 4 (Please note that a separate sheet is required for each prerequisite, corequisite, or advisory)

## SECTION 1 - CONTENT REVIEW: If any criterion is not met, the prerequisite will be disallowed.

|    | Criterion   | Met | Not<br>Met |
|----|---|-----|------------|
| 1. | Faculty with appropriate expertise have been involved in the determination of the prerequisite, corequisite or advisory.  | X   |            |
| 2. | The department in which the course is (will be) taught has considered course objectives in accordance with accreditation standards.   | Χ   |            |
| 3. | Selection of this prerequisite, corequisite or advisory is based on tests, the type and number of examinations, and grading criteria.   | X   |            |
| 4. | Selection of this prerequisite, corequisite or advisory is based on a detailed course syllabus and outline of record, related instructional materials and course format.                        | Χ   |            |
| 5. | The body of knowledge and/or skills which are necessary for success before and/or concurrent with enrollment have been specified in writing.  | Χ   |            |
| 6. | The course materials presented in this prerequisite or corequisite have been reviewed and determined to teach knowledge or skills needed for success in the course requiring this prerequisite. | Χ   |            |
| 7. | The body of knowledge and/or skills necessary for success in the course have been matched with the knowledge and skills developed by the prerequisite, corequisite or advisory.                 | Χ   |            |
| 8. | The body of knowledge and/or skills taught in the prerequisite are not an instructional unit of the course requiring the prerequisite.  | Χ   |            |
| 9. | Written documentation that steps 1 to 8 above have been taken is readily available in departmental files.   | X   |            |

## SECTION II - ADDITIONAL LEVEL OF SCRUTINY:

In addition to the affirmation of content review listed in section I, an additional level of scrutiny is also required. The level of scrutiny depends on which type of prerequisite is involved. There are six types and each is listed below. Please identify which one is being used to justify the proposed prerequisite. The additional level of scrutiny corresponding to each type of prerequisite is identified below.

Type 1: Standard Prerequisite (required prerequisite at UC or CSU) Identify three UC or CSU campuses that offer the equivalent course with the equivalent prerequisite. List schools here: CSU Northridge, CSU Fresno, San Francisco State University Complete the Prerequisite Worksheet Type 2: Sequential within and across disciplines (e.g., Physics 7, 8, 9, ...) Complete the Prerequisite Worksheet



Type 3: Course in communication or computational skills as prerequisite for course other than another skills course (e.g., English 1 prerequisite for Anatomy 1)

Complete the Prerequisite Worksheet Complete Data Analysis

Type 4: Program prerequisites

Prerequisite must be required for at least one of the courses in the program. Explain:

Type 5: Health and Safety

Students who lack the prerequisite might endanger themselves, other students or staff. Explain:

Type 6: Recency and other measures of readiness (miscellaneous)

Data must be collected according to sound research principles in order to justify such prerequisites.

Complete the Prerequisite Worksheet

## **Prerequisites using Content Review**

In order to properly justify/substantiate any prerequisite, we need to first determine what skills are <u>necessary</u> for students to be successful (skills without which they will likely not succeed (i.e., pass the course)).

• Keep in mind that "success" in the course means "passing" the course. "Success" does not mean "more likely to get a B or higher".

Once we've identified what are the "entrance skills" necessary for success, we then need to look at the "exit skills" (objectives) of our existing courses to determine which of our courses sufficiently prepares students (based on the entrance skills) to be successful in the course in question.

- It is highly unlikely that there will be a "1-to-1 relationship" between the entrance skills and exits skills.
  - Course A, for example, may have 10 objectives, but perhaps only 5 (or even just 1) are essential for success in Course B. Only the relevant exit skills should be used to justify/substantiate a prerequisite.

## Completing the prerequisite worksheet:

The entrance skills must be worded as SKILLS. "What skills do students need to have BEFORE the course begins in order to be successful?"

For example:

- "Learn how to read college level textbooks" is NOT an entrance skill.
- "Ability to read college level textbooks" IS an entrance skill.

Once the entrance skills are determined, we can then figure out which course(s) are necessary as prerequisites (based on matching up the exit skills (objectives) of that course(s) with the entrance skills of the course in question).



# **Prerequisite Worksheet**

## ENTRANCE SKILLS FOR (the course in question)

(What the student needs to be able to do or understand BEFORE entering the course in order to be successful)

| A) | Recognize and use the vocabulary of angles.   |
|----|---|
| B) | Use right triangles to evaluate the six trigonometric functions of a given acute angle. |
| C) | Use properties of trigonometric and inverse trigonometric functions.                    |
| D) |   |

## EXIT SKILLS (objectives) FOR (the prerequisite course)

(What the student has the demonstrated ability to do or understand AFTER successful completion of this course)

| angles.   |
|---|
| triangles) to evaluate the six trigonometric functions of a given |
|   |
| nverse trigonometric functions, including the law of sines and    |
|   |
|   |
| 1<br>-  |

|                            |   |   | EN | TRANCE | SKILLS | FOR ( XX | (X) |   |   |
|----------------------------|---|---|----|--------|--------|----------|-----|---|---|
| EXIT SKILLS FOR<br>( XXX ) |   | А | В  | С      | D      | Е        | F   | G | Н |
|                            | 1 | Х |    |        |        |          |     |   |   |
|                            | 2 |   | Х  |        |        |          |     |   |   |
|                            | 3 |   |    | Х      |        |          |     |   |   |
|                            | 4 |   |    |        |        |          |     |   |   |
|                            | 5 |   |    |        |        |          |     |   |   |
|                            | 6 |   |    |        |        |          |     |   |   |
|                            | 7 |   |    |        |        |          |     |   |   |
|                            | 8 |   |    |        |        |          |     |   |   |
|                            | - |   |    |        |        |          |     |   |   |



## Prerequisite / Corequisite Checklist and Worksheet

## Engineering 11 ; Engineering Graphics and Design

Prerequisite: MATH 4 ; College Algebra for STEM Majors

Other prerequisites, corequisites, and advisories also required for this course: MATH 2; MATH 3 (Please note that a separate sheet is required for each prerequisite, corequisite, or advisory)

## SECTION 1 - CONTENT REVIEW: If any criterion is not met, the prerequisite will be disallowed.

|    | Criterion   | Met | Not<br>Met |
|----|---|-----|------------|
| 1. | Faculty with appropriate expertise have been involved in the determination of the prerequisite, corequisite or advisory.  | X   |            |
| 2. | The department in which the course is (will be) taught has considered course objectives in accordance with accreditation standards.   | Χ   |            |
| 3. | Selection of this prerequisite, corequisite or advisory is based on tests, the type and number of examinations, and grading criteria.   | X   |            |
| 4. | Selection of this prerequisite, corequisite or advisory is based on a detailed course syllabus and outline of record, related instructional materials and course format.                        | Χ   |            |
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| 6. | The course materials presented in this prerequisite or corequisite have been reviewed and determined to teach knowledge or skills needed for success in the course requiring this prerequisite. | Χ   |            |
| 7. | The body of knowledge and/or skills necessary for success in the course have been matched with the knowledge and skills developed by the prerequisite, corequisite or advisory.                 | Χ   |            |
| 8. | The body of knowledge and/or skills taught in the prerequisite are not an instructional unit of the course requiring the prerequisite.  | Χ   |            |
| 9. | Written documentation that steps 1 to 8 above have been taken is readily available in departmental files.   | X   |            |

## SECTION II - ADDITIONAL LEVEL OF SCRUTINY:

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<u>List schools here:</u> CSU Northridge, CSU Fresno, San Francisco State University
Complete the Prerequisite Worksheet
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Complete the Prerequisite Worksheet



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Prerequisite must be required for at least one of the courses in the program. Explain:

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Students who lack the prerequisite might endanger themselves, other students or staff. Explain:

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Once we've identified what are the "entrance skills" necessary for success, we then need to look at the "exit skills" (objectives) of our existing courses to determine which of our courses sufficiently prepares students (based on the entrance skills) to be successful in the course in question.

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  - Course A, for example, may have 10 objectives, but perhaps only 5 (or even just 1) are essential for success in Course B. Only the relevant exit skills should be used to justify/substantiate a prerequisite.

## Completing the prerequisite worksheet:

The entrance skills must be worded as SKILLS. "What skills do students need to have BEFORE the course begins in order to be successful?"

For example:

- "Learn how to read college level textbooks" is NOT an entrance skill.
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Once the entrance skills are determined, we can then figure out which course(s) are necessary as prerequisites (based on matching up the exit skills (objectives) of that course(s) with the entrance skills of the course in question).



# **Prerequisite Worksheet**

## ENTRANCE SKILLS FOR (the course in question)

(What the student needs to be able to do or understand BEFORE entering the course in order to be successful)

| A) | Use transformation techniques including vertical and horizontal shifts, compression, stretching, and reflection over the x and y axis. |
|----|--|
| B) |  |
| C) |  |
| D) |  |

## EXIT SKILLS (objectives) FOR (the prerequisite course)

(What the student has the demonstrated ability to do or understand AFTER successful completion of this course)

| 1. | Use transformation techniques including vertical and horizontal shifts, compression, stretching, and reflection over the x and y axis to sketch the graph of a relation. |
|----|--|
| 2. |  |
| 3. |  |
| 4. |  |

|                            | ENTRANCE SKILLS FOR ( XXX ) |   |   |   |   |   |   |   |   |
|----------------------------|-----------------------------|---|---|---|---|---|---|---|---|
| EXIT SKILLS FOR<br>( XXX ) |                             | А | В | С | D | E | F | G | Н |
|                            | 1                           | Х |   |   |   |   |   |   |   |
|                            | 2                           |   |   |   |   |   |   |   |   |
|                            | 3                           |   |   |   |   |   |   |   |   |
|                            | 4                           |   |   |   |   |   |   |   |   |
|                            | 5                           |   |   |   |   |   |   |   |   |
|                            | 6                           |   |   |   |   |   |   |   |   |
|                            | 7                           |   |   |   |   |   |   |   |   |
|                            | 8                           |   |   |   |   |   |   |   |   |



#### Santa Monica College Distance Education for ASTRONOMY 3, Stellar Astronomy With Laboratory

| Units   | 4.00   |
|---|--------|
| Total Instructional Hours (usually 18 per unit):      | 108.00 |
| Hours per week (full semester equivalent) in Lecture: | 3.00   |
| In-Class Lab:   | 3.00   |
| Arranged:   | 0.00   |
| Outside-of-Class Hours                                | 180.00 |

| Date Submitted:       | September 2019  |
|-----------------------|---|
| Transferability:      | Transfers to CSU, UC  |
| IGETC Area:           | <ul> <li>5A: Physical Science</li> <li>5C: Physical or Biological Science LABORATORY</li> </ul> |
| CSU GE Area:          | <ul> <li>B1 - Physical Science</li> <li>B3 - Laboratory Sciences</li> </ul>                     |
| SMC GE Area:          | Area I: Natural Science   |
| Degree Applicability: | Credit - Degree Applicable  |

## Rationale

Completing lab requirements is a significant challenge for many students, especially those who are working or have families since they require a being present of campus for extended periods of time. Additionally, lab classes are often impacted and difficult to enroll in. The purpose of this adding this course is to offer students the option of a fully-online laboratory class in astronomy which is just as rigorous as its on-ground counterpart. Astronomy is uniquely suited to a fully-online format since the sky is a natural laboratory which is always available for used 24 hours a day (assuming it's not cloudy of course!) In addition there is an enormous variety of astronomical data and simulations freely available on the internet.

## I. Catalog Description

This survey course covers the same material as Astronomy 1, but includes a laboratory section covering hands-on astronomical activities. The laboratory portion includes observations of the sky, computer simulations, the construction of simple astronomical instruments and analyzing publicly available astronomical data from the internet.

- II. Examples of Appropriate Text or Other Required Reading: (include all publication dates; for transferable courses at least one text should have been published within the last five years)
  - 1. Stars and Galaxies, 10, Seeds and Bachman, Cengage Learning © 2018, ISBN: 978-1337399944;
  - 2. <u>Astronomy Today Volume 2: Stars and Galaxies</u>, 9, Chaisson and McMillan, Pearson © 2017, ISBN: 978-0134566214;
  - 3. <u>Exploring the Universe: A Laboratory Guide for Astronomy</u>, Reynolds, Mike and Michael Bakich, Morton Publishing Company © 2015, ISBN: 978-1617312120;
  - 4. Astronomy, 1, Fraknoi, Morrison and Wolff, Openstax © 2017, ISBN: 978-1-938168-28-4;

## III. Course Objectives

Upon completion of this course, the student will be able to:

- 1. Relate our place in the Universe and the relevance of astronomy to our everyday lives.
- Identify the various phenomena seen in the sky including, the rising and setting of the sun, moon, planets and stars, the seasons, constellations patterns, precession, and define the basic principles of celestial navigation.
- 3. Describe the historical development of the concept of gravity from Kepler through Newton's Universal Theory to Einstein's General Theory of Relativity.
- 4. Describe the basic properties of electromagnetic radiation, identify how it is emitted and absorbed by atoms and molecules and explain how it carries information across the Universe.

- 5. Define the basic principles of astronomical telescopes and how they collect electromagnetic radiation from the Universe. To recognize properties of reflection, refraction, and the law of dispersion.
- 6. Recognize that our Sun is a star; define its fundamental properties and its importance to life on Earth.
- 7. Identify the various properties that can be measured for the other, more distant stars and how they compare with our Sun.
- 8. Explain how stars and planets form from clouds of gas and dust in the interstellar medium.
- 9. Describe the lifecycles of stars (stellar evolution) from birth to death.
- 10. Describe the deaths of stars and the important role they play in generating the heavy elements necessary for the formations of planets and Life.
- 11. Recognize that our Sun is just one of billions of other stars, along with gas and dust making up our spiral galaxy, the Milky Way.
- 12. Analyze the classification and morphology of galaxies and how they group into clusters and superclusters.
- 13. Describe the current theories for the origin of the Universe and be able to explain the creation of matter and the formation of the first stars and galaxies in the early Universe. Discuss our current predictions for the future and evolution of the Universe.

## IV. Methods of Presentation:

Lab, Lecture and Discussion, Other, Experiments, Observation and Demonstration, Field Experience

## V. Course Content

| % of Course | Topic   |
|-------------|---|
| 10.00%      | Our place in the Universe<br>Scale of the cosmos<br>Tools of astronomy                |
| 10.00%      | The celestial sphere<br>Motions of the sky<br>Gravity<br>Kepler<br>Newton<br>Einstein |
| 13.00%      | Matter and radiation<br>Astronomical instrumentation<br>Telescopes                    |
| 10.00%      | The Sun<br>Properties of stars (magnitudes, distances, spectra, H-R Diagram)          |
| 16.00%      | Stars and stellar evolution (birth to death)  |
| 7.00%       | Interstellar medium   |
| 6.00%       | Relativity  |
| 7.00%       | White Dwarfs<br>Neutron Objects<br>Black Holes  |
| 7.00%       | The Milky Way Galaxy<br>Galaxy morphology<br>Qusars                                   |
| 14.00%      | Cosmology (the Big Bang and competing theories)                                       |

| 100.00% | Total |  |
|---------|-------|--|
|---------|-------|--|

### Vb. Lab Content:

| <u>% of course</u> | Topic   |
|--------------------|---|
| 6.00%              | Finding your Cosmic Address                         |
| 6.00%              | Scientific Notation and Numbers in Astronomy        |
| 6.00%              | The Rising and setting of the Sun                   |
| 6.00%              | Building and using a Planisphere to Observe the Sky |
| 6.00%              | Forensic Astronomy                                  |
| 6.00%              | Kepler's Laws                                       |
| 6.00%              | Types of Telescope                                  |
| 6.00%              | Measuring Light Pollution                           |
| 6.00%              | Studying Solar Activity Online                      |
| 6.00%              | Identifying Interstellar Clouds                     |
| 6.00%              | Celestial Fingerprints                              |
| 6.00%              | Properties of Black Holes                           |
| 7.00%              | Galaxy Zoo Lab                                      |
| 7.00%              | Local Group Cluster Search Online                   |
| 7.00%              | Exploring the Hubble Extreme Deep Field Image       |
| 7.00%              | The Expansion of the Universe                       |
| 100.00%            | Total   |

# VI. Methods of Evaluation: (Actual point distribution will vary from instructor to instructor but approximate values are shown.)

| Percentage | Evaluation Method                  |
|------------|------------------------------------|
| 40 %       | Exams/Tests - Two Midterm Exams    |
| 25 %       | Final exam - Cumulative Final Exam |
| 10 %       | Homework - Weekly Homework         |
| 25 %       | Lab Reports - Laboratory Work      |
| 100 %      | Total                              |

## VII. Sample Assignments:

**Forensic Astronomy:** Please see PDF file in attached files section **Using a Planisphere:** Please see PDF file in attached files section

## VIII. Student Learning Outcomes

- 1. Examine the various properties that can be measured for the other, more distant stars, and how they compare with our Sun.
- 2. Describe the lifecycles of stars (stellar evolution) from birth to death.

## **ASTRON 3 Distance Education Application**

This Distance Education course meets the same standard of course quality as is applied to traditional classroom courses in the following categories, as stated in the official course outline of record:

- Course objectives have not changed
- Course content has not changed
- Method of instruction meets the same standard of course quality
- Outside assignments meet the same standard of course quality
- Serves comparable number of students per section as a traditional course in the same department
- Required texts meet the same standard of course quality

Additional considerations for all distance education courses:

- Determination and judgments about the equality of the distance education course were made with the full involvement of the faculty as defined by Administrative Regulation 5420 and college curriculum approval procedures.
- Adequate technology resources exist to support this course/section
- Library resources are accessible to students
- Specific expectations are set for students with respect to a minimum amount of time per week for student and homework assignments
- Adequately fulfills "effective contact between faculty member and student" required by Title 5.
- Will not affect existing or potential articulation with other colleges
- Special needs (i.e., texts, materials, etc.) are reasonable
- Complies with current access guidelines for students with disabilities
- Evaluation methods are in place to produce an annual report to the Board of Trustee on activity in offering this course or section following the guidelines to Title 5 Section 55317 (see attachment) and to review the impact of distance education on this program through the program review process specified in accreditation standard 2B.2.

Santa Monica College has a legal and ethical obligation to ensure equal access to electronic information technology (e.g., software, computers, web pages) for all students. Consistent with this obligation, the technology-based components of our course will reflect current accessibility design standards. Support in implementing these standards is available through Academic Computing and Disabled Student Services. Evaluation methods are in place to produce an annual report to the Board of Trustee on activity in offering this course or section following the guidelines to Title 5 Section 55317 (see attachment) and to review the impact of distance education on this program through the program review

## Guidelines and Questions for Curriculum Approval of a Distance Education Course

#### 1a. Interactions: Describe the nature and expected frequency of instructor-student interactions:

There will be multiple, frequent and on-going communication between the instructor and each student via threaded discussions, email and online chats that occur throughout the course. These communications will be initiated regularly and frequently by the instructor. The instructor will provide on-going feedback, comments and suggestions to assist and improve student performance. The instructor will also provide instructions and support as needed for course navigation. Further clarification will also be provided regarding content, exams and assignments. The instructor will also provide a virtual office and will be available to talk to students over the phone if necessary.

#### 1b. Interactions: Describe the nature and expected frequency of student-student interactions:

Students will participate in student-student interactions using threaded discussions. Using this asynchronous forum, students will be able to communicate with each other throughout the course regarding course material and assignments. A virtual student lounge will also be provided to encourage students to interact with each other on a more personal level.

#### **1c. Interactions:** Describe the nature and expected frequency of student-content interactions:

Students will engage with the content regularly throughout the course. Each unit will include online lectures, video links and practice quizzes that will allow the student to assess their comprehension of the course content before they complete a graded assignment. The practice quizzes will provide immediate feedback to support different student learning styles. Students will also we asked to watch online videos and perform exercises on external web sites.

| 1d. Interactions: |
|-------------------|
|-------------------|

| Online class activities<br>that promote class<br>interaction and<br>engagement  | ties<br>S Brief Description |        |
|---|-----------------------------|--------|
| Online Lecture PowerPoint lectures (which may be audio-narrated) will be provided for each mod which will be broken down into short units. Alternative versions of the material will provided e.g. slides with notes, notes only and podcasts |                             | 20.00% |

| Videos            | Links to a wide-range of videos will be embedded within the audio-narrated PowerPoint lectures. A video will be provided in the introductory module to welcome the students to the class. There will also be video at the beginning of each module to outline the material to be covered and the the assignments due. All videos will be closed-captioned | 10.00% |
|-------------------|---|--------|
| Discussion Boards | Two discussions boards will be assignments due. An videos will be closed-capitolied.<br>question relating to astronomy and the other will be specific to the material contained in<br>the module. The discussions boards will provided ample opportunity for student-student<br>and student-instructor interaction.                                       | 10.00% |
| Exams             | There will be brief practice quizzes after each unit and a weekly test at the end of each module.   | 10.00% |
| Other (describe)  | A hands-on lab will be part of each module which may include observing the sky, analyzing data from the internet and building simple astronomical instruments.  | 50.00% |

**2. Instruction:** Describe how content will be organized and delivered in the interest of achieving course outcomes/objectives (e.g. what are the methods of instruction being used, technologies used, approximate time schedule, necessary instructional materials.)

The course will divided into modules. Each module will be broken down into smaller units. Each module will have introductory material in the form of a PowerPoint presentation and/or a reading assignment from an online text, video presentations/animations, a discussion board and a quiz. An exam will be given at the end of each module.

3. Assignments / Assessments: Describe how assignments and assessments are used so that instructor-student contact is maintained and students are given regular, meaningful feedback. Describe interactions that encourage students' participation. Describe assessments that are verifiable, equivalent to on-ground, and appropriate. Describe the criteria used to substantiate student learning; explain how these interactions will be assessed.

| % of grade | Activity                | Assessment Method   |
|------------|-------------------------|---|
| 30.00%     | Exams                   | There will be an exam at the end of every module which will be in the form of either a multiple choice test or a paper submitted online |
| 20.00%     | Threaded<br>Discussions | Students will be expected to contribute to and respond to posted in threaded discussions placed in each module.                         |
| 10.00%     | Web Discovery           | For each module, students will be expected to find web resources for the class and post them in a decicated threaded discussion board.  |
| 30.00%     | Lab Reports             | A lab will be assigned to each module and a detailed report submitted.  |
| 10.00%     | Lab Quizzes             | A quiz will be adminstered at the end of each lab to ensure that students have mastered the concepts in that lab.                       |

**4. Technology:** Describe the technical qualifications an instructor would need and the support that might be necessary for this course to be delivered at a distance (e.g. the college's existing technology, CCCConfer certification, other specialized instructor training, support personnel, materials and resources, technical support, etc.) Faculty will become familiar with the learning management system in place.

5. Student Support: Describe any student support services one might want or need to integrate into the online classroom for this course (e.g. links to counseling, financial aid, bookstore, library, etc.) Links to library databases will be provided as an integral part of the course.

**6.** Accessibility: Describe how the design of the course will ensure access for students with disabilities including compliance with the regulations of Section 508 of the Rehabilitation Act.

Online lecture presentations and assignments will be made accessible by incorporating design features such as alternative text, headings for data tables, and skip navigation. Whenever possible, links to additional materials that are likewise accessible will be chosen; when that is not possible, appropriate alternative accommodations will be made by the instructor.

**7. Online Strategies:** Using one of the course objectives, describe an online lesson/activity that might be used in the course to facilitate student learning of that objective. Be sure the sample lesson/activity includes reference to the use of online teaching tools (such as drop box or threaded discussion, or multimedia such as Articulate, Flash, Jing, etc.).

Online exercise based on Objective 12: Galaxy Zoo Introduction Galaxy Zoo is an online site on which internet users help astronomers to classify large numbers of galaxies. Even though computers can be used to do this, it has been shown that the human eye is much better at judging galaxy shapes. In this lab you will create an account on the Galaxy Zoo site and attempt to classify galaxies with the rest of the class. Instructions 1. Visit www.galaxyzoo.org 2. Click on the blue Sign Up button at the upper right of the window. Choose a username and then enter your EXACT SMC student email address (e.g.

mouse\_mickey@student.smc.edu) and choose a password to create an account. 3. Click on the blue ?Sign Out? button at the upper right 4. Now log into your SMC student email account and you should see an email from no-reply@zooniverse.org. Open this email up and the click on the Galaxy Zoo link. 5. Now enter your username and password and you will be given a series of galaxies to classify. Just examine the pictures and then answer the questions at the lower right. Make sure the round Group icon is highlighted. 6. Post your experiences on the threaded discussion board for this lab.

# SANTA MONICA COLLEGE PROGRAM OF STUDY

# <u>Anthropology</u> <u>Associate in Arts for Transfer (AA-T)</u>

The Associate in Arts in Anthropology for Transfer (AA-T) involves the critical examination of human societies, both present and past. It provides basic information about humankind and is designed to stimulate critical thinking about ways of living in the world. The courses of this degree address the four sub-disciplines of Anthropology which attempt to understand basic aspects of humankind. Cultural Anthropology studies human behavior to understand the cultural values that guide the behaviors. Archaeology examines the material record of human activity in order to understand how ideas change over time. Anthropological Linguistics is the study of the human capacity for language and its use. Physical Anthropology (also called Biological Anthropology) is the study of human evolution which includes human biological diversity.

Upon completion of the Associate in Arts in Anthropology for Transfer (AA-T), students will have a strong academic foundation in the field and be prepared for upper division baccalaureate study. Students who have completed the Associate in Arts for Transfer in Anthropology will have satisfied the lower division requirements for transfer into Anthropology or similar majors for many campuses in the California State University system.

#### Program Learning Outcomes:

Upon completion of the program, students will: 1. Develop an integrated understanding of humans and human variation. 2. Explore the concepts, theories, and methodologies anthropologists use to analyze human behavior. 3. Discover how anthropology can be used to address contemporary issues. 4. Use an evolutionary framework to investigate humans and non-human primates.

## Area of Emphasis

**Units:** 9.0

#### Required Core (minimum 9 units):

|                             |   | 3.0-4.0           |
|-----------------------------|---|-------------------|
| ANTHRO 1                    | Physical Anthropology                           | 3.0               |
| OR                          |   |                   |
| ANTHRO 5                    | Physical Anthropology With Lab                  | 4.0               |
| ANTHRO 2                    | Cultural Anthropology                           | 3.0               |
| ANTHRO 4                    | Methods Of Archaeology                          | 3.0               |
| Area A: Select at least o   | ne of the following courses (3 units required): | <b>Units:</b> 3.0 |
| ANTHRO 7                    | Introduction To Linguistic Anthropology         | 3.0               |
| ANTHRO 22                   | Magic, Religion, and Witchcraft                 | 3.0               |
| ENGL 2                      | Critical Analysis And Intermediate Composition  | 3.0               |
| ENGL 31                     | Advanced Composition                            | 3.0               |
| GEOG 1                      | Physical Geography                              | 3.0               |
| GEOG 2                      | Introduction To Human Geography                 | 3.0               |
| HIST 47                     | The Practice Of History                         | 3.0               |
| MATH 54                     | Elementary Statistics                           | 4.0               |
| Area B: Select at least o   | ne of the following courses (3 units required): | <b>Units:</b> 3.0 |
| ANY COURSE NOT US           | ED FOR AREA A                                   |                   |
| ANATMY 1                    | Human Anatomy                                   | 4.0               |
| GEOL 4                      | Physical Geology with Laboratory                | 4.0               |
| GEOL 5                      | Historical Geology with Lab                     | 4.0               |
| PSYCH 7                     | Research Methods in Psychology                  | 3.0               |
| GEOG 20 (same as<br>GIS 20) | Introduction To Geographic Information Systems  | 3.0               |
| PHILOS 6                    | Philosophy Of Science                           | 3.0               |
| Area C: Select at least o   | ne of the following courses (3 units required): | <b>Units:</b> 3.0 |
| ANY COURSE NOT US           | ED FOR AREA A OR AREA B                         |                   |

| ANTHRO 3 | World Archaeology | 3.0 |
|----------|-------------------|-----|
|          | Paleoanthropology | 3.0 |

|                     |   | 19 of 20 |
|---------------------|---|----------|
| ENGL 10             | Ethnic Literature Of The US                                     | 3.0      |
| ENGL 9              | Literature Of California  | 3.0      |
| GLOBAL 5, POL SC 5) |   |          |
| ECON 5 (same as     | International Political Economy: Introduction To Global Studies | 3.0      |
| ECE 11              | Child, Family and Community                                     | 3.0      |
| DANCE 2             | Dance In American Culture                                       | 3.0      |
| COM ST 37           | Intercultural Communication                                     | 3.0      |
| COM ST 14           | Oral Interpretation: Performing Literature Across Cultures      | 3.0      |
| AHIS 72             | American Art History  | 3.0      |
| AHIS 71             | African-American Art History                                    | 3.0      |
| AHIS 11             | Art Appreciation Introduction To Global Visual Culture          | 3.0      |
| ANTHRO 35S          | Archaeological Field Techniques                                 | 3.0      |
| ANTHRO 21           | Peoples And Power In Latin America                              | 3.0      |
| ANTHRO 20           | Traditional Peoples And Cultures Of Africa                      | 3.0      |
| ANTHRO 19           | The Culture of Food   | 3.0      |
| ANTHRO 14           | Sex Gender And Culture  | 3.0      |
| ANTHRO 10           | Forensic Anthropology   | 3.0      |
| ANTHRO 9            | Paleoanthropology   | 3.0      |

| ENGL 34          | Afro-American Literature                        | 3.0         |
|------------------|---|-------------|
| ENGL 41          | Introduction To Asian American Literature       | 3.0         |
| ENGL 53          | Latino Literature In The United States          | 3.0         |
| ENGL 54          | Native American Literature                      | 3.0         |
| FILM 7           | American Cinema Crossing Cultures               | 4.0         |
| GEOG 8 (same as  | Introduction to Urban Studies                   | 3.0         |
| URBAN 8)         |   |             |
| GEOG 11 (same as | World Geography: Introduction to Global Studies | 3.0         |
| GLOBAL 11)       |   |             |
| GEOG 14          | Geography Of California                         | 3.0         |
| GLOBAL 10        | Global Issues                                   | 3.0         |
| HIST 10          | Ethnicity And American Culture                  | 3.0         |
| HIST 16          | African-American History                        | 3.0         |
| HIST 33          | World Civilizations I                           | 3.0         |
| HIST 34          | World Civilizations II                          | 3.0         |
| HIST 38          | African History I                               | 3.0         |
| HIST 39          | African History II                              | 3.0         |
| HIST 41          | Native-American History                         | 3.0         |
| HIST 42          | The Latina/o Experience in the United States    | 3.0         |
| HIST 43          | Mexican-American History                        | 3.0         |
| HIST 62          | Asian-American History                          | 3.0         |
| MEDIA 10         | Media, Gender, and Race                         | 3.0         |
| MUSIC 33         | Jazz in American Culture                        | 3.0         |
| MUSIC 37         | Music in American Culture                       | 3.0         |
| NUTR 7           | Food And Culture In America                     | 3.0         |
| POL SC 21        | Race, Ethnicity, and the Politics of Difference | 3.0         |
| SOCIOL 1         | Introduction To Sociology                       | 3.0         |
| SOCIOL 1s        | Introduction To Sociology - Service Learning    | 3.0         |
| SOCIOL 2         | Social Problems                                 | 3.0         |
| SOCIOL 2s        | Social Problems Service Learning                | 3.0         |
| SOCIOL 30        | African Americans In Contemporary Society       | 3.0         |
| SOCIOL 31        | Latinas/os In Contemporary Society              | 3.0         |
| SOCIOL 32        | Asian Americans In Contemporary Society         | 3.0         |
| SOCIOL 34        | Racial And Ethnic Relations In American Society | 3.0         |
|                  |   | Total: 49.0 |
|                  |   | TU(a), 10.0 |

#### ADDITIONAL INFORMATION:

Students completing this degree are eligible for priority admission consideration in the majors at the CSU campuses listed below. In addition, you will be required to complete no more than 60 semester/90 quarter CSU units of coursework after transfer to complete your baccalaureate degree. < strong>If you are considering transfer to a UC, private, or out-of-state school, please consult a counselor before applying to transfer, as the transfer requirements may be different from those required for the AA-T in Anthropology.</strong> <strong>CSU Campus and Major Accepting this Transfer Degree:</strong> Bakersfield: Anthropology, BA Channel Islands:&nbsp; Anthropology, BA Chico: Anthropology, BA Dominguez Hills: Anthropology - Archaeology, BA Dominguez Hills: Anthropology, BA East Bay: Anthropology - Archeology and Biological Anthropology, BA East Bay: & nbsp; Anthropology - Socio-Cultural Anthropology, BA Fresno: & nbsp; Anthropology, BA Fullerton: Anthropology, BA Humboldt: Anthropology, BA Long Beach: Anthropology, BA Los Angeles: Anthropology, BA Monterey Bay: Social and Behavioral Sciences - Anthropology, BA Northridge: Anthropology, BA Pomona: Anthropology - Cultural Resource Management, BS Pomona: Anthropology, BS Sacramento: Anthropology, BA San Bernardino: Anthropology, BA Anthropology, BA San Francisco: Anthropology, BA San Jose: Anthropology, BA San Jose: Behavioral Science, BA San Jose: Anthropology, BA Humanities - Liberal Arts, BA San Jose: Special Major - Organizational Studies, BA San Luis Obispo: Anthropology-Geography - Individualized Course of Study, BS San Marcos: Anthropology - Indigenous Anthropology, BA San Marcos: Anthropology - Medical Anthropology, BA Sonoma: Anthropology - Medical Anthropology, BA Anthropology, BA Stanislaus: Anthropology - Archaeology, BA Stanislaus: Anthropology - Ethnology, BA Stanislaus: Anthropology, BA Stanislaus: Anthropology - Physical Anthropology - Forensic, BA Stanislaus: Anthropology - Physical Anthropology - Medical, BA The campuses and majors listed above are subject to change without notice. For the most current list, go to <a href="http://www.calstate.edu/transfer/adtsearch/search.shtml">www.calstate.edu/transfer/adt-search/search.shtml</a>

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