SANTA MONICA COLLEGE ACADEMIC SENATE
1900 Pico Boulevard Santa Monica, CA 90405
310.434.4611

Curriculum Committee Agenda

Wednesday, September 20, 2023, 3:00 p.m.
Drescher Hall, Loft (3rd Floor, Room 300-E)

Guests and members of the public may attend via Zoom:
Join from PC, Mac, Linux, iOS or Android: https://cccconfer.zoom.us/j/96386192571

Or iPhone one-tap (US Toll): +16699006833,96386192571# or 16694449171,96386192571#

Or Telephone:
+1 669 900 6833 (US Toll)
+1 669 444 9171 (US Toll)
+1 346 248 7799 (US Toll)
+1 253 215 8782 (US Toll)
+1 564 217 2000 (US Toll)
+1 646 876 9923 (US Toll)
+1 646 931 3860 (US Toll)
+1 301 715 8592 (US Toll)
+1 312 626 6799 (US Toll)
+1 386 347 5053 (US Toll)
Meeting ID: 963 8619 2571
International numbers available: https://cccconfer.zoom.us/u/abqJVu9Gkv

Or Skype for Business (Lync): SIP:96386192571@lync.zoom.us

Members:

Sal Veas, *Chair*	Susan Caggiano	Aileen Huang	Scott Silverman
Dione Carter, *Vice Chair*	Javier Cambron	Alex Ibaraki	Briana Simmons
Bren Antrim	Lisa Collins	Sharlene Joachim	Lydia Strong
Jason Beardsley	Rachel Demski	Jacqueline Monge	Audra Wells
Mary Bober	Susan Fila	Matthew Musselman	Associated Students Rep
Fariba Bolandhemat	Christina Gabler	Estela Narrie	Associated Students Rep
Walter Butler	Walker Griffy	Redelia Shaw	

Interested Parties:

Stephanie Amerian	Nathaniel Donahue	Cecilia Jeong (A.S.)	Esau Tovar
Clare Battista	Kiersten Elliott	Matt Larcin	Guadalupe Salgado
Maria Bonin	Tracie Hunter	Stacy Neal	Olivia Vallejo
Department Chairs	Maral Hyeler	Patricia Ramos	Tammara Whitaker
Nick Chambers			

Ex-Officio Members:
Jamar London

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

I. Call to Order and Approval of Agenda
II. Public Comments *(Two minutes is allotted to any member of the public who wishes to address the Committee.)*

III. Announcements
IV. Approval of Minutes 3
V. Chair's Report

VI. Information Items

1. Curriculum Institute Recap
   - CalGETC
     - General Education – Three Pathways
   - AB 1111
   - IDEAA/DEIA
     - Chaffey College COR DEIA Guide

2. Curriculum Orientation *(continued)*
   - Meetings and related actions
   - Brown Act Requirements
   - Past Practices

VII. Action Items

(Courses: New)

(Courses: Distance Education)

(Programs: Revisions)

u. Changes to degrees, certificates, and program maps as a result of courses considered on this agenda

VIII. New Business

IX. Old Business

X. Adjournment

Please notify Sal Veas, Dione Carter, and Rachel Demski by email if you are unable to attend this meeting.

The next Curriculum Committee meeting is October 4, 2023.

SANTA MONICA COLLEGE ACADEMIC SENATE
1900 Pico Boulevard Santa Monica, CA 90405
310.434.4611

Curriculum Committee Minutes

Wednesday, September 6, 2023, 3:00 p.m.
Drescher Hall, Loft (3rd Floor, Room 300-E)
Zoom (guests/members of the public)

Members Present:

Sal Veas, *Chair*	Walter Butler	Christina Gabler	Jacqueline Monge
Dione Carter, *Vice Chair*	Susan Caggiano	Walker Griffy	Redelia Shaw
Bren Antrim	Javier Cambron	Aileen Huang	Scott Silverman
Jason Beardsley	Lisa Collins	Alex Ibaraki	Briana Simmons
Mary Bober	Rachel Demski	Sharlene Joachim	Audra Wells
Fariba Bolandhemat	Susan Fila		

Members Absent:

Matthew Musselman	Estela Narrie	Lydia Strong	

Others Present:

Lourdes Arévalo	Jamar London	Olivia Vallejo	Keinan Williams
Jihyeon Cha	Steven Sedky		

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

I. Call to Order and Approval of Agenda
The meeting was called to order at 3:04 pm. Motion to approve the agenda with no revisions.
Motion made by: Audra Wells; **Seconded by:** Walker Griffy
The motion passed unanimously.

II. Public Comments
None

III. Announcements
None

IV. Approval of Minutes
Motion to approve the minutes of May 31, 2023 with no revisions.
Motion made by: Susan Caggiano; **Seconded by:** Jason Beardsley
The motion passed unanimously.

V. Chair's Report
We are back to meeting in the Loft in-person. Guests and members of the public may continue to attend via Zoom.

Also, going forward, curriculum will no longer be a consent item at the Senate, Sal will be presenting the specific action items and discussions to the Senate for approval.

VI. Information Items

1. Curriculum Committee Training

The brand new 23-24 fully online catalog launched earlier today! The layout/navigation is the same as the printed catalog, and there is a PDF copy in case you wish to make a printed copy.

The 2023-24 Curriculum Timelines are now posted to the curriculum website. We've added a second page explaining each approval/implementation step for all new and changed courses and programs.

The META User Guide explains all aspects of META – from creating proposals, to reviewing the approval queue, and requesting accounts.

Also, this year we've created a curriculum training overview presentation, which contains important details from a variety of curriculum reference documents (meeting schedules, timelines, curriculum representative responsibilities, etc.

2. Accreditation Update
   Dione Carter is serving as the Accreditation Liaison Officer. We have an upcoming accreditation team on-ground visit. They will be on campus September 26th (full day) and September 27th (half day). We will have an open forum and closing session hosted by the visiting team members. A bulletin went out earlier today with details on how to RSVP to attend either in-person or online.

   The Core Inquiry document was also shared *(see page 4)*. This is very important for Curriculum Representatives to see/review.

3. SLO-PLO-ILO Discussion
   Work on aligning SLO-PLO-ILOs will involve the curriculum committee and the departments. This is part of our continuous cycle of improvement. We're also going to engage the departments with Institutional Research to scale up the use of a graduate survey. Survey students who completed the programs to get an indirect assessment of the outcomes they've achieved. The year ahead will be an exciting one. We'll be working with the ACCJC, the Academic Senate, and the Faculty Association. We're also working on an SLO Coordinator position.

(Non-Substantial Changes)

4. SPAN 8, Conversational Spanish

(Technical Corrections)

5. FILM 40, Cinematography

VII. Action Items

(Consent Agenda: Program Maps)

a. Enterprise Service Clerk Certificate of Achievement
   Motion to approve the Enterprise Service Clerk Certificate of Achievement Program Map
   Motion made by: Jason Beardsley; **Seconded by:** Fariba Bolandhemat
   The motion passed unanimously.

(Consent Agenda: Emergency Distance Education to Fully Online)

b. MUSIC 33 Jazz in American Culture
   Motion to approve MUSIC 33 emergency DE to fully online.
   Motion made by: Briana Simmons; **Seconded by:** Dione Carter
   The motion passed unanimously.

(Courses: Substantial Changes)

c. KOREAN 1, Elementary Korean I (changed: course description, SLOs, course objectives, course content, methods of presentation, methods of evaluation, textbooks, sample assignments)
d. KOREAN 2, Elementary Korean II (changed: course description, SLOs, course objectives, course content, methods of presentation, methods of evaluation, textbooks, sample assignments)
e. KOREAN 3, Intermediate Korean I (changed: course description, SLOs, course objectives, course

content, methods of presentation, methods of evaluation, textbooks, sample assignments)

f. KOREAN 4, Intermediate Korean II (changed: course description, SLOs, course objectives, course content, methods of presentation, methods of evaluation, textbooks, sample assignments)
Motion to approve changes to KOREAN 1 (VII. c.), KOREAN 2 (VII. d.), KOREAN 3 (VII. e.), and KOREAN 4 (VII. e.) as a block with no additional revisions.
Motion made by: Susan Caggiano; **Seconded by:** Scott Silverman
The motion passed unanimously.

g. MUSIC 33, Jazz in American Culture (changed: course description, methods of presentation, methods of evaluation, textbooks)
MUSIC 33 substantial change will be moved to the next Curriculum (9/20) meeting for review.

(Courses: Distance Education)

h. SPAN 8, Conversational Spanish
Motion to approve distance education for SPAN 8 with no revisions.
Motion made by: Scott Silverman; **Seconded by:** Susan Caggiano
The motion passed unanimously.

(Programs: Revisions)

i. Changes to degrees, certificates, and program maps as a result of courses considered on this agenda
Motion to approve changes to degrees, certificates, and program maps as a result of courses considered on this agenda.
Motion made by: Scott Silverman; **Seconded by:** Walker Griffy
The motion passed unanimously.

VIII. New Business

None

IX. Old Business

None

X. Adjournment

Motion to adjourn the meeting at 4:36 pm.
Motion made by: Scott Silverman; **Seconded by:** Jason Beardsley
The motion passed unanimously.

Date: September 5th, 2023

To: Dr. Keith Flamer, Team Chair
Dr. David Wain Coon, Vice Chair
Kevin Bontenbal, ACCJC Staff Liaison

From: Dr. Kathryn Jeffery, President, Santa Monica College

CC: Dr. Dione Carter Hodges, Accreditation Liaison Officer

Re: College Update on Core Inquiries

Santa Monica College is looking forward to the upcoming Focused Site Visit. In order to facilitate the team's review process, please see below pertinent college developments pertaining to the core inquiries, in addition to evidence the team may find helpful in advance of the visit.

Core Inquiry 1: The team seeks to learn how the institution regularly assesses learning outcomes for its instructional programs and how the results of this assessment are used to improve student learning and achievement in all its delivery modes and at all locations.
Standards or Policies: II.A.3 and II.A.16
Briefly describe any institutional improvements, strengthening of processes, documented outcomes, discussions or reflections which have occurred pertaining to Core Inquiry 1. Santa Monica College meets the standards. In response to Core Inquiry 1, a cross-functional team of faculty from key Academic Senate committees, working with Academic Affairs partners, reflected, discussed, and gathered evidence. The assembled team included the following personnel: Academic Senate President, Curriculum Committee Chair, Program Review Committee Chair, ISER Editor, Interim Vice President of Academic Affairs, Dean, Academic Affairs, Dean, Institutional Research, and Dean, Education Enterprise. Through an exhaustive review of evidence gathered for SMC's ISER and of additional survey results from academic departments, the team added depth and breadth to the conclusion that SMC meets standards II.A.3 and II.A.16 and will continue building on our effective practices. Currently, most SMC programs directly assess PLO success rates by analyzing mastery rates of course-level student learning outcomes (SLOs) for program completers. This method of

learning assessment and program improvement aligns with practices documented by the statewide Academic Senate as a common and effective practice for PLO assessment (CI_Evidence_1_ASCC_COR). SMC academic departments widely and consistently employ this method of assessment (CI_Evidence_2_Survey).

In addition, several SMC academic programs directly assess PLO mastery rates through evaluation of student works, for example, in portfolios, projects in capstone courses, essays, and student presentations. The Architecture program, for example, engages faculty and industry advisory partners in group assessments of student murals to gauge PLO mastery rates and develop program improvement plans (CI_Evidence_3_ARC-IARC_AdvisoryBoard). Recently, as a result of partnering with industry advisors in assessments of student outcomes, the Architecture program faculty developed a program improvement around inclusive, diverse curriculum and course design. Specifically, the faculty agreed to update course outlines of record to reflect racial diversity, to assign socially relevant and culturally relevant projects, and to participate in SMC's extensive faculty professional development program, Equitizing Gateway Courses. The updated course outlines and a revised program learning outcome will be submitted to the Curriculum Committee this year.

The Business and Early Childhood Education (ECE) departments have demonstrated *indirect* PLO assessment approaches, which supplement the SLO-inferred or other direct approaches to PLO assessment cited above. Working with Institutional Research, the Accounting and ECE programs deploy survey questions aimed at evaluating program-completing students' perceptions of their knowledge, skills, and confidence in applying their learning in the workplace. As a result of reflecting on the PLO survey results, the ECE department acted to improve their program by revising their Program Learning Outcomes. The revised set of PLOs, included here as evidence, is the first step in the ECE program's most recent cycle of continuous improvement. Those revised PLOs will become part of the ECE program's next student completer survey (CI_Evidence_4_ECE_Grad_Survey and CI_Evidence_5_ECE_PLOREV).

Evidence: Provide the list of evidentiary documents which will assist the team to better understand college processes, outcomes, and activities pertaining to Core Inquiry 1. (documents should be separate pdf files on submitted flash drive)

1. CI_Evidence_1_ASCC_COR.pdf
2. CI_Evidence_2_Survey.pdf
3. CI_Evidence_3_ARC-IARC_AdvisoryBoard_2023-01-25.pdf

4. CI_Evidence_4_ECE_Grad_Survey.pdf
5. CI_Evidence_5_ECE_PLOREV.pdf
6. CI_Evidence_6_PLO/SLO_Coord.pdf
7. CI_Evidence_7_EPICenter.pdf

Context/additional information (if applicable): Please feel free to provide any additional relevant information that provides context for the college's work. (300 words max.)

Santa Monica College is dedicated to improving upon its current program learning outcome assessment practices through collaboration, revised processes, professional development, and dedicated support functions. This multi-faceted approach reflects our commitment to continuous improvement and the fulfillment of our educational mission.

Building on the success of the completer survey employed by the Business and Early Childhood Education programs, Academic Affairs and Institutional Research will work with department chairs and discipline faculty to implement a graduate survey for all programs. Institutional Research will maintain and share the summary and trend data to help each department prepare for its six-year comprehensive program review (CPR). Moreover, the new CPR template will be further refined to explicitly prompt departments to document their PLO findings, their interpretation of those findings, including area(s) needing improvement, and a plan to address or improve PLOs for program graduates.

In addition, a PLO/SLO coordinator reporting to the Dean of Academic Affairs overseeing instructional services will be hired to facilitate departmental assessment and discussion of the survey results and program improvements suggested by those findings. The PLO/SLO coordinator will serve as a member of the Curriculum Committee's Technical Review team to ensure that each department revising a program is proactively supported in their PLO assessment and improvement discussions. The PLO/SLO coordinator will also serve on the Program Review Committee and, as needed, will attend academic department meetings to facilitate discussion among discipline faculty (CI_Evidence_6_PLO/SLO_Coord).

To broadly support faculty participants in PLO analysis and revision, the College will strengthen professional learning opportunities for faculty related to SLOs and PLOs, specifically by leveraging our rebooted center for professional development, the Equity Minded Professional Innovation Center, or EpiCenter (CI_Evidence_7_EPICenter).

THE COURSE OUTLINE OF RECORD:
A CURRICULUM REFERENCE GUIDE REVISITED

ADOPTED SPRING 2017

The final and equally critical tools are references relevant to the subject matter being taught. From a planning perspective, the faculty should acquire these resources first and then examine the most effective and reliable methods to promote learning within the intended learning environments available for the delivery of this subject. For example, planning for allied health courses must take into consideration equipment needs and safety concerns to promote effective learning as well as the pedagogy of the discipline. The dean or CIO overseeing a particular department may have the information needed for these types of resources.

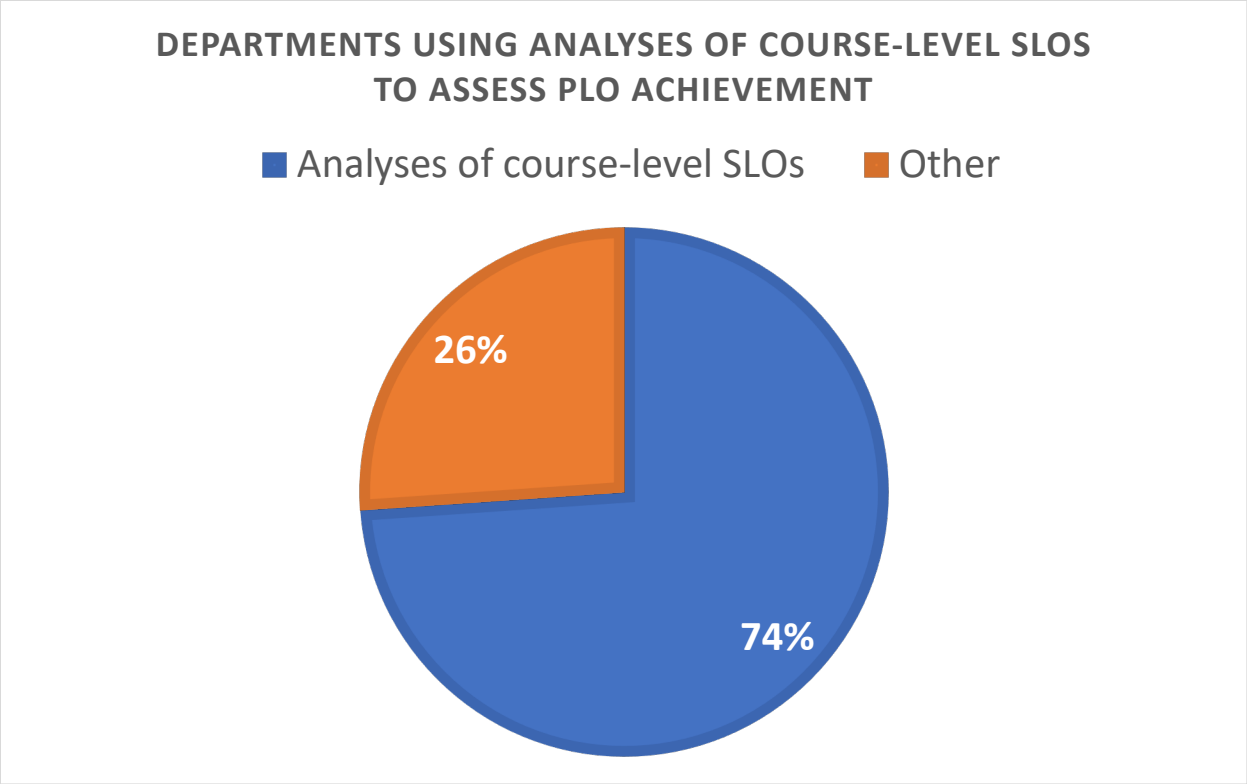
With resources at hand, the faculty author can begin to consider creating the various elements of the course outline of record.

Outcomes, Accreditation, and the Course Outline

For California's community colleges, several accreditation standards regarding student learning outcomes touch on the COR. Standard II.A.3 states, "The institution has officially approved and current course outlines that include student learning outcomes." This statement has been interpreted in different ways, with some colleges choosing to include SLOs as addenda to their CORs housed within their course outline management systems, while others include the SLOs in the COR itself. While a definitive interpretation has not been established, colleges should continue to work with their accrediting agency to ensure compliance. Additionally, Standard I.C. Institutional Integrity lists many areas in which colleges must ensure that accurate information is provided for students, including learning outcomes and educational programs. Colleges would be wise to maintain accurate CORs to fulfill the spirit of this standard.

SLOs can act as a central component in the development of many elements of both credit and noncredit courses. Per the accreditation standards, assessment data collected by faculty on outcomes, along with other information, must be reviewed and used to create action plans intended to improve teaching practices and student success at the course and program level. Many colleges use a data mapping process that links course student learning outcomes (CSLOs) found on the COR to program student learning outcomes (PSLOs) in order that the data collected at the CSLO level provides data for PSLO assessment. Given the importance of these links between the CSLOs and the PSLOs, faculty should begin course development and review of objectives and other elements of the COR with an analysis of how the CSLOs support student attainment of the PSLOs for those programs that include the course being reviewed. This practice ensures that students taking the courses and performing the SLOs of those courses will also be able to perform the PSLOs for their programs.

A similar situation exists for institutional student learning outcomes (ISLOs) and general education learning outcomes (GELOs). All course learning outcomes should align with either the ISLOs of the college or the GELOs for students enrolled in programs that include a GE component. ACCJC Standard II.A.12 states, "The institution, relying on faculty expertise, determines the appropriateness of each course for inclusion in the general education curriculum, based upon student learning outcomes and competencies appropriate to the degree level." Similar mappings between CSLOs and



In the summer of 2023, Institutional Research deployed a survey to all academic departments to better understand the consistency and variety of PLO assessment practices. The majority of academic departments report using “analyses of course-level SLOs” as a means to assessing student achievement of program learning outcomes. A majority of departments also reported using “analyses of student performance and progression in sequence of courses” as another method. Additionally, many departments reported using “project or assessment in capstone course,” “student surveys,” or “other” as other means to PLO assessment.

smccmd
Architecture + Interior Architectural Design

ADVISORY BOARD COMMITTEE
AGENDA

Date: January 25, 2023
Time: 6:00-7:30pm

Zoom Link: https://us06web.zoom.us/j/84125471282

I. INTRODUCTIONS

A. Tell us about yourself and your passion within this industry

II. PROGRAM REPORT *(what we've done since our last meeting)*

A. The Program Overview or Update
(Program Flowchart and Course Descriptions are attached)

B. Student Work *(Slideshow of Projects – sent prior to meeting)*

C. The Quarantine Effect

- Winter 2020 and then Rolling out each Semester
- Online Studios, Enrollment, and Heading Back to the Classroom

D. Student Leadership

- NOMAS: a gathering of students (downtown tour and competition)

E. Certificate: Digital Design for Interiors and Architecture

- Software: Rhino/SketchUp, AutoCAD, Revit, Adobe Suite
- Courses: ARC 11, 21, 31, 41, 51, 70

III. DISCUSSION – New Business

A. How has the Industry changed Post Covid?

- Discuss and reflect on changes you see in your offices and for the industry in general.

B. How Do We Respond in Education?

- Does this change what we teach? How we teach?

C. What skills do you look for in hiring an entry-level person?

- 2-year and Bachelors' Degrees
- Software / Hard Skills / Soft Skills

D. Mentors are shown to be a strong factor in student success.
How do we encourage and find mentors?

IV. ADJOURNMENT

Thank you for providing your valuable insight into helping students better meet industry needs. We appreciate your time and knowledge.

I. INTRODUCTIONS and ATTENDANCE

Board Members in Attendance

- Ida Adervall: SMC Interior and Architecture Alumni, Sci-Arc 4th year
- Federico Arzill: SMC Interior Design Alumni, F8 Architecture Design owner
- Aaron Gensler: Genslerclipp owner, Director of Architecture at Woodbury
- Weina Li: Taylor Design Interiors, Conversation IIDA EDI Podcast
- Christopher Locke: Design in Color, Steinberg Hart
- Johnathon Sharpe: Design in Color, Rios Architects
- Avalon Tipton: SMC architecture student, President of NOMAS

Also in Attendance:

- Javier Cambron, Assoc Professor Architecture and Interior Architectural Design
- Sheila Cordova, Chair Design Technology Department, Architecture Faculty Lead
- Josephine Hao, Interior Architectural Design Faculty Lead

II. PROGRAM REPORT *(what we've done since our last meeting)*

A. The Program Overview or Update

- Previous Board meeting, the board voted to approve the following items:
  - new Architecture Program
  - new Certificate of Arc and IARC digital certificate
  - update Interior Architectural Design Program
- We reviewed the newly implemented programs and certificates above. Key Points include:
  - Equitable - programs begin together in semester one to give students an opportunity to explore interiors and architecture before deciding which path to take.
  - Equitable - Design Communication classes are shared and the programs work together to foster a better understanding of the roles we have in the workforce.
  - Software taught is industry standard. A few thoughts are listed below for consideration.

B. Student Work from the past 2 years was reviewed

- Good to see the Studio Projects are typically community-focused.
- Body of work well done, especially considering it was produced online during the pandemic.

III. DISCUSSION – New Business

A. Questions posed are as follows:

- How has the Industry changed Post Covid?
- How Do We Respond in Education?
- What skills do you look for in hiring an entry-level person?
- Mentors are shown to be a strong factor in student success. How do we encourage and find mentors?

B. Discussion moved around. Board member thoughts:

- **Expectations After Covid…**
  - Aaron: Dual modality, teaching on-ground and online at the same time is disruptive for students and difficult for instructors; it's like teaching two classes at the same time.
  - Weina: Struggle in field going online; the difficulty is seeing materials, touching them, seeing the texture – can't do over zoom. Also, going to Site is difficult to do via zoom. If students are learning how to work in this modality then it makes it easier to adapt in the new office culture where more offices are working remotely. Challenging to co-work with people remotely. Many also want to work part-time.
  - Federico: Having a day/time when online students can come together for a moment just to meet up in person to check-in.
  - Jonathan: Consider Satellite spaces throughout the city to be more central to more students
  - Ida: Students who want to transfer should take on-ground studio courses. There are different interactions online and in person. Many students going to school now, have never taken a class on ground in college and the shift can be hard.
  - Aaron: Studio that were held on-ground and online by the same instructors; on-ground students produced much stronger work… What students need and student wants are two different things. On ground helps with the mental health aspect also. Hybrid courses can bridge these needs.
  - Weina: Agrees with the mental health aspect. Often missing relationships with other students online. This can impact recruiting co-workers from class.
  - Federico: Expectations from clients is higher, pace is faster after pandemic. Just like in an office, meet at the beginning and end of the week in person and then have ways to connect with other students in between.
  - Aaron: Next steps for education are to see how this online learning system impacts students entering the workforce.
- **Diversity in the field…**
  - Christopher: Relationship between arch history and studio and teaching the "unconventional" history and precedents. Connect how policy affects our space. Building space based on discussion – not design a building but how

we see ourselves in space. Give students agency to control curriculum – leave room for personal truth.

- Weina: Firms are beginning to hire more diverse people.
- Jonathan: Firms have DEI initiatives. Recruitment from non-traditional universities. Their voices are valued. Community engagement consultants on certain community projects. Starting to see that the diverse students will be a louder voice in the workforce; important to start to prepare them with studio projects that are rooted within their diverse communities.
- Avalon: Last studio project great dealt with City and community and challenging directly the city planning dept limiting the fashion district. Site visit in the garment district where they got to actually meet the people they were designing for.
- Aaron: Building partnership is good for students to be exposed to community. We do not have to build a community outreach project on our own in education, we can partner with organizations that exist already doing community projects. Design Enterprise.
- Aaron: we are also responsible for Environmental Stewardship, imperative to integrate into Architecture and Design.
- Jonathan: Entrepreneurship built into the studios at this stage would be amazing. Fundamental understanding of financial structure. Seeing firms with Social Impact Initiatives. This includes recruitment, retention, support to build leaders, and new positions such as community engagement consultants. Likes the idea of creating cultural hubs in the city.
- UN Compact has guidelines regarding social justice and environmental impact for design and architecture projects.

- **Software – think about…**
  - Software taught in Programs is industry standards. AutoCAD, Revit, Rhino, Adobe Suite, VR, and Fabrication. Think about…
  - 3D Scanning for as-built drawings
  - Computational design: Grasshopper, Dynamo.
  - The in-between; import Sketchup to Revit / Rhino to Revit/ AutoCAD to Creative Suite etc…
  - Less and less use of SketchUp, more dependent in Revit. Teach the core of Revit to get a job and then learn other software for free in the office.
- **Soft Skills students need…**
  - Public Speaking skills seem to have declined. Students should know how to present work and communicate within team projects. Creating “tricky problems” students need to solve (problem solving).
  - Public speaking: changing the perspective – we are always public speaking; it usually is not that formal in the work force we just talk to clients.
  - Aaron: Think on how to present in different ways. Collaborative and informal to industry presentations.
  - Weina: Agree. Public speaking is more than formal presentation. Can also be group or class discussions.
  - Avalon: Practice should be built into the studio; present/discuss almost every week.

C. Summary of meeting ideas:

- The industry is hiring more diverse people. Engaging more diverse population is needed. Encouraged by an HSI college now having architecture – find ways to 'get the word out' to less represented communities.
- Be thoughtful in connecting history with projects and allow students to see themselves in the curriculum. Empathy and connecting culture are an important part of this.
- Online is needed to meet the equity demands of the non-traditional student population but some courses such as studio, are more successful on ground. Building better online while maintaining on ground to meet diverse student needs. Hybrid is an effective course structure and Hyflex needs more thought or support.
- Public Speaking is an important skill that needs to be elevated. Public speaking is more than a formal presentation. Look at all the ways a student can speak in class to encourage and build this skill.
- For software, show how these programs work together and look at new applications being used in the field.

IV. ADJOURNMENT

Thank you for providing your valuable insight into helping students better meet industry needs. We appreciate your time and knowledge.

Arc/IArc Advisory Board 2022

Interior Architecture Studio

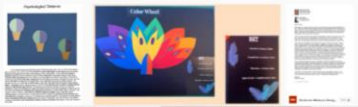
IArc 20: Studio 2

IArc 30: Studio 3

IArc 40: Studio 4

Seminars

IArc 15: Color Theory



IArc 25: Materials and Products

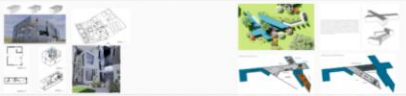
IArc 35: Fundamentals of Lighting

IArc 45: Building Systems and Codes

Architecture Studio

Arc 10: Studio 1

Arc 20: Studio 2



Arc 30: Studio 3

Arc 40: Studio 4

Seminars

Arc 11: Intro Rhino + Intro Drawing

Arc 21: AutoCAD

Arc 31: Revit

Arc 32: Construction Methods + Materials

Arc 41: Rhino

Arc 51: Adobe Suite

Arc 70: Portfolio

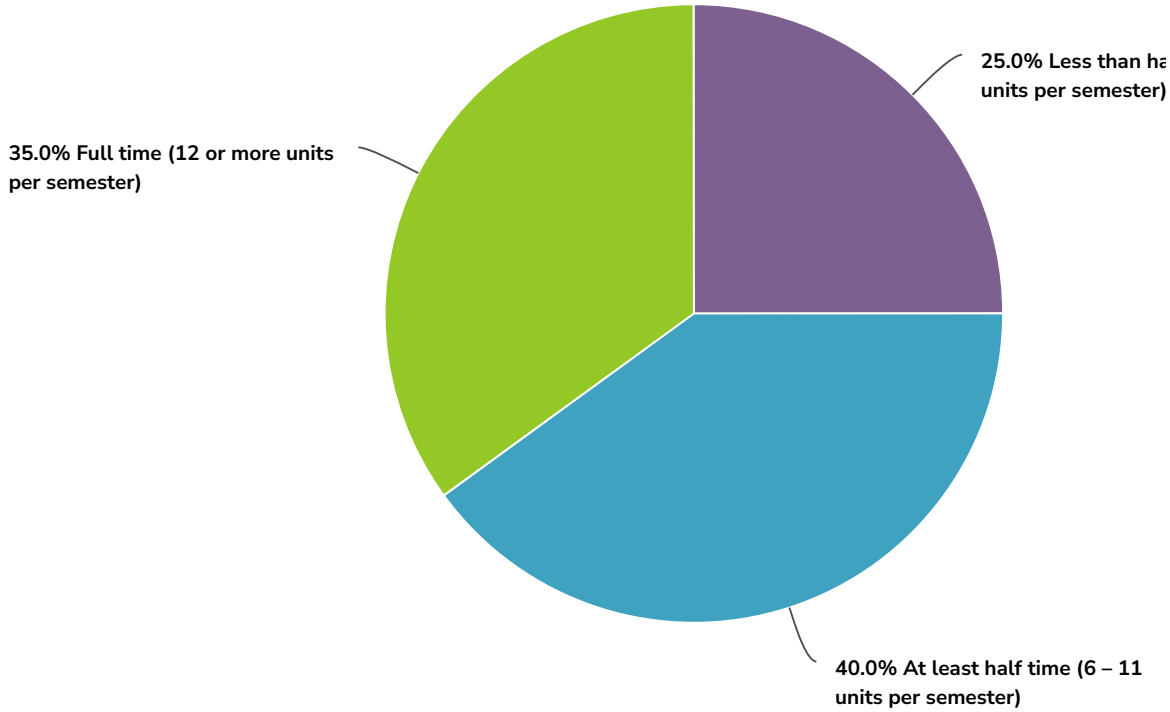
This report is filtered View conditions

ECE PLOs

Response Counts

Completion Rate:	**100%**	
	Complete	20
		Totals: 20

1. What was your enrollment status for the majority of your time at SMC?

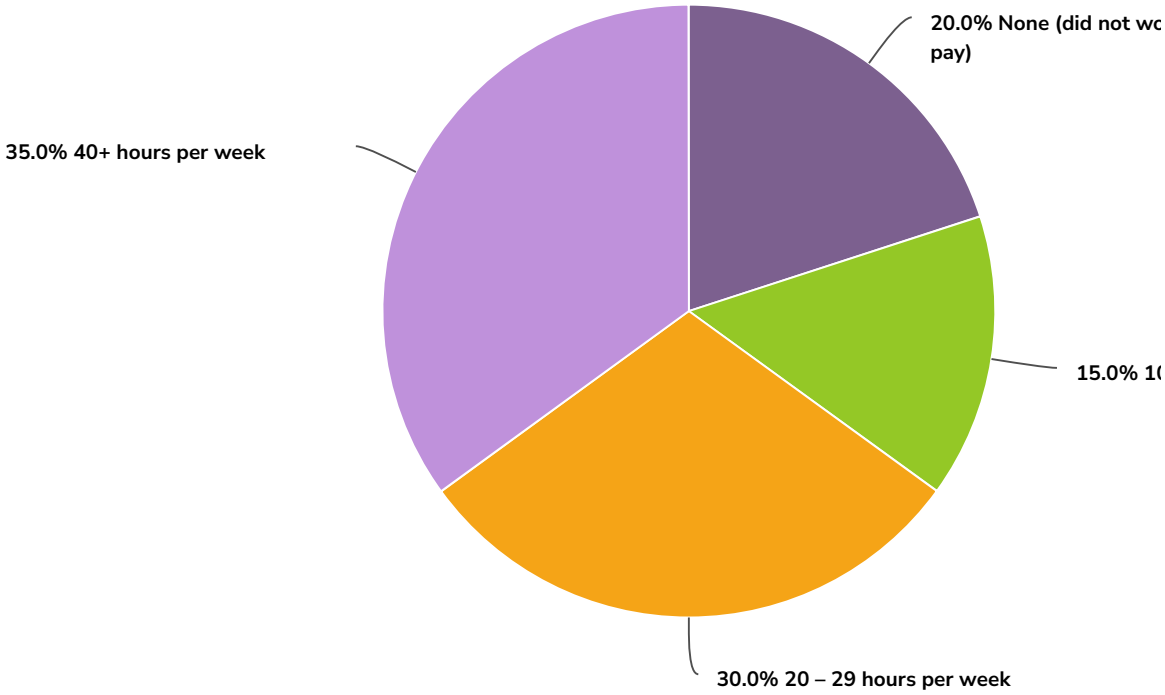


Value	Percent	Responses
Less than half time (1 – 5 units per semester)	25.0%	5
At least half time (6 – 11 units per semester)	40.0%	8
		Totals: 20

Value	Percent	Responses
Full time (12 or more units per semester)	35.0%	7

Totals: 20

2. On average, how many hours per week did you work for pay while pursuing your education at SMC?



Value	Percent	Responses
None (did not work for pay)	20.0%	4
1 – 9 hours per week	0.0%	0
10 – 19 hours per week	15.0%	3
20 – 29 hours per week	30.0%	6
30 – 39 hours per week	0.0%	0

Totals: 20

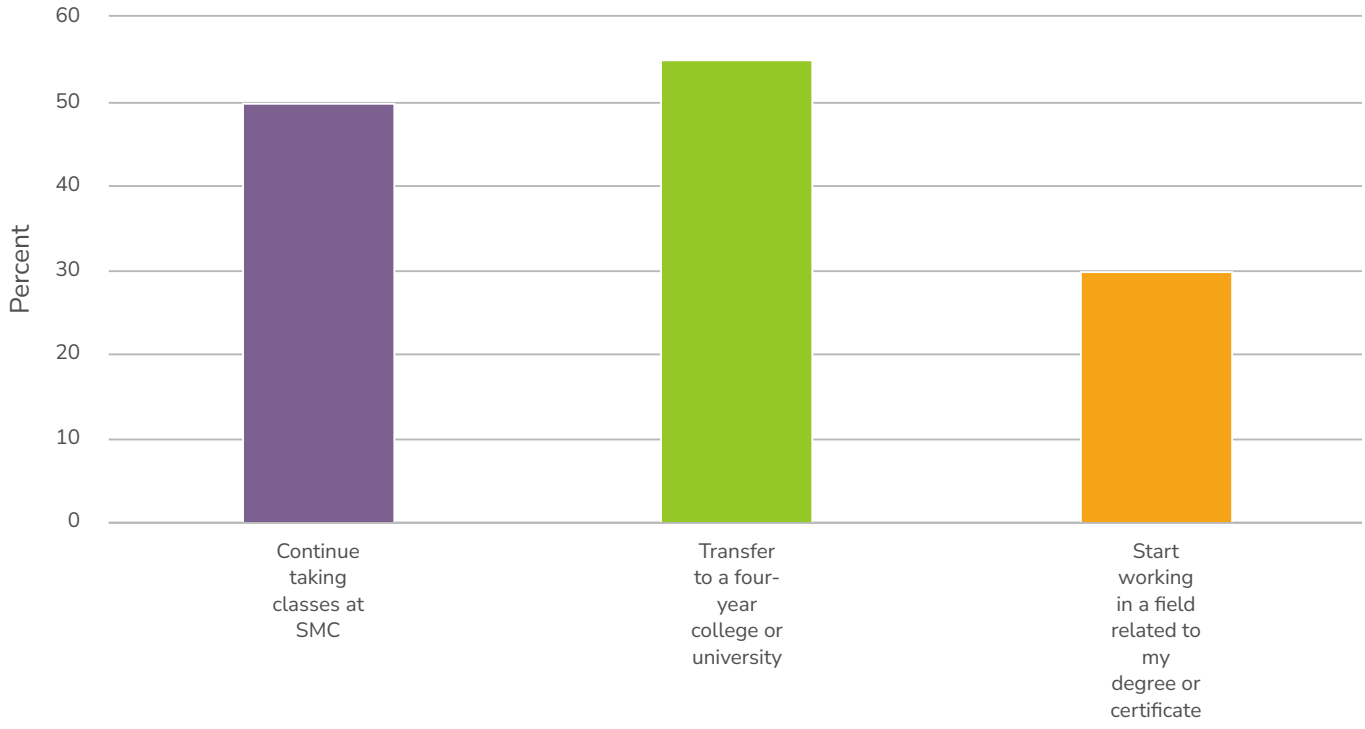
Value	Percent	Responses
40+ hours per week	35.0%	7

Totals: 20

3. How true are the following statements about your overall experience at SMC?

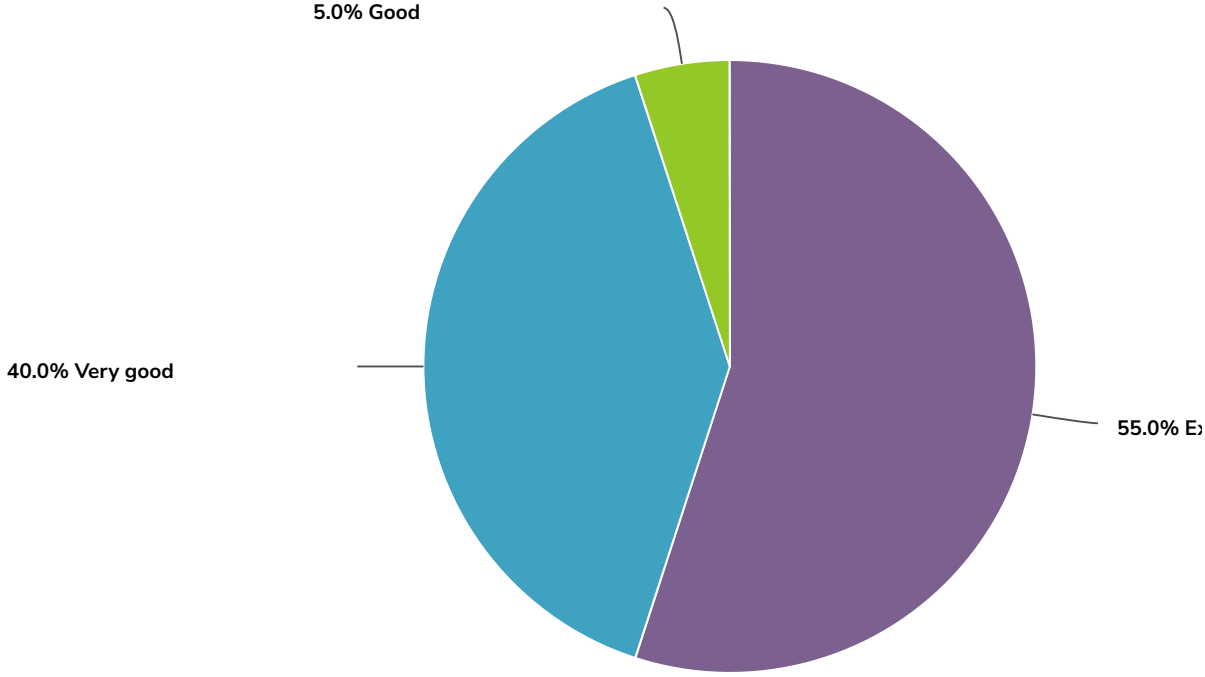
	Very tru
I achieved my educational goal at SMC	
Count	13
Row %	65.0%
Most of my interactions with SMC instructors/faculty have been positive	
Count	13
Row %	68.4%
Most of my interactions with SMC staff and administrators have been positive	
Count	14
Row %	70.0%
SMC offers high quality student services and programs (i.e., counseling, financial aid, special programs)	
Count	13
Row %	65.0%
SMC offers high quality learning support services (i.e., tutoring, supplemental instruction, etc.)	
Count	12
Row %	60.0%
I feel supported by SMC in general	
Count	12
Row %	60.0%
I feel like I belonged at SMC	
Count	10
Row %	50.0%
Totals	
Total Responses	

4. What are your plans for Fall 2022? Check all that apply



Value	Percent	Responses
Continue taking classes at SMC	50.0%	10
Transfer to a four-year college or university	55.0%	11
Start working in a field related to my degree or certificate	30.0%	6
Apply my degree or certificate to my current job	15.0%	3

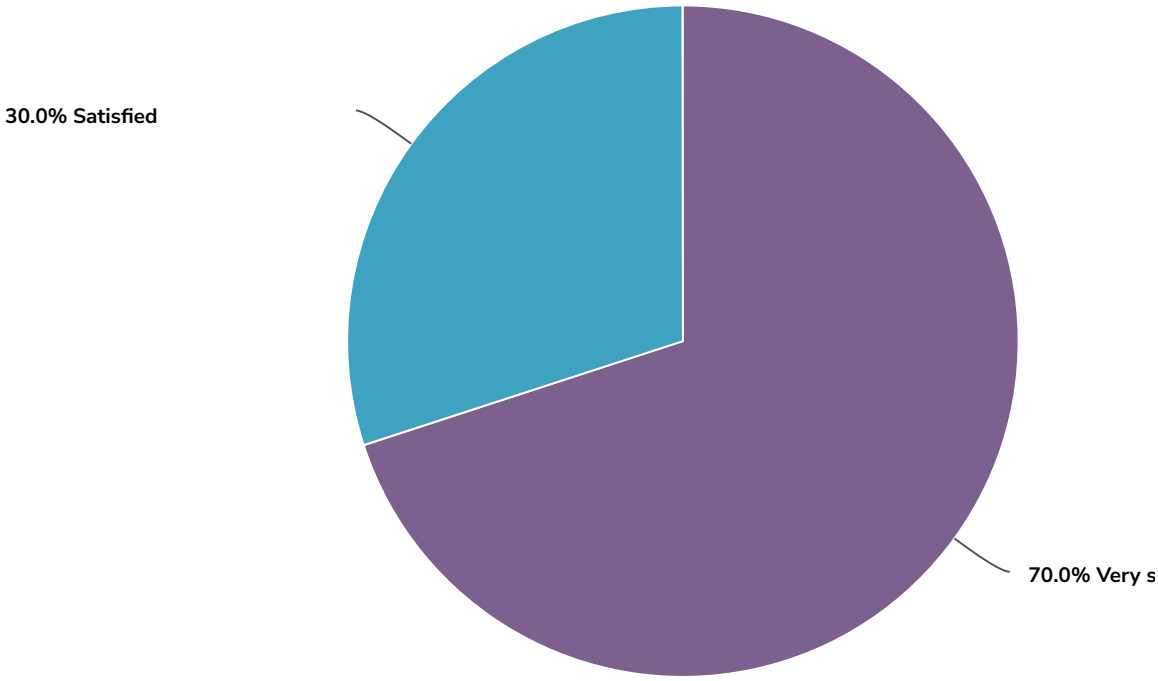
5. Rate how well your SMC education prepared you for your Fall 2022 plans:



Value	Percent	Responses
Excellent	55.0%	11
Very good	40.0%	8
Good	5.0%	1
Fair	0.0%	0
Poor	0.0%	0

Totals: 20

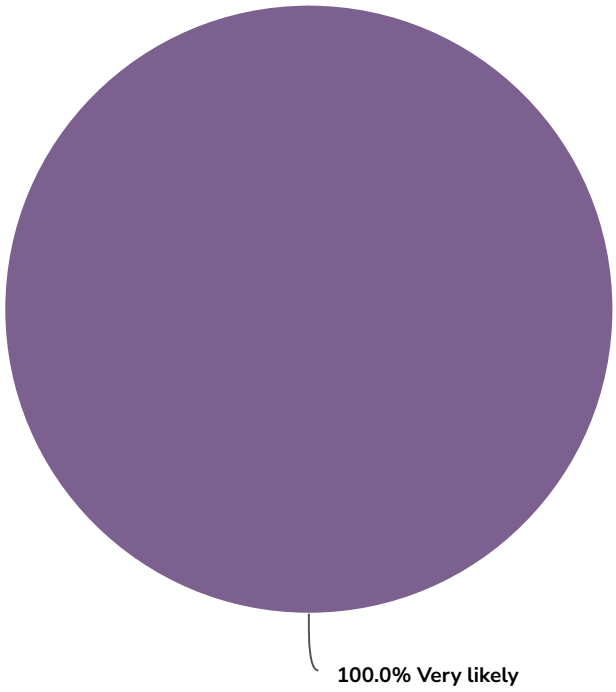
6. Overall, how satisfied are you with your experiences at SMC?



Value	Percent	Responses
Very satisfied	70.0%	14
Satisfied	30.0%	6
Somewhat satisfied	0.0%	0
Somewhat dissatisfied	0.0%	0
Dissatisfied	0.0%	0
Very dissatisfied	0.0%	0

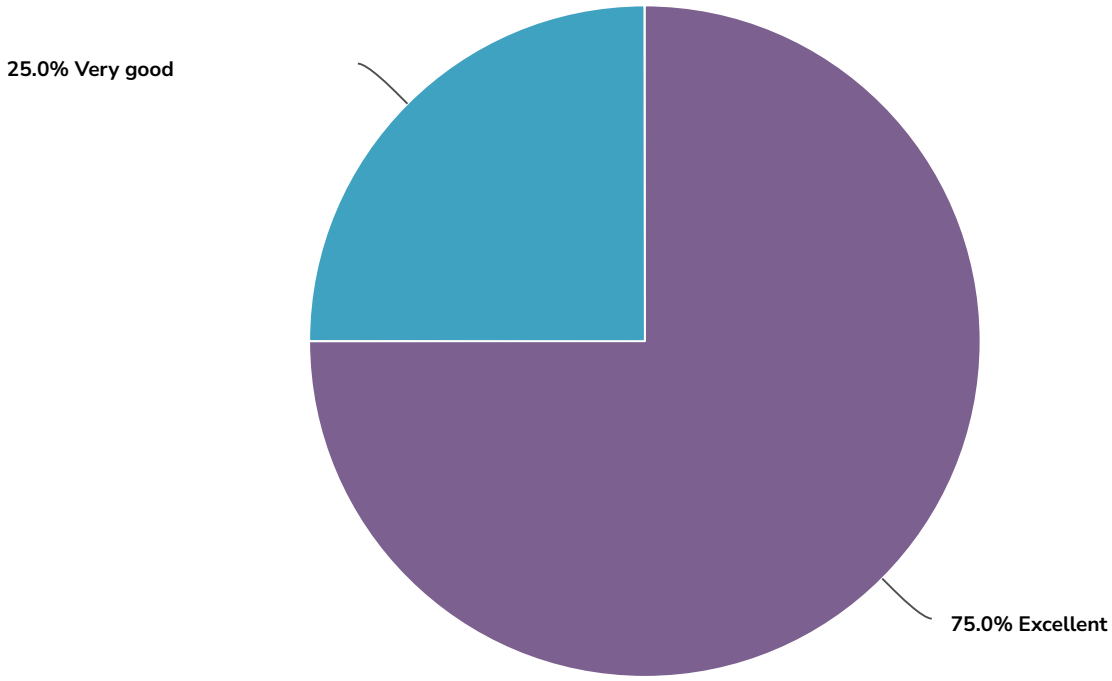
Totals: 20

7. How likely are you to recommend SMC to a friend or family member?



Value	Percent	Responses
Very likely	100.0%	20
Somewhat likely	0.0%	0
Not likely at all	0.0%	0
		Totals: 20

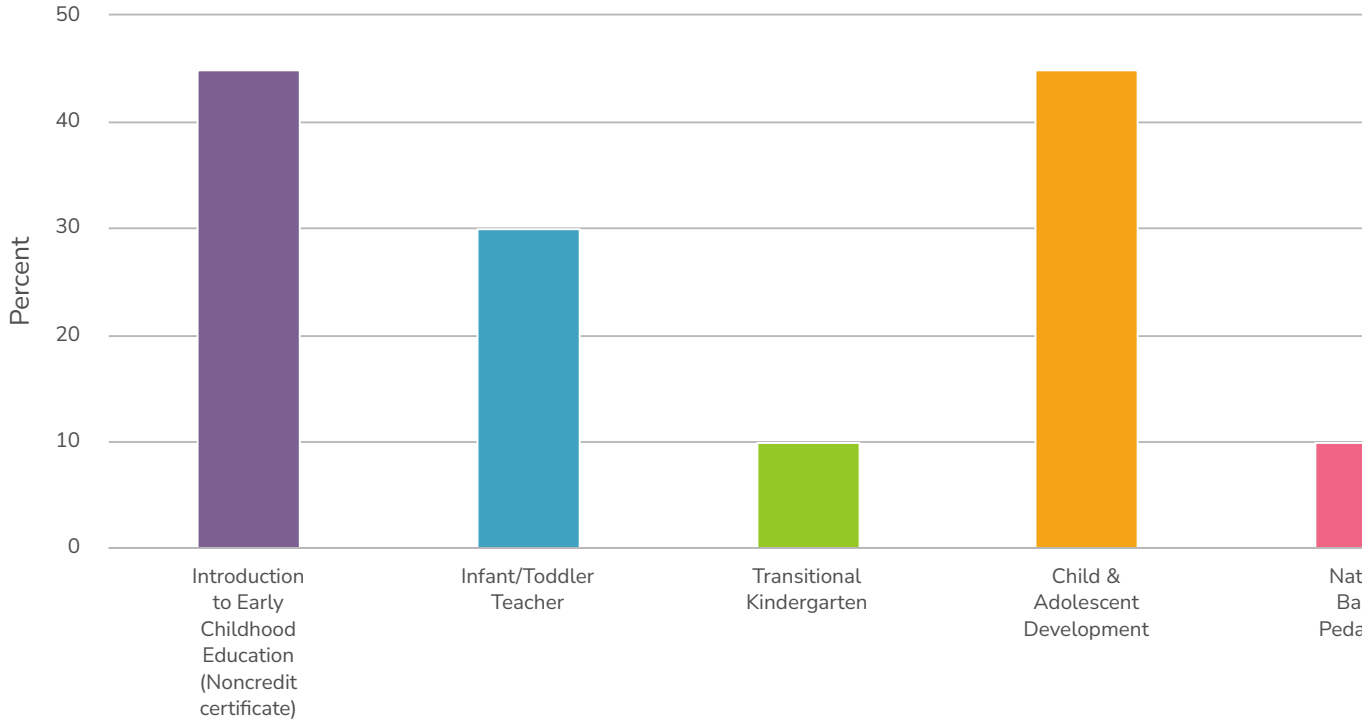
8. Rate the quality of education you received in your program of study (major).



Value	Percent	Responses
Excellent	75.0%	15
Very good	25.0%	5
Good	0.0%	0
Fair	0.0%	0
Poor	0.0%	0

Totals: 20

9. Which of the following degrees or certificates did you complete in 2022-2023? Check all that apply.



Value	Percent	Responses
Introduction to Early Childhood Education (Noncredit certificate)	45.0%	9
Infant/Toddler Teacher	30.0%	6
Transitional Kindergarten	10.0%	2
Child & Adolescent Development	45.0%	9
Nature-Based Pedagogy	10.0%	2
Other - Write In (click to view)	15.0%	3

10. How true are the following statements about your current knowledge, abilities, and skills?

I am able to differentiate between the different ages and stages of growth and development
Count
Row %

26 of 85

I am able to create a culturally and developmentally appropriate environment for children in a daycare or preschool
Count
Row %

I know what early childhood education employers are looking for
Count
Row %

I feel ready to enter the early childhood education workforce
Count
Row %

Totals
Total Responses

11. How true are the following statements about your current knowledge, abilities, and skills?

	Very true of
I am able to set up and adjust a classroom environment based on a child's age and learning needs	
Count	5
Row %	83.3%
I feel confident in my ability to communicate effectively with families of children in a school setting	
Count	5
Row %	83.3%
I have at least one strategy I could use to invite families of children to participate in the classroom	
Count	5
Row %	83.3%
I feel ready to start working as a teacher in an infant/toddler classroom	
Count	4
Row %	66.7%
Totals	
Total Responses	

12. How true are the following statements about your current knowledge, abilities, and skills?

I am able to effectively integrate learning into children's play in my classroom
Count
Row %

I am able to individualize curriculum based on a preschool child's knowledge, skills, needs, and interests
Count
Row %

I know the steps I need to take in order to align my existing classroom/curriculum to to the California Preschool Curri
Count
Row %

I feel ready to start working with transitional kindergarten children in a classroom setting
Count
Row %

Totals
Total Responses

13. How true are the following statements about your current knowledge, abilities, and skills?

I am able to explain to someone how socialization, familial structure, schools, and cultures impact the lives of childre
Count
Row %

I am able to apply at least one child development theory or perspective to better understand how children and adole
Count
Row %

I feel ready to enroll in upper-division coursework in my major.
Count
Row %

Totals
Total Responses

14. How true are the following statements about your current knowledge, abilities, and skills?

I am able to name at least one benefit of an outdoor learning environment (OLEs) for children's growth, learning, and
Count
Row %

I am able to adapt existing curriculum to foster children's learning and play activities to be nature or environments ba
Count
Row %

If given the opportunity, I would be able to create and set up a quality outdoor learning environment (OLE) for childr
Count
Row %

Totals
Total Responses

This is a report for "2022 SMC Graduates Survey" (Survey #6859787)

Core Inquiry Evidence – Early Childhood Education

The PLOs below reflect the outcome of a PLO assessment and improvement cycle in process for the Early Childhood Education department. The department convened during a departmental meeting to deliberate on the outcomes of the ECE Program Learning Outcomes (PLO) survey data; that survey, referenced in SMC's response to the ACCJC's Core Inquiry, was sent directly to students and asked them to self-assess their level of mastery of the program's outcomes. During the department's reflection and discussion, the student PLO survey data was considered in conjunction with results from the National Association for the Education of Young Children (NAEYC) key assessment assignments across approximately ten different courses, as well as the Student Learning Outcomes (SLO) results spanning the department's foundational, core, and culminating courses.

Collectively, the faculty found meaning in students sharing their perspectives on their attainment of competencies outlined in the Program Learning Outcomes (PLOs). The survey brought to light a significant revelation: a considerable portion (roughly 50%) of the PLOs within the program could be improved with language that would render the objectives more measurable. Consequently, this revelation prompted in-depth discussions among the faculty and collaborative work to revise several PLO objectives. These revised objectives, approved by the department faculty, are slated to undergo review through the Curriculum Committee in the upcoming fall season.

Early Childhood Education AS-T

Current PLOs:

Upon completion of the program, students will demonstrate the knowledge, skills and dispositions to meet the entry-level requirements for early childhood professionals working in programs regulated by the California Department of Social Services (Title 22). This degree is designed to meet the requirements for the California Child Development Teacher permit and satisfies the course work required to transfer to a 4 year institution.

Proposed PLO Update:

Upon completion of the program, students will demonstrate through written/oral academic work and fieldwork in early childhood education the knowledge, skills, and dispositions required for entry-level employment and transfer, including:

1. CHILD DEVELOPMENT & LEARNING - Utilizes developmental theory and research to facilitate children's development and learning across social-emotional, language, cognition and perceptual and motor development domains from pregnancy through age 8.
2. CULTURE, DIVERSITY & EQUITY - Attends to and interacts with children and families in a culturally responsible way that includes respect for differences, similarities, language and ethnicities from a wide variety of perspectives through the learning environment, approaches, and communication between educator and family.

3. FAMILY & COMMUNITY ENGAGEMENT - Build relationships with families and communities across social contexts in a meaningful way to be stronger influences and supports for a child's overall development and learning at home and at school.
4. LEARNING ENVIRONMENTS & CURRICULUM - Facilitates learning and development by integrating appropriate teaching strategies to identify curricular goals, create stimulating learning environments and plan meaningful experiences using observations, screening and assessment to continuously inform practices.

PLO/SLO Coordinator Job Description

Overarching Goals of the Position:

- Improved culture of outcomes assessment (SLO, PLO), including perception of the efficacy of the SLO assessment process
- All course SLOs and PLOs are aligned, and assessment of outcomes are robust, ongoing, and lead to course and program improvement
- All PLOs are aligned with program maps for guided pathways

Position Overview:

The faculty SLO Coordinator leads faculty in efforts to promote, design, and implement the assessment of course student learning outcomes (SLOs) and degree/certificate program learning outcomes (PLOs). The SLO Coordinator acts as the liaison between Academic Affairs, academic departments, the Program Review Committee, and the Curriculum Committee and works to ensure that the SLO/PLO assessment processes are integrated into program review and planning activities.

Preferred Experience:

Previously served on the Curriculum Committee and/or experience developing curriculum

Term Length:

Three (3) academic years (2023-2025); Proposed January start date for inaugural position.

- **Deliverables January – June 2024:**
    - Attend the **SLO Symposium** (January 2024)
    - With input from the Program Review SLO Taskforce and relevant committees, draft a **communication plan** to improve awareness and understanding of and build buy-in for the current PLO/SLO processes
    - With input from department chairs, **publish a guide** outlining the standards, expectations, and suggested timelines of SLO and PLO assessment at SMC
    - Develop content for and facilitate **workshops** targeted to faculty on topics such as the value of SLOs and PLOs, common assessment tools and procedures, etc.
    - Work with Institutional Research and academic departments to deploy graduate surveys to students completing degree and certificate programs in the 23-24 academic year
    - **Research best practices** in the alignment of course and PLOs
    - Draft strategic plan for promotion of effective PLO/SLO assessment practices for the next five years, including a work plan for the coordinator position for the 24-25 academic year

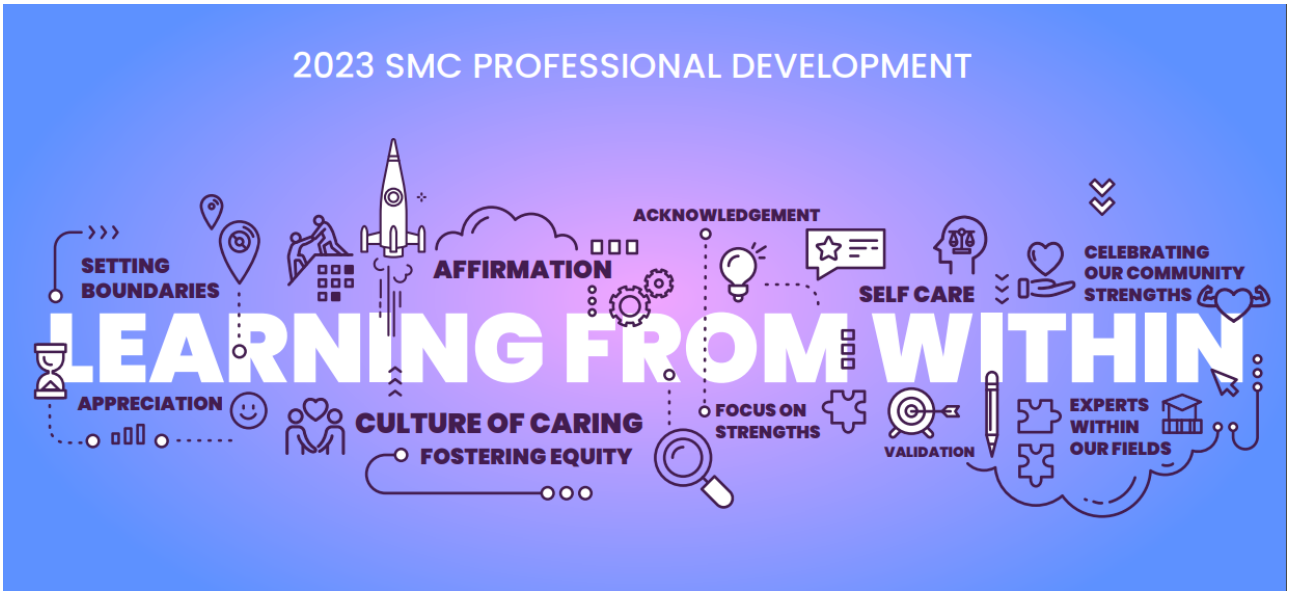
Duties:

- Work with instructional program leaders to define standards and expectations related to SLO/PLO assessment; document and publish agreed upon standards/expectations (for example, how often outcomes should be assessed, goal-setting methods for improvement)

- Develop materials and guides and facilitate training sessions related to the development and assessment of outcomes
- Document and monitor the progress of the College's SLO assessment activities and accomplishments across the college
- Establish recommendations and initiatives to promote SLO/PLO completion across all instructional programs
- Establish recommendations to promote alignment of course SLOs to PLOs
- Lead efforts to raise awareness of the role of SLO assessments in student learning and success, racial equity, and program improvement and create buy-in amongst faculty
- Lead efforts to communicate the standards and expectations of SLO activities for accrediting purposes.
- Ensure SLO and PLO statements are written in a student-centered manner and accurately reflect course and program objectives
- Serve as liaison to the Program Review and Curriculum Committees
- Keep abreast of best practices related to effective outcomes development and assessment processes

Santa Monica College
EPICENTER
Equity-minded **P**rofessional **I**nnovation

Fall Professional Development Day is August 24, 2023!



FIND THE FULL SCHEDULE ON THE PD DAY WEBSITE!

The EpiCenter is going to shake up professional development at SMC!

We look forward to providing all employees at SMC innovative professional development and equity content.

If you have immediate questions or concerns, please email EpiCenter@smc.edu and we will get back to you as soon as possible.

Spotlight on Equity: Upcoming and Recent Events from Our Partners

Workshops, Webinars, and other events related to Equity from around SMC and our trusted partners in Higher Education

10/20/23: Championing an Equity-Focused Approach to Student Success at the Community College: Empowering Students and Faculty in STEM, A One-Day Conference

Championing an Equity-Focused Approach to Student Success at the Community College

On October 20th, 2023, Santa Monica College, in partnership with the California Community Colleges' Success Network (3CSN), will be hosting an NSF-sponsored one-day virtual conference (#2231669) that focuses on practices in STEM aimed at closing equity gaps for historically marginalized communities, including Black and Latinx students. This conference provides a platform to exchange ideas and knowledge, and to highlight faculty innovations, programs, and student support services that promote equity and inclusion in STEM education. Keynote by Dr. Terrell R. Morton, Assistant Professor of Identity and Justice in STEM Education, and Scholar-Activist.

Find more information on the Equity in STEM Conference website .

Employee Focus Group Sessions

In response to the findings of the 2022 Big Annual Employee Survey, the College is conducting focus groups organized by constituency groups to better understand how the College can respond to make employees feel more valued and identify steps to create a more welcoming and collegial working environment. Register for focus groups by using the links below:

Classified Professionals

- Friday, 9/15 (10 - 11:30 a.m.) : Zoom Focus Group Registration for Session 1
- Monday, 9/18 (1 - 2:30 p.m.) : Zoom Focus Group Registration for Session 2
- Wednesday, 9/20 (9 - 10:30 a.m.) In-person at SSC 223 : Sign Up for an in-person Focus Group

Adjunct Faculty

- Tuesday, 9/19 (11 a.m. - 12:30 p.m.) : Zoom Focus Group Registration Session 1
- Friday, 9/22 (9 - 10:30 a.m.) : Zoom Focus Group Registration Session 2

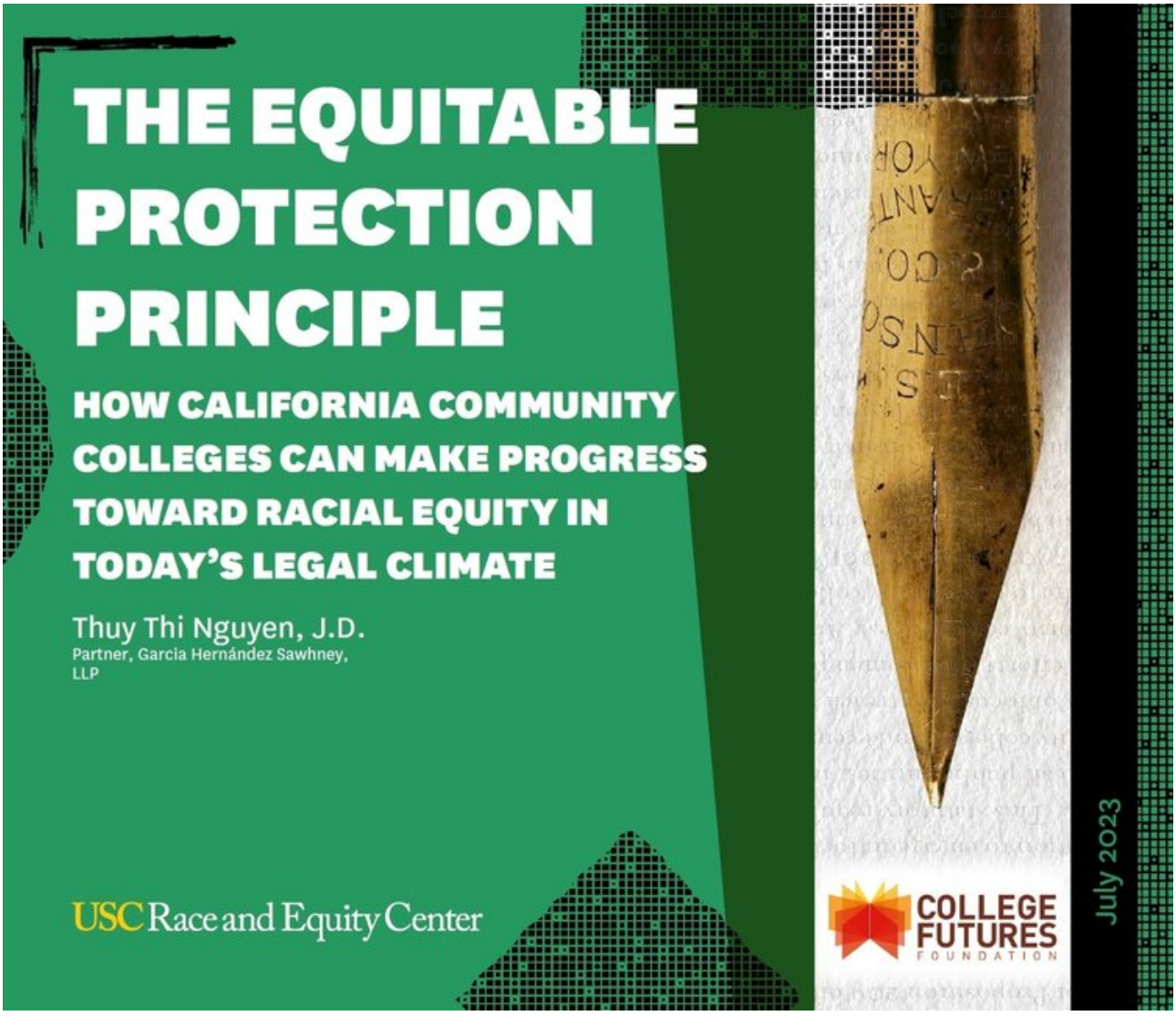
All Faculty (Adjuncts and Full-Time)

- Friday, 9/22 (1 - 2:30 p.m.) : Zoom Focus Group Registration Session 1
- Tuesday, 9/26 (11 a.m. - 12:30 p.m.) In-person at SSC 223: Sign Up for an in-person Focus Group

Managers

- Tuesday, 9/12 (9 - 10:30 a.m.) In-person at SSC 223: Sign Up for an in-person Focus Group
- Friday, 9/29 (10:30 a.m. - 12 p.m.) : Zoom Focus Group Registration for Session 2

USC Race and Equity Center Report Release: July 2023



USC Race and Equity Center Latest Report: "The Equitable Protection Principle: How California Community Colleges Can Make Progress Toward Racial Equity in Today's Legal Climate" by Thúy Thị Nguyễn, Partner, Garcia Hernández Sawhney, LLP.

Read the full report here

Watch the announcement video here

Per USC's Adrián Trinidad: "Even as California limited the use of race since 1996 (e.g., Proposition 209), there are race-conscious ways that colleges can support and ensure the success of their students of color. We invite you to read this rich, informative report outlining ways colleges can legally make progress toward racial equity, even in light of the latest supreme court ruling."

The SMC Division of Equity, Pathways, and Inclusion invited the SMC community to join a session with the author held by USC.

Session Information:

Conversation with report author Thúy Thị Nguyễn

Date and time: July 19th at 12:30 p.m. PT

Thúy Thị Nguyễn is a Partner at the law firm of Garcia Hernández Sawhney. Nguyen served as in-house General Counsel to the Peralta Community College District for more than 11 years. In addition to her duties as chief legal counsel, she served as Acting Vice Chancellor for Human Resources for one year and as Districtwide Strategic Planning Manager for two years.

Nguyen was an adjunct instructor/lecturer teaching education law for several years at California State University, East Bay. She previously practiced school desegregation law: Nguyen worked on desegregation consent decree and voluntary integration programs for school districts such as San Jose Unified School District and Berkeley Unified School District, and served on the Court Monitoring Team for the San Francisco Unified School District desegregation consent decree.

From January to June 2015, Nguyen took temporary leave from Peralta CCD to serve as Interim President and Chief Executive Officer of the Community College League of California (a non-profit organization that represents trustees and chancellors/college presidents of the 72 community college districts in California). As Interim CEO of CCLC, Nguyen co-redesigned the statewide training program on governance (Collegiality in Action) with the State Academic Senate President and provided training, technical assistance to community colleges on governance and Assembly Bill 1725.

Nguyen also served as Interim General Counsel for the California Community College's Chancellor's Office where she wrote a legal guidance on Equal Employment Opportunities and Proposition 209 and initiated a change in the statewide EEO funding allocation to the Multiple-Method model in order to promote diversity. Thereafter, in 2016, Nguyen was

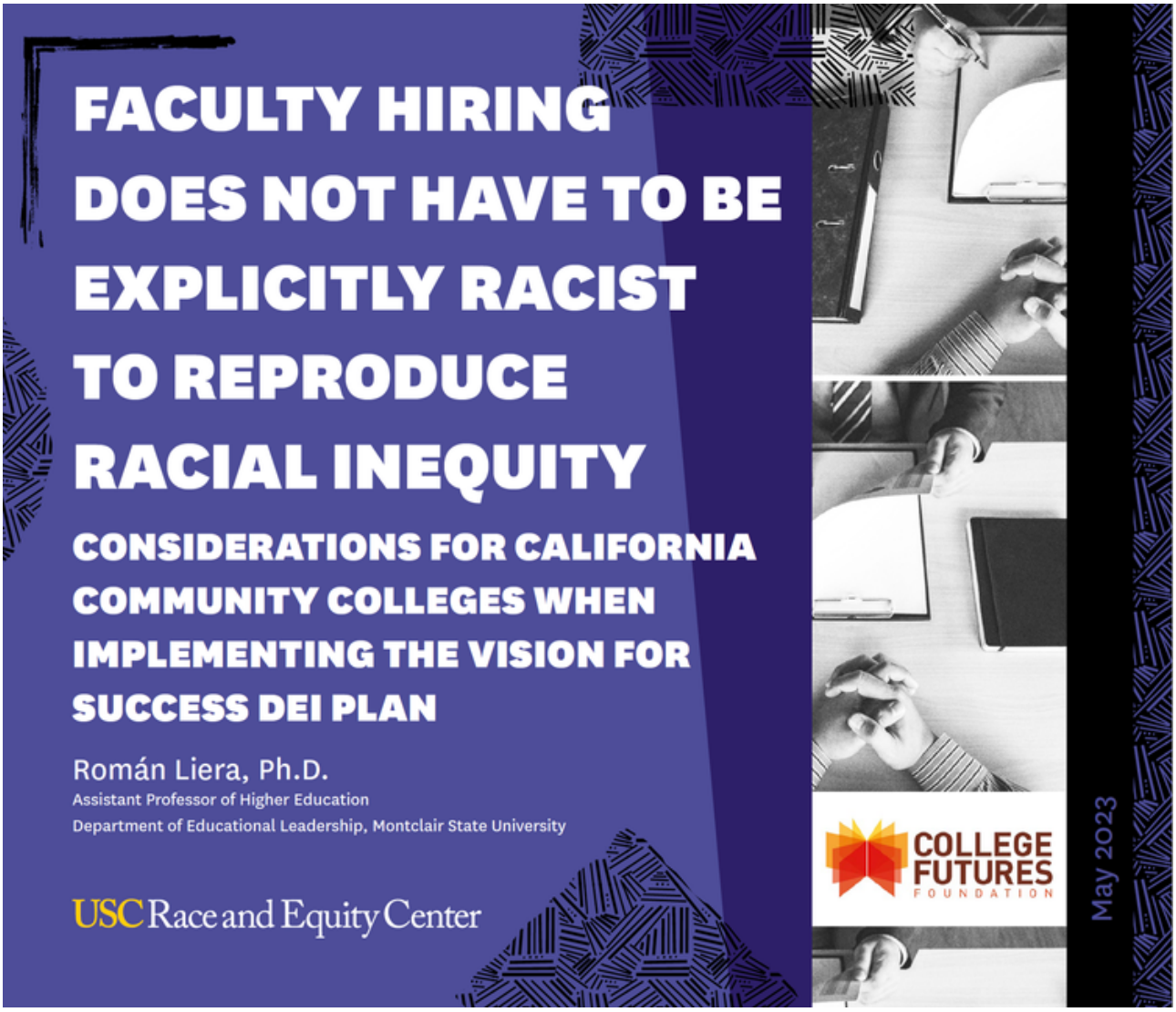
appointed President of Foothill College – becoming the first Vietnamese American college president in the country, a position she served for over five years.

Nguyen has received various honors and awards throughout her career. The Mayor of Oakland named June 23, 1993 “Thuy Thi Nguyen Day” in Oakland for her service to the city. Nguyen has been inducted into the Castlemont High School’s Alumni Hall of Fame. In 2007, she was named one of eighteen “Best Lawyers Under 40” in the country by the National Asian American Bar Association. In 2016, for her leadership in creating an unprecedented community college pathway to law school initiative, Nguyen received the coveted Diversity Award from the State Bar of California – a statewide award given to an individual each year who has helped diversify the legal profession. In 2017, she was presented with the Trailblazer Award by the National Conference for Vietnamese American Attorneys.

Also in 2017, Nguyen was honored as part of the Carnegie Corporation’s “Great Immigrants” tribute in the New York Times. The tribute is aimed at recognizing naturalized citizens, including former refugees such as Nguyen, who have helped advance society, culture, and the economy.

Nguyen earned her B.A. in Philosophy from Yale University and J.D. from the University of California, Los Angeles School of Law, where she was a member of the inaugural class of the Public Interest Law and Policy Program. Nguyen is a Paul and Daisy Soros for New Americans Fellow.

USC Race and Equity Center Report Release: May 2023



USC Race and Equity Center Latest Report: "Faculty Hiring Does Not Have to be Explicitly Racist to Reproduce Racial Inequity: Considerations for California Community Colleges When Implementing the Vision for Success DEI Plan" by Román Liera, Ph.D., Assistant Professor of Higher Education, Department of Educational Leadership, Montclair State University.

Read the full report here

Watch the announcement video here

Dr. Román Liera is an Assistant Professor of Higher Education in the Department of Educational Leadership at Montclair State University. He was born and raised in the San Fernando Valley in Los Angeles County, where he attended Los Angeles Pierce College before transferring to San Diego State University to earn a Bachelor of Arts in Psychology and a minor in counseling and social change. He then moved to New York City to attend Teachers College, Columbia University, where he received a Master of Arts in Higher and Postsecondary Education before moving back to Los Angeles, where he earned a Ph.D. from the University of Southern California. Dr. Liera designed his research program to study racial equity and organizational change in Higher Education. Specifically, he draws on qualitative research methods to understand how organization processes, norms, and practices perpetuate racial inequity. He anchored his scholarship on a theoretical understanding of university and college campuses as racialized organizations with cultures and structures constraining administrators and faculty efforts to advance racial equity. His current research projects focus on understanding how racism operates in doctoral student socialization, the academic job market, faculty hiring, reappointment, tenure and promotion, and presidential hiring. His research appears in the Journal of Higher Education, American Educational Research Journal, Teachers College Record, Review of Higher Education among others.

6/28, 7/26, and 8/30/2023 - Race Relay: Community Dialogues

SMC recently held Race Relay, a multimedia production that was a collaboration of several groups on Campus. We would like to personally invite you to help us continue the conversation and share this opportunity widely.

As a part of the Race Relay experience, "passing the baton" to the community is a key and integral piece to the movement. This is where the real work for our community begins, and we hope you will join us in helping to cultivate a safe space to discuss race. Our goal is to continue the conversation monthly and it is not required that you attended the performances. We welcome all who want to join us and engage in dialogue centering race. All we ask of participants is to come with an open mind that is willing to explore, practice active listening, utilize your own personal experiences, and be willing to engage in conversation.

This event will take place in our newly opened Student Equity Center (Located on SMC Main Campus, Cayton Building, Basement). Be one of the first to get a sneak peek of the space before our Fall Semester Grand Opening.

Race Relay Dates:

- June 28, 2023

- July 26, 2023
- August 30, 2023

Race Relay conversations will start at 5:30 p.m. on all the above dates.

RSVP for a Dialogue Session Here

RSVP is not required; however encouraged to help know how many participants to prepare for.

Questions can be emailed to the Student Equity Center at studentequitycenter@smc.edu

In collaboration with the SMC Public Policy Institute; SMC Associated Students; SMC Division of Equity, Pathways & Inclusion; SMC Student Equity Center, SMC Community and Academic Relations, Santa Monica Bay Area Human Relations Council, and the City of Santa Monica.

Thurs. 5/4/2023 - 10 a.m.: Increasing Enrollment and Success for College Men of Color (CORA)

Community colleges across the U.S. have experienced significant enrollment declines during the COVID-19 pandemic.

These declines were particularly concerning for men of color. For instance, community college enrollments for Black and Native American men dropped by 26% and 24%, respectively. However, many colleges have struggled to return enrollments and retention to their pre-pandemic levels.

This webinar focused on recommendations for enrollment and student success efforts designed to support community college men of color. Our presenters included **Drs. Frank Harris III, Marissa Vasquez, and J. Luke Wood.**

New Course: COMPUTER SCIENCE 310, Cloud Systems Programming

Units:	3.00
Total Instructional Hours (usually 18 per unit):	54.00
Hours per week (full semester equivalent) in Lecture:	3.00
In-Class Lab:	0.00
Arranged:	0.00
Outside-of-Class Hours:	108.00
Date Submitted:	May 2023
Transferability:	Transfers to CSU
Degree Applicability:	Credit - Degree Applicable
Prerequisite(s):	Admission to the Bachelor degree program in Cloud Computing
Proposed Start:	Fall 2024
TOP/SAM Code:	070710 - Computer Programming / B - Advanced Occupational
Grading:	Letter Grade or P/NP
Repeatability:	No
Library:	List of suggested materials has been given to Librarian
Minimum Qualification:	Computer Science
Program Impact:	Cloud Computing Bachelor's degree (forthcoming)

Rationale
This is a new course for the Cloud Computing Bachelor of Science Degree

I. **Catalog Description**
This course is designed to equip students with the essential skills for programming in a cloud computing environment. In this course, students will explore various aspects of cloud programming including customizing workflows, optimizing techniques, and utilizing coding for automation. Topics covered include how to use code to create feedback-based computing approaches, collaborate seamlessly with developers, troubleshoot effectively, and utilize the full potential of cloud software platforms. Using hands-on practice and real-world use cases, students will develop the skills required for cloud system programming.

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 7 years)
1. Amanda Wegener, 1, Cloud Computing: Systems and Technologies, CLANRYE INTERNATIONAL © 2019, ISBN: 978-1632407948
2. Programming Google Cloud: Building Cloud Native Applications with GCP, 1, Rui Costa, Jason Baker, O'RIELLY Media © 2023, ISBN: 781492089032

III. **Course Objectives**
Upon completion of this course, the student will be able to:
1. Demonstrate knowledge of software-based cloud computing.
2. Create and apply software-based cloud infrastructure, networking and storage.
3. Monitor and optimize cloud-based systems workload.

IV. **Methods of Presentation:**
Distance Education, Lecture and Discussion, Observation and Demonstration, Discussion

V. **Course Content**

% of Course	Topic
20.000%	Coding for Cloud Engineering and Management
20.000%	Automating Repetitive Tasks to Boost Efficiency
20.000%	Effective Collaboration with Developers through Code Understanding
20.000%	Troubleshooting Infrastructure and Application Issues with Coding Skills

20.000%	Customizing cloud workflows using scripting
100.000%	Total

VI. **Methods of Evaluation**

% of Course	Topic
10%	Class Participation
25%	Exams/Tests
25%	Final Project
25%	Homework
15%	Group Projects
100%	Total

VII. **Sample Assignments:**

Assignment 1: In this assignment, you will create a customized workflow and automating task within a cloud computing environment using coding techniques. You are required to design a custom workflow for a cloud-based application or service of your choice. Your submission should include a detailed explanation of how this customized workflow enhances efficiency and productivity.

Assignment 2: For this assignment, you will conduct cloud system optimization while incorporating coding to reinforce your understanding. The firstly you are required to analyze the performance optimization strategies of a selected cloud service provider. Utilize coding examples to compare and contrast different

VIII. **Student Learning Outcomes:**

1. Upon completion of this course, students will design and implement cloud-based systems.
2. Upon completion of this course, students will apply advanced tools to monitor and maintain cloud-based systems.

CS 310 Distance Education Application

- ☑ Fully Online
- ☑ Online/Classroom Hybrid (not a delivery option when campus is closed)

1a. Instructor - Student Interaction:

Students get feedback on their weekly assigned work. Feedback includes criticism of their work and suggestions on how to better study. In the two midterm tests and the final exam, students get feedback on their errors and how to improve. In the weekly threaded discussions, students must post answers to given questions/prompts and they must provide unique answers. They get feedback on their answers, how complete they are and what they can improve on.

1b. Student - Student Interaction:

Every week, students must post messages as a response to a problem specification. They must comment on each other's work. Students are placed in groups to enable them to contribute as well as read all posted messages.

1c. Student - Content Interaction:

Each week, students get a lecture in the form of video and PDF files. They may also get additional videos to explain certain concepts. Additionally, there may be supporting files and documents added to each week's content.

1d. Distance Ed Interactions:

Online class activities that promote class interaction and engagement	Brief Description	% of Online Course Hours
Discussion Boards	Students post weekly answers to questions. Instructor will provide feedback and a grade based on posting.	20.00%
Exams	Sample practice certification exam preparation.	20.00%
Online Lecture	PowerPoint slides with animation and annotations to explain the topics covered. Videos will be presented for special topics.	20.00%

Written assignments	Students submit written assignments and get individual feedback as well as sample solutions and general comments from the whole class.	20.00%
Project Presentation		20.00%

2. Organization of Content:
Content will be organized in folders (modules). Each module will contain video lectures, extra readings as well as links to articles on the most recent discussions in the media on the topic. The module will also contain threaded discussion where students interact with their instructor as well as with each other. There are also links to the homework and or group project or any other assigned course work item.

3. Assessments:

% of grade	Activity	Assessment Method
10.00%	Discussion Board Participation	Weekly discussions facilitate question/answering as well as providing feedback or commenting on postings. Each week students must address a main discussion topic.
25.00%	Homework	At least 5 programming and or essay type assignments will be required
25.00%	Group Projects	Groupt projects faciltite not only the students practice of the tehcnical skills they learn but also how to communicate and work with others,
25.00%	Final Project	Grade reflects the technical skills of the project but also the presentation and communication skills.
15.00%	Tests	Midterm, quizzes and final exams are inlcuded to reflect the student's knowledge of the theoretical ascpect of the content covered.

4. Instructor's Technical Qualifications:
Instructors must be well versed in the use of computers, the web, and course management systems (CMS) to interact with students through the CMS messaging boards, email, and online video and chat meetings.

5. Student Support Services: (e.g. links to counseling, financial aid, bookstore, library, etc.):
Through the syllabus, faculty can place links to library, bookstore, financial aid, disabled students center and counseling resources.

6. Accessibility Requirements:
The course management system must be Section 508 complaint as well as any videos, images, and tables must be properly captioned. All PDF's and other added files and documents must be Section 508 compliant.

7. Representative Online Lesson or Activity:
On the discussion board, students will be presented with a topic to discuss. Working in groups, one group of students will present a model, while other groups will provide critique and or support in favor of that model. Grades along with comments will be assigned based on the quality and creativity of such replies.

New Course: COMPUTER SCIENCE 320, Cloud Developer

Units:	3.00
Total Instructional Hours (usually 18 per unit):	54.00
Hours per week (full semester equivalent) in Lecture:	3.00
In-Class Lab:	0.00
Arranged:	0.00
Outside-of-Class Hours:	108.00
Date Submitted:	May 2023
Transferability:	Transfers to CSU
Degree Applicability:	Credit - Degree Applicable
Prerequisite(s):	Admission to the Bachelor degree program in Cloud Computing
Proposed Start:	Fall 2024
TOP/SAM Code:	070710 - Computer Programming / B - Advanced Occupational
Grading:	Letter Grade or P/NP
Repeatability:	No
Library:	List of suggested materials has been given to Librarian
Minimum Qualification:	Computer Science
Program Impact:	Cloud Computing Bachelor's degree (forthcoming)

Rationale
This is a new course for the Cloud Computing Bachelor of Science Degree

I. **Catalog Description**
In this course, students will develop and deploy cloud native applications. Topics covered will include application life-cycle management, the use of containers, and the development of serverless applications. Students will write code, test, debug and deploy to the Continuous Integration/Continuous Delivery (CI/CD) software application lifecycle.

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 7 years)

1. Cloud Computing: Concepts, Technology And Architecture, 2nd, Thomas Erl, Ricardo Puttini and Zaigham Mahmood, Pearson © 2023, ISBN: 978-0138052256
2. Cloud Computing Solutions Architect : A Hands-On Approach, 1st, Arshdeep Bahga and Vijay Madisetti, VPT Publishers © 2019, ISBN: 978-0996025591
3. Solution's Architect Handbook, 2nd, Saurabh Shrivastava and Neelanjali Srivastav, Packt Publishing © 2022, ISBN: 978-1801816618

III. **Course Objectives**
Upon completion of this course, the student will be able to:

1. Understand the use cases of different cloud services for application lifecycle management
2. Build basic cloud-native applications using various cloud services
3. Implement a continuous integration/continuous deployment cycle approach to the software development lifecycle

IV. **Methods of Presentation:**
Lecture and Discussion, Observation and Demonstration, Projects, Discussion, Group Work, Distance Education

V. **Course Content**

% of Course	Topic
25.000%	Develop secure applications on AWS utilizing S3, RDS/Aurora, DynamoDB, Containers, SQS and SNS, Lamda, Step and API Gateway
25.000%	Develop and deploy cloud-based applications that utilize a stateful as well as a serverless application strategy

25.000%	Apply the services for application lifecycle management and utilize containerization in the development process
25.000%	Implement a Continuous Integration/Continuous Deployment cycle for writing native cloud applications
100.000%	Total

VI. **Methods of Evaluation**

% of Course	Topic
5%	Class Participation
20%	Exams/Tests
20%	Final exam
20%	Group Projects
20%	Homework
15%	Quizzes
100%	Total

VII. **Sample Assignments:**

Assignment 1 - CI/CD: Build an AWS CodePipeline pipeline and add a stage that requires manual approval before deploying the source code to production. Utilize AWS CodePipeline to implement a manual approval process to then deploy a web application. Build in a stage with a manual approval action right after the code repository and before the deployment stage. Implement with AWS CodePipeline to deploy AWS infrastructure through AWS CloudFormation. Add an action to our AWS CodePipeline that requires a manual approval intended to have any code commits reviewed prior to being deployed.

Assignment 2 - Serverless Applications: Create a fully working serverless reminder application using S3, Lambda, API Gateway, Step Functions, Simple Email Service, and Simple Notification Service. Architecting and implementing serverless solutions within AWS is a fundamental skillset need by cloud engineers.

VIII. **Student Learning Outcomes:**

1. Upon completion of this course, students will develop cloud services utilizing the techniques of application lifecycle management.
2. Upon completion of this course, students will build basic cloud-native applications and implement a continuous integration/continuous deployment cycle.

CS 320 Distance Education Application

- ☑ Fully Online
- ☑ Online/Classroom Hybrid (not a delivery option when campus is closed)

1a. Instructor - Student Interaction:

Students get feedback on their assignments, which are assigned every other week, including how to improve and follow best practices. In the quizzes, which are assigned every other week, students get feedback on their errors and get suggestions on how to better study. In the midterm and the final exam, students get feedback on their errors and how to improve. In the weekly threaded discussions, students must post answers to given questions/prompts and they must provide unique answers. They get feedback on their answers, how complete they are, and what they can improve on. For group projects, they get feedback from peers and instructor.

1b. Student - Student Interaction:

Every week, students must post responses on to a threaded discussion board based on a stated prompt. They must comment on each other. Students are placed in groups to enable them to contribute as well as read all posted messages.

1c. Student - Content Interaction:

Each week, students get a lecture in the form of video and PDF files. They may also get additional videos to explain certain concepts. Additionally, there may be supporting files and documents added to each week's content.

1d. Distance Ed Interactions:

Online class activities that promote class interaction and engagement	Brief Description	% of Online Course Hours
Online Lecture	PowerPoint slides with animation and annotations to explain the topics covered. Videos will be presented for special topics	20.00%
Discussion Boards	Students post weekly answers to questions. Instructor will provide feedback and a grade based on posting.	10.00%
Exams	Midterm and Final Exam	20.00%
Project Presentation	Students complete a final project utilizing cloud services. The instructor will be providing individual feedback for each project.	25.00%
Written assignments	Students submit written assignments and get individual feedback as well as sample solutions and general comments from the whole class.	25.00%

2. Organization of Content:

Using an online course management system, each week there will be a module instructions page which will lead students to other documents, and files in addition to the assigned work of a discussion message and an assignment/project or a quiz.

3. Assessments:

% of grade	Activity	Assessment Method
10.00%	Threaded Discussions	The Discussion board will facilitate questions and answers. Students may ask questions as well as answer them. Each week questions are posted in the Discussion board and each student is required to post a unique answer. Such answers are graded.
15.00%	Midterm	Feedback on where the student can improve and what topics to study more in addition to answer keys are provided.
25.00%	Final Exam	Feedback on where the student can improve.
20.00%	Final Project	Students will get feedback on an organized final project.
20.00%	Homework Assignments	Students will be given instructional material and exercises related to the topic that is being covered. A sample solution with overall comments will be provided to all students.
10.00%	Quizzes	Students will be taking quizzes. These quizzes will help students to keep up with the class material. Students will receive answer keys for each quiz and they will be allowed to post questions on the discussion board if there is a need for clarification.

4. Instructor's Technical Qualifications:

Instructors must be well versed in the use of computers, the web, and course management systems (CMS) to interact with students through the CMS messaging boards, email, and online video and chat meetings. As per ACCJC requirements, upper-division classes must be taught by faculty who hold at least a master’s degree in Computer Science.

5. Student Support Services: (e.g. links to counseling, financial aid, bookstore, library, etc.):

Through the syllabus, faculty will place links to library, bookstore, financial aid, disabled students center and counseling resources for students to access as needed.

6. Accessibility Requirements:

The course management system, must be Section 508 complaint as well as any videos, images, tables must be properly captioned. All PDF's and other added files and documents must be Section 508 compliant.

7. Representative Online Lesson or Activity:

Respond to the threaded discussion prompt to outline how you would architect a serverless application for the scenario presented. Critique and evaluate the solutions suggested by your classmates for efficiency and optimization purposes.

New Course: COMPUTER SCIENCE 325, Ethics for IT Professionals

Units:	3.00
Total Instructional Hours (usually 18 per unit):	54.00
Hours per week (full semester equivalent) in Lecture:	3.00
In-Class Lab:	0.00
Arranged:	0.00
Outside-of-Class Hours:	108.00
Date Submitted:	May 2023
Transferability:	Transfers to CSU
Degree Applicability:	Credit - Degree Applicable
Prerequisite(s):	Admission to the Bachelor degree program in Cloud Computing; ENGL 300
Proposed Start:	Fall 2024
TOP/SAM Code:	070710 - Computer Programming / B - Advanced Occupational
Grading:	Letter Grade or P/NP
Repeatability:	No
Library:	List of suggested materials has been given to Librarian
Minimum Qualification:	Computer Science
Program Impact:	Cloud Computing Bachelor's degree (forthcoming)

Rationale
This new course will be part of the Bachelors degree in Cloud computing as an upper division course.

I. **Catalog Description**
Ethics in Information Technology is intended to educate IT professionals on the tremendous impact ethical issues play managing data in the modern business world. The topics covered in this course are relevant to anyone preparing to enter the field of IT. The course will give students the foundation they need to make appropriate decisions when faced with difficult situations and make a positive impact in the field of information technology.

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 7 years)

1. Business Ethics - OER, 1, Steven Byars, Kurt Stnaberry, OpenStax, OER © 2022, ISBN: 13: 978-1-947172-56-2
2. Computer Ethics and Professional Responsibility, 1, Simon Rogerson, Terrell Ward Bynum, Wiley-Blackwell © 2003, ISBN: 978-1855548459
3. Ethics in Information Technology, 1, George Reynolds, Thomson Course Technology © 2007, ISBN: 978-1-4188-3631-3

III. **Course Objectives**
Upon completion of this course, the student will be able to:

1. Demonstrate knowledge of current models of information technology ethics.
2. Apply ethical theories to interpret personal and group behavior when using a variety of information technology tools.
3. Criticize the ethical choices made by self and others when serving various roles that expose social and multicultural differences.
4. Construct written arguments in a variety of formats on the evolving nature of ethical norms relating to new technologies.

IV. **Methods of Presentation:**
Distance Education, Lecture and Discussion, Observation and Demonstration, Discussion, Critique, Projects

V. **Course Content**

% of Course	Topic
10.000%	Regulation vs Freedom of thought

20.000%	Utilitarian ethics and AI
20.000%	Bias and Fairness
20.000%	Responsible Technology and AI
10.000%	Cyberspace, crime and the pillars of satefy
10.000%	Credibility and Trust
10.000%	Computer/Information Ethics and Transparency
100.000%	Total

VI. **Methods of Evaluation**

% of Course	Topic
15%	Class Participation: Discussions in the form of student to faculty and vice versa as well as student to student.
25%	Homework: Assignments to demonstrate the students' understand of concepts as well as the application of their own judgements.
25%	Exams/Tests: Two midterms
25%	Final exam
10%	Group Projects
100%	Total

VII. **Sample Assignments:**
Online vs Life: Ethical Norms: Write an essay that addresses what the differences are between online vs real life situations that involve the use of our data. You must list at least 5 situations. Explain how the ethical questions of privacy and security are different or the same and should they be different or be the same.
Wiki Collaborations: Ethical or No: 1. Assume the roles of creator, editor, person, critic and trust monitor. How are those roles different? 2. What is your opinion on collaborative editing in sites like Wikis? 3. Should we use more wiki sites to educate the public, spread information and expose dirty politics?

VIII. **Student Learning Outcomes:**
1. Upon completion of this course, students will demonstrate knowledge of current models of information and computer ethics.
2. Upon completion of this course, students will apply ethical practics to the use of data across a variety of information technology tools.
3. Upon completion of this course, students will differentiate the ethical issues and pitfalls in the professional practice of developing technologies, including AI (e.g. fairness, transparency, accountability), and learn about existing efforts to mitigate these issues.

CS 325 Distance Education Application

- ☑ Fully Online
- ☑ Online/Classroom Hybrid (not a delivery option when campus is closed)

1a. Instructor - Student Interaction:
Students get feedback on their weekly assigned work. Feedback includes criticism of their work and suggestions on how to better study. In the two midterm tests and the final exam, students get feedback on their errors and how to improve. In the weekly threaded discussions, students must post answers to given questions/prompts and they must provide unique answers. They get feedback on their answers, how complete they are and what they can improve on. For group projects students get critique from peers and their instructor.

1b. Student - Student Interaction:
Every week, students must post messages as a response to a problem specification. They must comment on each other's work. Students are placed in groups to enable them to contribute as well as read all posted messages.

1c. Student - Content Interaction:

Each week, students get a lecture in the form of video and PDF files. They may also get additional videos to explain certain concepts. Additionally, there may be supporting files and documents added to each week's content.

1d. Distance Ed Interactions:

Online class activities that promote class interaction and engagement	Brief Description	% of Online Course Hours
Discussion Boards	Discussion Boards Weekly Discussion board facilitate question/answering as well as providing feedback or commenting on postings. Each week students must address a main discussion topic.	20.00%
Online Lecture	Lectures in the format of PDF slides as well as videos from the web and instructor-recorded.	20.00%
Videos	Videos will cover recent news topics to add more real-life experiences to the students knowledge.	10.00%
Exams	Midterm and Final Exam (2 Exams)	25.00%
Written Assignments		25.00%

2. Organization of Content:

Using an online course management system, each week there will be a main home page which will lead students to other documents, and files in addition to the assigned work of a discussion message and a programming assignment/project or a quiz.

3. Assessments:

% of grade	Activity	Assessment Method
25.00%	Midterms	Feedback on where the student can improve and what topics to study more in addition to answer keys are provided.
15.00%	Discussions	The Discussion board will facilitate questions and answers. Students may ask questions as well as answer them. Each week questions are posted in the Discussion board and each student is required to post a unique answer. Such answers are graded.
25.00%	Homework Assignments	Assignments are graded with added comments on what the student did well and what needs improvement.
25.00%	Final Exam	Final exam will evaluate all the topics covered in class and includes essay type questions.
10.00%	Group Project	This item will engage students to work together and exchange ideas as well as learn how to divide roles. They will get feedback on their presetation of their work.

4. Instructor's Technical Qualifications:

Instructors must be well versed in the use of computers, the web, and course management systems (CMS) to interact with students through the CMS messaging boards, email, and online video and chat meetings.

5. Student Support Services: (e.g. links to counseling, financial aid, bookstore, library, etc.):

Through the syllabus, faculty can place links to library, bookstore, financial aid, disabled students center and counseling resources.

6. Accessibility Requirements:

The course management system must be Section 508 complaint as well as any videos, images, and tables must be properly captioned. All PDF's and other added files and documents must be Section 508 compliant.

7. Representative Online Lesson or Activity:

In the Discussion board, students will be presented with a topic to discuss and some students will be assigned to argue for the issue while others will be assigned to argue against. Mid-week the roles will be reversed. Grades along with comments will be assigned based on the quality and creativity of such replies.

Prerequisite Checklist and Worksheet: CS 325
Prerequisite: English 300 – Advanced Writing

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

Criterion	Met	Not 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.	**x**	
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.	**x**	
5. The body of knowledge and/or skills which are necessary for success before and/or concurrent with enrollment have been specified in writing.	**x**	
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.	**x**	
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.	**x**	
8. The body of knowledge and/or skills taught in the prerequisite are not an instructional unit of the course requiring the prerequisite.	**x**	
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:

X Type 2: Sequential within and across disciplines (e.g., Physics 7, 8, 9, …)
Complete the Prerequisite Worksheet

ENTRANCE SKILLS FOR **Computer Science 325 – Ethics for IT Professionals**
(What the student needs to be able to do or understand BEFORE entering the course in order to be successful)

A)	Apply discipline-specific historical, critical, and theoretical knowledge to create written work in a variety of genres and formats.
B)	Determine and evaluate appropriate genre/media for presentations of writing and research.
C)	Critically analyze communications according to the rhetorical expectations and vocabulary of the discipline

EXIT SKILLS (objectives) FOR **English 300 – Advanced Writing**
(What the student has the demonstrated ability to do or understand AFTER successful completion of this course)

1.	Apply discipline-specific historical, critical, and theoretical knowledge to create written work in a variety of genres and formats.
2.	Determine and evaluate appropriate genre/media for presentations of writing and research.
3.	Critically analyze communications according to the rhetorical expectations and vocabulary of the discipline

		ENTRANCE SKILLS FOR CS 325							
EXIT SKILLS FOR ENGL 300		A	B	C	D	E	F	G	H
	1	x							
	2		x						
	3			x					
	4								
	5								
	6								
	7								
	8								

New Course: COMPUTER SCIENCE 330, Cloud Operations Technologies and Tools

Units:	3.00
Total Instructional Hours (usually 18 per unit):	54.00
Hours per week (full semester equivalent) in Lecture:	3.00
In-Class Lab:	0.00
Arranged:	0.00
Outside-of-Class Hours:	108.00
Date Submitted:	May 2023
Transferability:	Transfers to CSU
Degree Applicability:	Credit - Degree Applicable
Prerequisite(s):	Admission to the Bachelor degree program in Cloud Computing; CS 320
Proposed Start:	Fall 2024
TOP/SAM Code:	070710 - Computer Programming / B - Advanced Occupational
Grading:	Letter Grade or P/NP
Repeatability:	No
Library:	List of suggested materials has been given to Librarian
Minimum Qualification:	Computer Science
Program Impact:	Cloud Computing Bachelor's degree (forthcoming)

Rationale
This is a new course for the Cloud Computing Bachelor of Science Degree

I. **Catalog Description**
This course provides an understanding of the principles, practices, and technologies that enable organizations to achieve more reliable software and service development and deployment. Students will explore the collaboration between the development team and operations to automate testing and deployment processes while collecting continuous feedback and providing improvements. The course focuses on the essential tools and technologies used for configuration management to automate cloud infrastructure.

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 7 years)
1. Design Patterns for Cloud Native Applications, Kasun Indrasiri and Sriskandarajah Suhothayan, O'Reilly © 2022, ISBN: 978-1492090717
2. The DevOps Handbook: How to Create World-Class Agility, Reliability, & Security in Technology Organizations , 2nd, Gene Kim, Jez Humble , IT Revolution © 2021, ISBN: 978-1950508402
3. Cloud Native DevOps with Kubernetes: Building, Deploying, and Scaling Modern Applications in the Cloud, Justin Domingus, John Arundel, O'Reilly Media © 2022, ISBN: 978-1098116828
4. Cloud Computing: Concepts, Technology And Architecture, 2, Thomas Erl, Ricardo Puttini and Zaigham Mahmood, Pearson © 2023, ISBN: 978-0138052256

III. **Course Objectives**
Upon completion of this course, the student will be able to:
1. Employ the tools and technologies used for configuration management and automation in cloud infrastructure.
2. Apply the fundamental principles underlying cloud systems automation.
3. Utilize the principles of continuous integration and delivery to real-world scenarios.

IV. **Methods of Presentation:**
Lecture and Discussion, Observation and Demonstration, Discussion, Projects, Group Work, Distance Education

V. **Course Content**

% of Course	Topic
20.000%	Automate infrastructure configuration and management using industry standard.
20.000%	Apply acquired knowledge and skills to design, develop, and maintain systems supporting continuous delivery and deployment.

20.000%	Learn the capabilities of cloud computing platforms for efficient application deployment and scalability.
20.000%	Implement monitoring and logging practices to gain insights into performance and troubleshoot issues.
20.000%	Understand the core principles and practices of cloud operations to enable efficient development and deployment.
100.000%	Total

VI. **Methods of Evaluation**

% of Course	Topic
5%	Class Participation
20%	Exams/Tests
20%	Final exam
20%	Group Projects
20%	Homework
15%	Quizzes
100%	Total

VII. **Sample Assignments:**

Assignment 1: Containerization and Orchestration: Objective: Containerize a microservices-based application and deploy it on a container orchestration platform. Description: For this assignment, you will design a microservices architecture for a sample application. Your task is to containerize each microservice using Docker and then deploy the containerized microservices on a container orchestration platform such as Kubernetes or Docker Swarm. Additionally, you will configure health checks and implement monitoring and logging solutions to ensure the reliability and performance of the microservices.

Assignment 2: DevOps with AWS and Terraform: Objective: Automate the provisioning and management of AWS cloud infrastructure using Terraform as an Infrastructure as Code (IaC) tool. Description: Automate the provisioning and management of AWS cloud infrastructure using Terraform, an Infrastructure as Code (IaC) tool. Define the infrastructure requirements for a scalable web application, including compute resources, networking, and storage. Write infrastructure code using Terraform to provision and configure the necessary AWS resources based on the defined requirements. Employ Terraform best practices such as modularity and parameterization. Utilize Git for version control and demonstrate collaboration and change management through branching and merging. Showcase the benefits of IaC by provisioning, modifying, and tearing down the infrastructure using Terraform commands. Emphasize the repeatability, consistency, and scalability achieved through the implementation of DevOps practices with AWS and Terraform.

VIII. **Student Learning Outcomes:**

1. Upon completion of this course, students will utilize the tools and technologies used for configuration management and automation in cloud infrastructure.
2. Upon completion of this course, students will apply the fundamental principles that emphasize automation, continuous integration, and continuous delivery.

CS 330 Distance Education Application

- ☑ Fully Online
- ☑ Online/Classroom Hybrid (not a delivery option when campus is closed)

1a. Instructor - Student Interaction:

Students get feedback on their assignments, which are assigned every other week, including how to improve and follow best practices. In the quizzes, which are assigned every other week, students get feedback on their errors and get suggestions on how to better study. In the midterm and the final exam, students get feedback on their errors and how to improve. In the weekly threaded discussions, students must post answers to given questions/prompts and they must provide unique answers. They get feedback on their answers, how complete they are, and what they can improve on. Students get feedback on their group projects from their peers and faculty.

1b. Student - Student Interaction:
Every week, students must post responses on to a threaded discussion board based on a stated prompt. They must comment on each other. Students are placed in groups to enable them to contribute as well as read all posted messages.

1c. Student - Content Interaction:
Each week, students get a lecture in the form of video and PDF files. They may also get additional videos to explain certain concepts. Additionally, there may be supporting files and documents added to each week's content.

1d. Distance Ed Interactions:

Online class activities that promote class interaction and engagement	Brief Description	% of Online Course Hours
Discussion Boards	Students post weekly answers to questions. Instructor will provide feedback and a grade based on posting.	10.00%
Online Lecture	PowerPoint slides with animation and annotations to explain the topics covered. Videos will be presented for special topics.	20.00%
Exams	Midterm and Final Exam (2 Exams)	20.00%
Project Presentation	Students complete a final project utilizing cloud services. The instructor will be providing individual feedback for each project.	25.00%
Written assignments	Students submit written assignments and get individual feedback as well as sample solutions and general comments from the whole class.	25.00%

2. Organization of Content:
Using an online course management system, each week there will be a module instructions page which will lead students to other documents, and files in addition to the assigned work of a discussion message and an assignment/project or a quiz.

3. Assessments:

% of grade	Activity	Assessment Method
10.00%	Threaded Discussions	The Discussion board will facilitate questions and answers. Students may ask questions as well as answer them. Each week questions are posted in the Discussion board and each student is required to post a unique answer. Such answers are graded.
10.00%	Midterm	Feedback on where the student can improve and what topics to study more in addition to answer keys are provided.
15.00%	Final Exam	Feedback on where the student can improve.
15.00%	Final Project	Students will get feedback on an organized final project.
30.00%	Homework Assignments	Students will be given instructional material and exercises related to the topic that is being covered. A sample solution with overall comments will be provided to all students.
20.00%	Quizzes	Students will be taking quizzes. These quizzes will help students to keep up with the class material. Students will receive answer keys for each quiz and they will be allowed to post questions on the discussion board if there is a need for clarification.

4. Instructor's Technical Qualifications:
Instructors must be well versed in the use of computers, the web, and course management systems (CMS) to interact with students through the CMS messaging boards, email, and online video and chat meetings. As per ACCJC requirements, upper-division classes must be taught by faculty who hold at least a master’s degree in Computer Science.

5. Student Support Services: (e.g. links to counseling, financial aid, bookstore, library, etc.):
Through the syllabus, faculty will place links to library, bookstore, financial aid, disabled students center and counseling resources for students to access as needed.

6. Accessibility Requirements:
The course management system, must be Section 508 complaint as well as any videos, images, tables must be properly captioned. All PDF's and other added files and documents must be Section 508 compliant.

7. Representative Online Lesson or Activity:

Automate the provisioning and management of AWS cloud infrastructure using Terraform as an Infrastructure as Code (IaC) tool. Automate the provisioning and management of AWS cloud infrastructure using Terraform. Define the infrastructure requirements for a scalable web application, including compute resources, networking, and storage. Employ best practices utilizing Git for version control and demonstrate collaboration and change management through branching and merging.

Prerequisite Checklist and Worksheet: CS 330
Prerequisite: Computer Science 320 – Cloud Developer

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

Criterion	Met	Not 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.	**x**	
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.	**x**	
5. The body of knowledge and/or skills which are necessary for success before and/or concurrent with enrollment have been specified in writing.	**x**	
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.	**x**	
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.	**x**	
8. The body of knowledge and/or skills taught in the prerequisite are not an instructional unit of the course requiring the prerequisite.	**x**	
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:

X Type 2: Sequential within and across disciplines (e.g., Physics 7, 8, 9, …)
Complete the Prerequisite Worksheet

ENTRANCE SKILLS FOR **Computer Science 330 – Cloud Operations Technologies and Tools**
(What the student needs to be able to do or understand BEFORE entering the course in order to be successful)

A)	Understand the use cases of different cloud services for application lifecycle management
B)	Build basic cloud-native applications using various cloud services
C)	Implement a continuous integration/continuous deployment cycle approach to the software development lifecycle

EXIT SKILLS (objectives) FOR **Computer Science 320 – Cloud Developer**
(What the student has the demonstrated ability to do or understand AFTER successful completion of this course)

1.	Understand the use cases of different cloud services for application lifecycle management
2.	Build basic cloud-native applications using various cloud services
3.	Implement a continuous integration/continuous deployment cycle approach to the software development lifecycle

		ENTRANCE SKILLS FOR CS 330							
		A	B	C	D	E	F	G	H
EXIT SKILLS FOR CS 320	1	x							
	2		x						
	3			x					
	4								
	5								
	6								

New Course: COMPUTER SCIENCE 340, System Virtualization Fundamentals

Units:	3.00
Total Instructional Hours (usually 18 per unit):	54.00
Hours per week (full semester equivalent) in Lecture:	3.00
In-Class Lab:	0.00
Arranged:	0.00
Outside-of-Class Hours:	108.00
Transferability:	Transfers to CSU
Degree Applicability:	Credit - Degree Applicable
Prerequisite(s):	Admission to the Bachelor degree program in Cloud Computing; CS 310
Proposed Start:	Fall 2024
TOP/SAM Code:	070710 - Computer Programming / B - Advanced Occupational
Grading:	Letter Grade or P/NP
Repeatability:	No
Library:	List of suggested materials has been given to Librarian
Minimum Qualification:	Computer Science
Program Impact:	Cloud Computing Bachelor's degree (forthcoming)

Rationale
This is a new course for the Cloud Computing Bachelor of Science Degree

I. **Catalog Description**
This course provides a comprehensive understanding of modern virtualization technologies around operating systems, networking, and storage. Students will receive hands-on experience installing, configuring, and managing various virtualization hypervisors. They will explore the applications of virtualization technologies in cloud infrastructures. The course highlights the virtualization of operating systems, networking components, and storage resources, with a focus on creating scalable and flexible IT environments. Students will backup, restore, and migrate virtual servers to a cloud platform.

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 7 years)
1. Virtualization Essentials, 3rd, Matthew Portnoy, Sybex © 2023, ISBN: 978-1394181568
2. Building Cloud and Virtualization Infrastructure: A Hands-on Approach to Virtualization and Implementation of a Private Cloud Using Real-time Use-cases, 1st, Mrs.Lavanya S, Dr. Venkatachalam K, BPB Publications © 2021, ISBN: 978-9390684472
3. VMware Certified Professional Data Center Virtualization on vSphere 6.7 Study Guide: Exam 2V0-21.19 , Jon Hall, Joshua Andrews, Sybex © 2020, ISBN: 978-1119214694
4. Bill Wilder. Cloud Architecture Patterns, O'Reilly

III. **Course Objectives**
Upon completion of this course, the student will be able to:
1. Develop a comprehensive understanding of virtualization technologies and their significance in cloud computing.
2. Explore the virtualization of operating systems, networking components, and storage resources in cloud environments.
3. Gain hands-on experience in installing, configuring, and managing various virtualization hypervisors.

IV. **Methods of Presentation:**
Lecture and Discussion, Observation and Demonstration, Discussion, Projects, Group Work, Distance Education

V. **Course Content**

% of Course	Topic
20.000%	Install, configure, and manage various virtualization technologies to deploy IT workloads.
20.000%	Setup hypervisors to ensure secure and isolated environments for virtual instances.

20.000%	Create and configure virtual networks to achieve network segmentation, enforce security controls, and establish connectivity.
20.000%	Deploy storage virtualization technologies such as virtual disk formats, storage clusters, storage pools, and virtual storage appliances.
20.000%	Analyze and evaluate custom built virtualization systems to understand their impact on performance, security, and efficiency in cloud environments.
100.000%	Total

VI. **Methods of Evaluation**

% of Course	Topic
5%	Class Participation
20%	Exams/Tests
20%	Final exam
20%	Group Projects
20%	Homework
15%	Quizzes
100%	Total

VII. **Sample Assignments:**

Assignment 1: Hypervisor Installation and Configuration: In this assignment, select a virtualization hypervisor based on given requirements. Then proceed to install and configure the chosen hypervisor on a designated host machine or virtual environment. Once the hypervisor is set up, create a set of virtual machines with different configurations, such as varying operating systems and networking setups. Also optimize the settings of the virtual machines to ensure efficient performance. Throughout the process, you are required to document the installation and configuration steps, including any challenges encountered and the solutions implemented.

Assignment 2: Virtualization Performance Optimization: In this assignment, select a virtualized environment, such as a set of virtual machines running on a specific hypervisor. Conduct performance monitoring and analysis of the virtualized environment using appropriate tools. The goal is to identify any potential performance bottlenecks, whether they relate to CPU, memory, network, or storage limitations. Based on the analysis findings, implement optimization techniques to improve the performance of the virtualized environment. This may involve adjusting resource allocations, optimizing networking configurations, or utilizing advanced features provided by the hypervisor. To measure the effectiveness of the optimizations, perform performance tests and document the improvements achieved.

VIII. **Student Learning Outcomes:**

1. Upon completing the course, students will employ modern virtualization technologies to develop cloud infrastructures.
2. Upon completion of this course, students will optimize virtualization performance.
3. Upon completion of this course, students will install, configure, and manage virtualization hypervisors.

CS 340 Distance Education Application

- ☑ Fully Online
- ☑ Online/Classroom Hybrid (not a delivery option when campus is closed)

1a. Instructor - Student Interaction:

Students get feedback on their assignments, which are assigned every other week, including how to improve and follow best practices. In the quizzes, which are assigned every other week, students get feedback on their errors and get suggestions on how to better study. In the midterm and the final exam, students get feedback on their errors and how to improve. In the weekly threaded discussions, students must post answers to given questions/prompts and they must provide unique answers. They get feedback on their answers, how complete they are, and what they can improve on. Students get feedback on their group projects from their peers and instructor.

1b. Student - Student Interaction:

Every week, students must post responses on to a threaded discussion board based on a stated prompt. They must comment on each other. Students are placed in groups to enable them to contribute as well as read all posted messages.

1c. Student - Content Interaction:
Each week, students get a lecture in the form of video and PDF files. They may also get additional videos to explain certain concepts. Additionally, there may be supporting files and documents added to each week's content.

1d. Distance Ed Interactions:

Online class activities that promote class interaction and engagement	Brief Description	% of Online Course Hours
Discussion Boards	Students post weekly answers to questions. Instructor will provide feedback and a grade based on posting.	10.00%
Online Lecture	PowerPoint slides with animation and annotations to explain the topics covered. Videos will be presented for special topics.	20.00%
Exams	Midterm and Final Exam (2 Exams)	20.00%
Project Presentation	Students complete a final project utilizing cloud services. The instructor will be providing individual feedback for each project.	25.00%
Written assignments	Students submit written assignments and get individual feedback as well as sample solutions and general comments from the whole class.	25.00%

2. Organization of Content:
Using an online course management system, each week there will be a module instructions page which will lead students to other documents, and files in addition to the assigned work of a discussion message and an assignment/project or a quiz.

3. Assessments:

% of grade	Activity	Assessment Method
10.00%	Threaded Discussions	The Discussion board will facilitate questions and answers. Students may ask questions as wel as answer them. Each week questions are posted in the Discussion board and each student is required to post a unique answer. Such answers are graded.
10.00%	Midterm	Feedback on where the student can improve and what topics to study more in addition to answer keys are provided.
15.00%	Final Exam	Feedback on where the student can improve.
15.00%	Final Project	Students will get feedback on an organized final project.
30.00%	Homework Assignments	Students will be given instructional material and exercises related to the topic that is being covered. A sample solution with overall comments will be provided to all students.
20.00%	Quizzes	Students will be taking quizzes. These quizzes will help students to keep up with the class material. Students will receive answer keys for each quiz and they will be allowed to post questions on the discussion board if there is a need for clarification.

4. Instructor's Technical Qualifications:
Instructors must be well versed in the use of computers, the web, and course management systems (CMS) to interact with students through the CMS messaging boards, email, and online video and chat meetings. As per ACCJC requirements, upper-division classes must be taught by faculty who hold at least a master’s degree in Computer Science.

5. Student Support Services: (e.g. links to counseling, financial aid, bookstore, library, etc.):
Through the syllabus, faculty will place links to library, bookstore, financial aid, disabled students center and counseling resources for students to access as needed.

6. Accessibility Requirements:
The course management system, must be Section 508 complaint as well as any videos, images, tables must be properly captioned. All PDF's and other added files and documents must be Section 508 compliant.

7. Representative Online Lesson or Activity:
In Canvas create a discussion thread that requires each student to write an R program snippet to create a data frame using two given vectors and display the duplicated elements and unique rows of the said data frame.

Prerequisite Checklist and Worksheet: CS 340

Prerequisite: Computer Science 310 – Cloud Systems Programming

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

Criterion	Met	Not 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.	**x**	
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.	**x**	
5. The body of knowledge and/or skills which are necessary for success before and/or concurrent with enrollment have been specified in writing.	**x**	
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.	**x**	
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.	**x**	
8. The body of knowledge and/or skills taught in the prerequisite are not an instructional unit of the course requiring the prerequisite.	**x**	
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:

X Type 2: Sequential within and across disciplines (e.g., Physics 7, 8, 9, …)
Complete the Prerequisite Worksheet

ENTRANCE SKILLS FOR **Computer Science 340 – System Virtualization**
(What the student needs to be able to do or understand BEFORE entering the course in order to be successful)

A)	Understand the basic concepts of system calls, error returns, the I/O operations and behaviors available via the system calls, and the use of available resources to uncover the details of how the system calls must be invoked and how they can be used.
B)	Develop small application programs using system calls for interprocess communications.
C)	Understand the basics of using graphs to analyze system communications interactions for synchronous and asynchronous communications.

EXIT SKILLS (objectives) FOR **Computer Science 310 – Cloud Systems Programming**
(What the student has the demonstrated ability to do or understand AFTER successful completion of this course)

1.	Understand the basic concepts of system calls, error returns, the I/O operations and behaviors available via the system calls, and the use of available resources to uncover the details of how the system calls must be invoked and how they can be used.
2.	Develop small application programs using system calls for interprocess communications.
3.	Understand the basics of using graphs to analyze system communications interactions for synchronous and asynchronous communications.

		ENTRANCE SKILLS FOR CS 340							
EXIT SKILLS FOR CS 310		A	B	C	D	E	F	G	H
	1	x							
	2		x						
	3			x					
	4								
	5								
	6								

New Course: COMPUTER SCIENCE 350, Collaboration Technologies and Tools

Units:	3.00
Total Instructional Hours (usually 18 per unit):	54.00
Hours per week (full semester equivalent) in Lecture:	3.00
In-Class Lab:	0.00
Arranged:	0.00
Outside-of-Class Hours:	108.00
Date Submitted:	May 2023
Transferability:	Transfers to CSU
Degree Applicability:	Credit - Degree Applicable
Prerequisite(s):	Admission to the Bachelor degree program in Cloud Computing
Proposed Start:	Fall 2024
TOP/SAM Code:	070710 - Computer Programming / B - Advanced Occupational
Grading:	Letter Grade or P/NP
Repeatability:	No
Library:	List of suggested materials has been given to Librarian
Minimum Qualification:	Computer Science
Program Impact:	Cloud Computing Bachelor's degree (forthcoming)

Rationale
This is a new course for the Cloud Computing Bachelor of Science Degree

I. **Catalog Description**
This course is aimed to provide students with the necessary abilities to thrive as modern information workers and valued team members. Students will obtain knowledge and practical expertise in a variety of collaborative tools through a combination of case studies, demonstrations, and hands-on activities. Collaboration, communication, connection, mobility, crowdsourcing, productivity, and messaging will all be covered in this course. Students will learn how to interact with process automation software, how to use messaging and collaboration tools effectively, how to use visual collaboration software, and how to draw insights from interactive data visualization tools. To improve problem-solving abilities and build effective communication skills, real-world scenarios, and interactive activities will be interwoven.

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 7 years)

1. Collaboration Tools for Project Managers, 1st, Elizabeth Harrin, Project Management Institute © 2020, ISBN: 978-1628251135
2. Visual Collaboration: A Powerful Toolkit for Improving Meetings, Projects, and Processes, 1st, Loa Baastrup and Ole Qvist-Sorensen , Wiley Publishers © 2020, ISBN: 978-1119611042
3. Mastering Microsoft Teams, 1st, Melissa Hubbard and Matthew J. Bailey, Apress Publishers © 2020, ISBN: 978-1484236697
4. Cloud Computing: Concepts, Technology And Architecture, 2, Thomas Erl, Ricardo Puttini and Zaigham Mahmood, Pearson © 2023, ISBN: 978-0138052256

III. **Course Objectives**
Upon completion of this course, the student will be able to:

1. Develop skills needed to effectively drive video telephony software platforms.
2. Learn how to effectively utilize messaging and collaboration sites.
3. Develop skills to effectively interact with visual collaboration software.
4. Develop skills to interact with process automation software.
5. Draw insights from interactive data visualization tools.

IV. **Methods of Presentation:**
Lecture and Discussion, Observation and Demonstration, Discussion, Projects, Group Work, Distance Education

V. **Course Content**

% of Course	Topic
25.000%	Students will apply various communication techniques and strategies to convey ideas clearly and concisely to a team.
25.000%	Demonstrate the ability to work collaboratively, communicate effectively, and leverage the selected collaboration tools.
25.000%	Develop effective teamwork and collaboration skills by actively participating in team-based projects, and engaging in collaborative exercises.
25.000%	Evaluate various collaboration tools for communication, connectivity, mobility, crowd sourcing, productivity, and messaging, based on their features and project requirements.
100.000%	Total

VI. **Methods of Evaluation**

% of Course	Topic
5%	Class Participation
20%	Exams/Tests
20%	Final exam
20%	Group Projects
20%	Homework
15%	Quizzes
100%	Total

VII. **Sample Assignments:**
Assignment1 - Web Scraping Automation: Utilize automation tools to create .csv files by scraping from common websites, such as Amazon product listings.
Assignment2 - Messaging: Using collaboration software, build a group collaboration site with public and private channel. Invite your project team members in and facilitate group communication.

VIII. **Student Learning Outcomes:**
1. Upon completion of this course, students will employ modern team collaboration tools.
2. Upon completion of this course, students will gain experience with modern tools for communication, connectivity, mobility, crowd sourcing, productivity and messaging.

CS 350 Distance Education Application

☑ Fully Online
☑ Online/Classroom Hybrid (not a delivery option when campus is closed)

1a. Instructor - Student Interaction:
Students get feedback on their assignments, which are assigned every other week, including how to improve and follow best practices. In the quizzes, which are assigned every other week, students get feedback on their errors and get suggestions on how to better study. In the midterm and the final exam, students get feedback on their errors and how to improve. In the weekly threaded discussions, students must post answers to given questions/prompts and they must provide unique answers. They get feedback on their answers, how complete they are, and what they can improve on. Students get feedback on their group projects from their peers and instructor.

1b. Student - Student Interaction:
Every week, students must post responses on to a threaded discussion board based on a stated prompt. They must comment on each other. Students are placed in groups to enable them to contribute as well as read all posted messages.

1c. Student - Content Interaction:

Each week, students get a lecture in the form of video and PDF files. They may also get additional videos to explain certain concepts. Additionally, there may be supporting files and documents added to each week's content.

1d. Distance Ed Interactions:

Online class activities that promote class interaction and engagement	Brief Description	% of Online Course Hours
Discussion Boards	Students post weekly answers to questions. Instructor will provide feedback and a grade based on posting.	10.00%
Online Lecture	PowerPoint slides with animation and annotations to explain the topics covered. Videos will be presented for special topics.	20.00%
Exams	Midterm and Final Exam (2 Exams)	20.00%
Project Presentation	Students complete a final project utilizing cloud services. The instructor will be providing individual feedback for each project.	25.00%
Written assignments	Students submit written assignments and get individual feedback as well as sample solutions and general comments from the whole class.	25.00%

2. Organization of Content:

Using an online course management system, each week there will be a module instructions page which will lead students to other documents, and files in addition to the assigned work of a discussion message and an assignment/project or a quiz.

3. Assessments:

% of grade	Activity	Assessment Method
10.00%	Threaded Discussions	The Discussion board will facilitate questions and answers. Students may ask questions as well as answer them. Each week questions are posted in the Discussion board and each student is required to post a unique answer. Such answers are graded.
10.00%	Midterm	Feedback on where the student can improve and what topics to study more in addition to answe keys are provided.
15.00%	Final Exam	Feedback on where the student can improve.
15.00%	Final Project	Students will get feedback on an organized final project.
30.00%	Homework	Students will be given instructional material and exercises related to the topic that is being covered. A sample solution with overall comments will be provided to all students.
20.00%	Quizzes	Students will be taking quizzes. These quizzes will help students to keep up with the class material. Students will receive answer keys for each quiz and they will be allowed to post questions on the discussion board if there is a need for clarification.

4. Instructor's Technical Qualifications:

Instructors must be well versed in the use of computers, the web, and course management systems (CMS) to interact with students through the CMS messaging boards, email, and online video and chat meetings. As per ACCJC requirements, upper-division classes must be taught by faculty who hold at least a master’s degree in Computer Science.

5. Student Support Services: (e.g. links to counseling, financial aid, bookstore, library, etc.):

Through the syllabus, faculty will place links to library, bookstore, financial aid, disabled students center and counseling resources for students to access as needed.

6. Accessibility Requirements:

The course management system, must be Section 508 complaint as well as any videos, images, tables must be properly captioned. All PDF's and other added files and documents must be Section 508 compliant.

7. Representative Online Lesson or Activity:

Respond to the discussion prompt and incorporate this discussion topic into your Slack site, inviting your group members to discuss it in public and private channels.

New Course: COMPUTER SCIENCE 405, Cloud Capstone I

Units:	3.00
Total Instructional Hours (usually 18 per unit):	54.00
Hours per week (full semester equivalent) in Lecture:	3.00
In-Class Lab:	0.00
Arranged:	0.00
Outside-of-Class Hours:	108.00
Date Submitted:	May 2023
Transferability:	Transfers to CSU
Degree Applicability:	Credit - Degree Applicable
Prerequisite(s):	Admission to the Bachelor degree program in Cloud Computing ; CS 330
Proposed Start:	Fall 2024
TOP/SAM Code:	070710 - Computer Programming / B - Advanced Occupational
Grading:	Letter Grade or P/NP
Repeatability:	No
Library:	List of suggested materials has been given to Librarian
Minimum Qualification:	Computer Science
Program Impact:	Cloud Computing Bachelor's degree (forthcoming)

Rationale
This is a new course for the Cloud Computing Bachelor of Science Degree.

I. **Catalog Description**
This project-oriented course is the first part of a two-semester sequence that allows students to apply their knowledge of software engineering to the design and implementation of a system to solve a real-world problem. Students investigate design alternatives and select an appropriate one, implement a solution and verify and validate the result, all as part of a team effort. As part of a team, students successfully develop a medium-sized, secure software application on time that meets all program requirements including design and formal test plan documentation.

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 7 years)
1. Building Event-Driven Microservices : Leveraging Organizational Data at Scale, 1st, Adam Bellemare, O'Reilly Publishing © 2020, ISBN: 978-1492057895
2. Design Patterns for Cloud Native Applications, 1st, Kasun Indrasiri and Sriskandarajah Suhothayan, O'Reilly Publishing © 2022, ISBN: 978-1492090717
3. Cloud Architecture Patterns, 1st, Bill Wilder, O'Reilly Publishing © 2021, ISBN: 978-1449319779

III. **Course Objectives**
Upon completion of this course, the student will be able to:
1. Working in teams, students implement an industry-provided design challenge. As assessed by: projects, midterm and final exam
2. Design and develop a secure and fault-tolerant programming solution utilizing principles of software assurance. As assessed by: projects, midterm and final exam
3. Create a formal test plan emphasizing comprehensive test cases for data and code coverage. As assessed by: projects, midterm and final exam

IV. **Methods of Presentation:**
Distance Education, Lecture and Discussion, Discussion, Critique, Projects, Group Work

V. **Course Content**

% of Course	Topic
25.000%	Development of a comprehensive cloud solution to a problem in a team setting with emphasis on working with a client.

25.000%	Participation in a design cycle including specification, design, implementation, testing, maintenance and documentation.
25.000%	Develop project deliverables and document and plan for major milestones
25.000%	Function effectively as a member or leader of a team engaged in activities appropriate to the program's discipline.
100.000%	Total

VI. **Methods of Evaluation**

% of Course	Topic
70%	Group Projects: Team Grade comprised of: Project Plan Presentation Documentation, Alpha Presentation, Beta Presentation, Project Video, Project Software Documentation and a Design Day expo
30%	Class Participation: Participation score comprised of Technical Contribution, Team Contribution, Team Evaluation, and All-Hands and Triage Meeting Attendance
100%	Total

VII. **Sample Assignments:**

Beta Release Milestone: Develop a minimum viable product for release to your prospective users or client. For a beta release, all (or almost all) of the main features to be implemented. Your app should be usable: no show-stopper bugs, no major crashes. It is OK if smaller features have not been implemented or bugs remain to be fixed. Cosmetic problems are OK and frankly expected. Provide this release to your prospective users or client, and ask them for feedback. Implement any new critical features they want, and fix all the bugs they find, before the RC1. Use GitHub Issues to track any feedback you receive from the users or client. For every feature request they make you will add a new enhancement Issue; for every bug they report add one bug issue. You can later decide if you will implement/fix these or not.

Testing Milestone: For this milestone you will implement and run both unit and behavioral tests. You will likely use third-party libraries and tools for creating and running your unit tests. You will also devise a method for automating some of this testing and making it part of your workflow. Research various testing tools, chose ones which fit your scenarios, learn to use them, and create and add to your repo one simple unit and one behavior test to demonstrate your progress. In unit testing you write tests which verify that your methods/functions do what you think they should do. In behavior testing, you write test code that pretends to be the user using your app. Your tests should make sure your app does what the user expects it to do, that is, what your specifications says it should. Behavior tests test the whole program.

VIII. **Student Learning Outcomes:**

1. Working in teams, students will implement an industry-provided design challenge.
2. Working in teams, students will evaluate, test and harden their implementation.

CS 405 Distance Education Application

- ☑ Fully Online
- ☑ Online/Classroom Hybrid (not a delivery option when campus is closed)

1a. Instructor - Student Interaction:

Students get feedback on their individual and group projects, including how to improve and follow best practices. Feedback is from peers and instructor.

1b. Student - Student Interaction:

Every week, students must post responses to a threaded discussion board based on a stated prompt. They must comment on each other. Students are placed in groups to enable them to contribute as well as read all posted messages.

1c. Student - Content Interaction:

Each week, students get a lecture in the form of video and PDF files. They may also get additional videos to explain certain concepts. Additionally, there may be supporting files and documents added to each week's content.

1d. Distance Ed Interactions:

Online class activities that promote class interaction and engagement	Brief Description	% of Online Course Hours
Discussion Boards	Students post weekly answers to questions. Instructor will provide feedback and a grade based on posting.	10.00%
Online Lecture	PowerPoint slides with animation and annotations to explain the topics covered. Videos will be presented for special topics	15.00%
Project Presentation	Students complete a final project utilizing cloud services. The instructor will be providing individual feedback for each project.	25.00%
Written assignments	Students submit written assignments that document their project as various milestones are completed and get individual feedback as well as sample solutions and general comments from the whole class.	25.00%
Study and/or Review Sessions	Students will review other project implementations and critique the work of other teams.	25.00%

2. Organization of Content:
Using an online course management system, each week there will be a module instructions page which will lead students to other documents, and files in addition to the assigned work of a discussion message and an assignment/project or a quiz.

3. Assessments:

% of grade	Activity	Assessment Method
30.00%	Threaded Discussion	The Discussion board will facilitate questions and answers. Students may ask questions as well as answer them. Each week questions are posted in the Discussion board and each student is required to post a unique answer. Such answers are graded.
25.00%	Final Project	Students will get feedback on an organized final project.
25.00%	Group Projects	Feedback on where the student can improve.
20.00%	Individual Projects	Students will be given instructional materials and prompts related to the topic that is being covered. Each students submits a project to demonstrate their understanding of those topics.

4. Instructor's Technical Qualifications:
Instructors must be well versed in the use of computers, the web, and course management systems (CMS) to interact with students through the CMS messaging boards, email, and online video and chat meetings. As per ACCJC requirements, upper-division classes must be taught by faculty who hold at least a master’s degree in Computer Science.

5. Student Support Services: (e.g. links to counseling, financial aid, bookstore, library, etc.):
Through the syllabus, faculty will place links to library, bookstore, financial aid, disabled students center and counseling resources for students to access as needed.

6. Accessibility Requirements:
The course management system, must be Section 508 complaint as well as any videos, images, tables must be properly captioned. All PDF's and other added files and documents must be Section 508 compliant.

7. Representative Online Lesson or Activity:
Using Teams, develop a project teams site, enable access for all your team members and organize project milestones into meaningful chunks of work for each team member.

Prerequisite Checklist and Worksheet: CS 405

Prerequisite: Computer Science 330 – Cloud Operations Technologies and Tools

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

Criterion	Met	Not 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.	**x**	
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.	**x**	
5. The body of knowledge and/or skills which are necessary for success before and/or concurrent with enrollment have been specified in writing.	**x**	
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.	**x**	
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.	**x**	
8. The body of knowledge and/or skills taught in the prerequisite are not an instructional unit of the course requiring the prerequisite.	**x**	
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:

X Type 2: Sequential within and across disciplines (e.g., Physics 7, 8, 9, …)
Complete the Prerequisite Worksheet

ENTRANCE SKILLS FOR **Computer Science 405 – Cloud Capstone I**
(What the student needs to be able to do or understand BEFORE entering the course in order to be successful)

A)	Understand the importance of infrastructure-as-code to help automate, monitor and manage cloud systems
B)	Build effective continuous integration/continuous deployment strategies using available cloud tools and services

EXIT SKILLS (objectives) FOR **Computer Science 330 – Cloud Operations Technologies and Tools**
(What the student has the demonstrated ability to do or understand AFTER successful completion of this course)

1.	Understand the importance of infrastructure-as-code to help automate, monitor and manage cloud systems
2.	Build effective continuous integration/continuous deployment strategies using available cloud tools and services

		ENTRANCE SKILLS FOR CS 405							
EXIT SKILLS FOR CS 330		A	B	C	D	E	F	G	H
	1	x							
	2		x						
	3								
	4								
	5								
	6								
	7								
	8								

New Course: COMPUTER SCIENCE 410, Cloud Capstone II

Units:	3.00
Total Instructional Hours (usually 18 per unit):	54.00
Hours per week (full semester equivalent) in Lecture:	3.00
In-Class Lab:	0.00
Arranged:	0.00
Outside-of-Class Hours:	108.00
Date Submitted:	May 2023
Transferability:	Transfers to CSU
Degree Applicability:	Credit - Degree Applicable
Prerequisite(s):	Admission to the Bachelor degree program in Cloud Computing; CS 405
Proposed Start:	Fall 2024
TOP/SAM Code:	070710 - Computer Programming / B - Advanced Occupational
Grading:	Letter Grade or P/NP
Repeatability:	No
Library:	List of suggested materials has been given to Librarian
Minimum Qualification:	Computer Science
Program Impact:	Cloud Computing Bachelor's degree (forthcoming)

Rationale
This is a new course for the Cloud Computing Bachelor of Science Degree.

I. **Catalog Description**
This project-oriented course is the second part of a two-semester sequence that allows students to apply their knowledge of software engineering to the design and implementation of a system to solve a real-world problem. Students investigate design alternatives and select an appropriate one, implement a solution and verify and validate the result, all as part of a team effort. As part of a team, students successfully develop a medium-sized, secure software application on time that meets all program requirements including design and formal test plan documentation.

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 7 years)
1. Building Event-Driven Microservices : Leveraging Organizational Data at Scale, 1st, Adam Bellemare, O'Reilly Publishing © 2020
2. Design Patterns for Cloud Native Applications, 1st, Kasun Indrasiri and Sriskandarajah Suhothayan, O'Reilly Publishing © 2022
3. Cloud Architecture Patterns, 1st, Bill Wilder, O'Reilly Publishing © 2021

III. **Course Objectives**
Upon completion of this course, the student will be able to:
1. Working in teams, students implement an industry-provided design challenge.
2. Design and develop a secure and fault-tolerant programming solution utilizing principles of software assurance.
3. Create a formal test plan emphasizing comprehensive test cases for data and code coverage.

IV. **Methods of Presentation:**
Distance Education, Lecture and Discussion, Discussion, Projects, Group Work

V. **Course Content**

% of Course	Topic
30.000%	Development of a comprehensive software solution to a problem in a team setting with emphasis on working with a client.
30.000%	Develop project deliverables and document and plan for major milestones

40.000%	Function effectively as a member or leader of a team engaged in activities appropriate to the program's discipline.
100.000%	Total

VI. **Methods of Evaluation**

% of Course	Topic
70%	Group Projects: Team Grade comprised of: Project Plan Presentation Documentation, Alpha Presentation, Beta Presentation, Project Video, Project Software Documentation and a Design Day expo
30%	Class Participation: Participation score comprised of Technical Contribution, Team Contribution, Team Evaluation, and All-Hands and Triage Meeting Attendance
100%	Total

VII. **Sample Assignments:**

Testing Milestone: For this milestone you will implement and run both unit and behavioral tests. You will likely use third-party libraries and tools for creating and running your unit tests. You will also devise a method for automating some of this testing and making it part of your workflow. Research various testing tools, chose ones which fit your scenarios, learn to use them, and create and add to your repo one simple unit and one behavior test to demonstrate your progress. In unit testing you write tests which verify that your methods/functions do what you think they should do. In behavior testing, you write test code that pretends to be the user using your app. Your tests should make sure your app does what the user expects it to do, that is, what your specifications says it should. Behavior tests test the whole program.

Project Video Demo: Every team member must take part in the final presentation/demo video. You can take turns, or alternate, as you see fit. The complete video presentation must be no longer than 15 minutes, shoot for somewhere between 10 and 15 minutes. Be sure to introduce your team, explain the problem/use-case your app is meant to solve. Describe how users do things now, without your app. Specify the goals of your app and which user pain points are you addressing. Mention the technologies you used in building and deploying your app. Give some details into how they fit together. Demo to show the major features. Make sure you explain what you are doing as you tap on buttons. Make sure we can see what you are doing, and the results

VIII. **Student Learning Outcomes:**

1. Upon completion of this course, students will a create amd implement a design that reflects an industry standard that mimics a use case.
2. Upon completion of this course, working in teams students will evaluate, test and harden their implementation.

CS 410 Distance Education Application

- ☑ Fully Online
- ☑ Online/Classroom Hybrid (not a delivery option when campus is closed)

1a. Instructor - Student Interaction:

Students get feedback on their individual and group projects including how to improve and follow best practices. Feedback is provided by their peers and instructor.

1b. Student - Student Interaction:

Every week, students must post responses on to a threaded discussion board based on a stated prompt. They must comment on each other. Students are placed in groups to enable them to contribute as well as read all posted messages.

1c. Student - Content Interaction:

Each week, students get a lecture in the form of video and PDF files. They may also get additional videos to explain certain concepts. Additionally, there may be supporting files and documents added to each week's content.

1d. Distance Ed Interactions:

Online class activities that promote class interaction and engagement	Brief Description	% of Online Course Hours
Discussion Boards	Students post weekly answers to questions. Instructor will provide feedback and a grade based on posting.	10.00%
Online Lecture	PowerPoint slides with animation and annotations to explain the topics covered. Videos will be presented for special topics	20.00%
Project Presentation	Students complete a final project utilizing cloud services. The instructor will be providing individual feedback for each project.	25.00%
Written assignments	Students submit projects that document the various milestones of their work. They get individual feedback as well as samples and general comments from the whole class.	25.00%
Study and/or Review Sessions	Students will review other project implementations and critique the work of other teams.	20.00%

2. Organization of Content:
Using an online course management system, each week there will be a module instructions page which will lead students to other documents, and files in addition to the assigned work of a discussion message and an assignment/project or a quiz.

3. Assessments:

% of grade	Activity	Assessment Method
25.00%	Final Project	Students will get feedback on an organized final project.
30.00%	Threaded Discussion	The Discussion board will facilitate questions and answers. Students may ask questions as well as answer them. Each week questions are posted in the Discussion board and each student is required to post a unique answer. Such answers are graded.
25.00%	Group Projects	Feedback on where the student can improve, in terms of the work done, presentation and how well students work with each other.
20.00%	Individual Projects	Students will be given instructional material and prompts related to the topic that is being covered. Each student submits a project to demonstrate their understand of those topics.

4. Instructor's Technical Qualifications:
Instructors must be well versed in the use of computers, the web, and course management systems (CMS) to interact with students through the CMS messaging boards, email, and online video and chat meetings. As per ACCJC requirements, upper-division classes must be taught by faculty who hold at least a master’s degree in Computer Science.

5. Student Support Services: (e.g. links to counseling, financial aid, bookstore, library, etc.):
Through the syllabus, faculty will place links to library, bookstore, financial aid, disabled students center and counseling resources for students to access as needed.

6. Accessibility Requirements:
The course management system, must be Section 508 complaint as well as any videos, images, tables must be properly captioned. All PDF's and other added files and documents must be Section 508 compliant.

7. Representative Online Lesson or Activity:
Using Teams, develop a project teams site, enable access for all your team members and organize project milestones into meaningful chunks of work for each team member.

Prerequisite Checklist and Worksheet: CS 410
Prerequisite: Computer Science 405 – Cloud Capstone I

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

Criterion	Met	Not 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.	x	
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.	x	
5. The body of knowledge and/or skills which are necessary for success before and/or concurrent with enrollment have been specified in writing.	x	
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.	x	
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.	x	
8. The body of knowledge and/or skills taught in the prerequisite are not an instructional unit of the course requiring the prerequisite.	x	
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:

X Type 2: Sequential within and across disciplines (e.g., Physics 7, 8, 9, …)
Complete the Prerequisite Worksheet

ENTRANCE SKILLS FOR **Computer Science 410 – Cloud Capstone II**
(What the student needs to be able to do or understand BEFORE entering the course in order to be successful)

A)	Working in teams, student implement an industry provided design challenge
B)	Design and develop a secure and fault-tolerant programming solution utilizing principles of software assurance

EXIT SKILLS (objectives) FOR **Computer Science 405 – Cloud Capstone I**
(What the student has the demonstrated ability to do or understand AFTER successful completion of this course)

1.	Working in teams, student implement an industry provided design challenge
2.	Design and develop a secure and fault-tolerant programming solution utilizing principles of software assurance

		ENTRANCE SKILLS FOR CS 410							
		A	B	C	D	E	F	G	H
EXIT SKILLS FOR CS 405	1	X							
	2		X						
	3								
	4								
	5								
	6								
	7								
	8								

New Course: COMPUTER SCIENCE 440, Cloud Patterns

Units:	3.00
Total Instructional Hours (usually 18 per unit):	54.00
Hours per week (full semester equivalent) in Lecture:	3.00
In-Class Lab:	0.00
Arranged:	0.00
Outside-of-Class Hours:	108.00
Date Submitted:	May 2023
Transferability:	Transfers to CSU
Degree Applicability:	Credit - Degree Applicable
Prerequisite(s):	Admission to the Bachelor degree program in Cloud Computing; CS 330
Proposed Start:	Fall 2024
TOP/SAM Code:	070710 - Computer Programming / B - Advanced Occupational
Grading:	Letter Grade or P/NP
Repeatability:	NoD
Library:	List of suggested materials has been given to Librarian
Minimum Qualification:	Computer Science
Program Impact:	Cloud Computing Bachelor's degree (forthcoming)

Rationale
This is a new course for the Cloud Computing Bachelor of Science Degree

I. **Catalog Description**
This course provides an in-depth look at design patterns and best practices for creating scalable, resilient, and efficient cloud-native environments. Students will gain a thorough understanding of cloud design patterns and their critical role in addressing common business IT challenges. Students will learn how to apply design patterns in a streamlined and repeatable process, allowing them to build robust cloud-native solutions. Students will take a look at microservices architecture, learning about the benefits of designing loosely coupled applications with independently deployable cloud services.

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 7 years)
1. Systems Performance : Enterprise and the Cloud, 2nd, Brendan Gregg, Pearson © 2020, ISBN: 978-0136820154
2. Design Patterns for Cloud Native Applications: Patterns in Practice Using APIs, Data, Events, and Streams, 1st Edition, Kasun Indrasiri, Sriskandarajah Suhothayan, O'Reilly © 2021, ISBN: 978-1449319779
3. Cloud Native Patterns: Designing Change-Tolerant Software, Cornelia Davis, Manning © 2019, ISBN: 978-1617294297
4. Cloud Computing: Concepts, Technology And Architecture, 2, Thomas Erl, Ricardo Puttini and Zaigham Mahmood, Pearson © 2023, ISBN: 978-0138052256

III. **Course Objectives**
Upon completion of this course, the student will be able to:
1. Develop a deep understanding of different design patterns and their practical applications in creating scalable, resilient, and efficient cloud-native environments.
2. Gain the skills to design and implement microservices architecture, focusing on developing loosely coupled and independently deployable applications.
3. Create highly scalable and event-driven applications.

IV. **Methods of Presentation:**
Lecture and Discussion, Observation and Demonstration, Discussion, Projects, Group Work, Distance Education

V. **Course Content**

% of Course	Topic

25.000%	Apply a range of architectural approaches essential for developing cloud solutions for business IT infrastructure.
25.000%	Apply their insights into making informed cloud design choices concerning storage, computing, and networking to construct intricate architectures tailored to specific use cases.
25.000%	Demonstrate the ability to design and implement loosely coupled services in cloud-native architectures by applying appropriate patterns and principles.
25.000%	Demonstrate the ability to analyze cloud architectures and identify areas for optimization.
100.000%	Total

VI. **Methods of Evaluation**

% of Course	Topic
5%	Class Participation
20%	Exams/Tests
20%	Final exam
20%	Group Projects
20%	Homework
15%	Quizzes
100%	Total

VII. **Sample Assignments:**

Assignment 1: Cloud Design Patterns Analysis: In this assignment, you will analyze real-world business scenarios and apply cloud design patterns. Choose a scenario where scalability, resilience, or efficiency is crucial. Research and identify at least three cloud design patterns to address the challenges. Compare and contrast the patterns, recommending the most suitable one for the scenario. Present your findings in a professional report format.

Assignment 2: Microservices Architecture Implementation: In this assignment, design and implement microservices for a monolithic application. Select a suitable application and plan a decomposition strategy. Design and implement microservices using relevant technologies. Create a sample application to showcase their functionality. Test the microservices and prepare a presentation on your design and implementation approach.

VIII. **Student Learning Outcomes:**

1. Upon completion of this course, students will be able to analyze real-world scenarios, identify appropriate cloud design patterns, and apply them to develop scalable, resilient, and efficient cloud-native solutions.
2. Upon completion of this course, students will demonstrate competence in designing and implementing microservices architecture by creating modular, loosely coupled, and independently deployable applications.

CS 440 Distance Education Application

- ☑ Fully Online
- ☑ Online/Classroom Hybrid (not a delivery option when campus is closed)

1a. Instructor - Student Interaction:

Students get feedback on their assignments, which are assigned every other week, including how to improve and follow best practices. In the quizzes, which are assigned every other week, students get feedback on their errors and get suggestions on how to better study. In the midterm and the final exam, students get feedback on their errors and how to improve. In the weekly threaded discussions, students must post answers to given questions/prompts and they must provide unique answers. They get feedback on their answers, how complete they are, and what they can improve on. Students get feedback on their group projects from their peers and instructor.

1b. Student - Student Interaction:

Every week, students must post responses on to a threaded discussion board based on a stated prompt. They must comment on each other. Students are placed in groups to enable them to contribute as well as read all posted messages.

1c. Student - Content Interaction:
Each week, students get a lecture in the form of video and PDF files. They may also get additional videos to explain certain concepts. Additionally, there may be supporting files and documents added to each week's content.

1d. Distance Ed Interactions:

Online class activities that promote class interaction and engagement	Brief Description	% of Online Course Hours
Discussion Boards	Students post weekly answers to questions. Instructor will provide feedback and a grade based on posting.	20.00%
Online Lecture	PowerPoint slides with animation and annotations to explain the topics covered. Videos will be presented for special topics.	20.00%
Exams	Midterm and Final Exam (2 Exams)	20.00%
Project Presentation	Students complete a final project utilizing cloud services. The instructor will be providing individual feedback for each project.	20.00%
Written assignments	Students submit written assignments and get individual feedback as well as sample solutions and general comments from the whole class.	20.00%

2. Organization of Content:
Using an online course management system, each week there will be a module instructions page which will lead students to other documents, and files in addition to the assigned work of a discussion message and an assignment/project or a quiz.

3. Assessments:

% of grade	Activity	Assessment Method
10.00%	Threaded Discussions	The Discussion board will facilitate questions and answers. Students may ask questions as well as answer them. Each week questions are posted in the Discussion board and each student is required to post a unique answer. Such answers are graded.
10.00%	Midterm	Feedback on where the student can improve and what topics to study more in addition to answer keys are provided.
15.00%	Final Exam	Feedback on where the student can improve.
15.00%	Final Project	Students will get feedback on an organized final project.
30.00%	Homework	Students will be given instructional material and exercises related to the topic that is being covered. A sample solution with overall comments will be provided to all students.
20.00%	Homework Assignments	Students will be taking quizzes. These quizzes will help students to keep up with the class material. Students will receive answer keys for each quiz and they will be allowed to post questions on the discussion board if there is a need for clarification.

4. Instructor's Technical Qualifications:
Instructors must be well versed in the use of computers, the web, and course management systems (CMS) to interact with students through the CMS messaging boards, email, and online video and chat meetings. As per ACCJC requirements, upper-division classes must be taught by faculty who hold at least a master’s degree in Computer Science.

5. Student Support Services: (e.g. links to counseling, financial aid, bookstore, library, etc.):
Through the syllabus, faculty will place links to library, bookstore, financial aid, disabled students center and counseling resources for students to access as needed.

6. Accessibility Requirements:
The course management system, must be Section 508 complaint as well as any videos, images, tables must be properly captioned. All PDF's and other added files and documents must be Section 508 compliant.

7. Representative Online Lesson or Activity:
In Canvas create a discussion thread that requires each student to write an R program snippet to create a data frame using two given vectors and display the duplicated elements and unique rows of the said data frame.

Prerequisite Checklist and Worksheet: CS 440

Prerequisite: Computer Science 330 – Cloud Operations Technologies and Tools

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

Criterion	Met	Not 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.	**x**	
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.	**x**	
5. The body of knowledge and/or skills which are necessary for success before and/or concurrent with enrollment have been specified in writing.	**x**	
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.	**x**	
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.	**x**	
8. The body of knowledge and/or skills taught in the prerequisite are not an instructional unit of the course requiring the prerequisite.	**x**	
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:

X Type 2: Sequential within and across disciplines (e.g., Physics 7, 8, 9, …)
Complete the Prerequisite Worksheet

ENTRANCE SKILLS FOR **Computer Science 440 – Cloud Patterns**
(What the student needs to be able to do or understand BEFORE entering the course in order to be successful)

A)	Understand the importance of infrastructure-as-code to help automate, monitor and manage cloud systems
B)	Build effective continuous integration/continuous deployment strategies using available cloud tools and services

EXIT SKILLS (objectives) FOR **Computer Science 330 – Cloud Operations Technologies and Tools**
(What the student has the demonstrated ability to do or understand AFTER successful completion of this course)

1.	Understand the importance of infrastructure-as-code to help automate, monitor and manage cloud systems
2.	Build effective continuous integration/continuous deployment strategies using available cloud tools and services

		ENTRANCE SKILLS FOR CS 440							
		A	B	C	D	E	F	G	H
EXIT SKILLS FOR CS 330	1	X							
	2		X						
	3								
	4								
	5								
	6								
	7								
	8								

New Course: COMPUTER SCIENCE 450, Cloud Certification Bootcamp

Units:	3.00
Total Instructional Hours (usually 18 per unit):	54.00
Hours per week (full semester equivalent) in Lecture:	3.00
In-Class Lab:	0.00
Arranged:	0.00
Outside-of-Class Hours:	108.00
Date Submitted:	May 2023
Date Updated:	
C-ID:	

Transferability:	Transfers to CSU

Degree Applicability:	Credit - Degree Applicable
Prerequisite(s):	Admission to the Bachelor degree program in Cloud Computing; CS 330
Proposed Start:	Fall 2024
TOP/SAM Code:	070710 - Computer Programming / B - Advanced Occupational
Grading:	Letter Grade or P/NP
Repeatability:	No
Library:	List of suggested materials has been given to Librarian
Minimum Qualification:	Computer Science
Program Impact:	Cloud Computing Bachelor's degree (forthcoming)

Rationale
This is a new course for the Cloud Computing Bachelor of Science Degree.

I. **Catalog Description**
In this course, students prepare to earn an industry-recognized credential in cloud computing. Students will prepare for and complete student guides, practice exams and other materials.

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 7 years)
1. Cloud Computing Solutions Architect : A Hands-On Approach, 1st, Arshdeep Bahga and Vijay Madisetti, VPT Publishers © 2019, ISBN: 978-0996025591
2. Cloud Computing: Concepts, Technology And Architecture, 2, Thomas Erl, Ricardo Puttini and Zaigham Mahmood, Pearson © 2023, ISBN: 978-0138052256
3. Solutions Architect Certification Exam Guide https://d1.awsstatic.com/training-and-certification/docs-sa-pro/AWS-Certified-Solutions-Architect-Professional_Exam-Guide.pdf

III. **Course Objectives**
Upon completion of this course, the student will be able to:
1. Prepare for an industry-recognized certification exam
2. Complete practice tests and review key concepts.

IV. **Methods of Presentation:**
Lecture and Discussion, Projects, Group Work, Online instructor-provided resources, Distance Education

V. **Course Content**

% of Course	Topic
25.000%	Design for Continuous Improvement of Existing Solutions by demonstrating knowledge of remediation strategies, disaster recovery planning, monitoring and logging solutions and engineering failure scenario activities to support and exercise an understanding of recovery actions

25.000%	Design Cloud Solutions for new deployments that demonstrate knowledge of infrastructure as code ,Continuous integration/continuous delivery (CI/CD) • Change management processes • Configuration management tools (for example, AWS Systems Manager)
25.000%	Design Solutions for Organizational Complexity which demonstrates knowledge of global infrastructure, networking concepts, hybrid DNS concepts, network traffic monitoring and segmentation by developing skills to evaluate connectivity options for multiple VPCs as well as connectivity options for on-premises, co-location, and cloud integration
25.000%	Complete a sample certification prep exam
100.000%	Total

VI. **Methods of Evaluation**

% of Course	Topic
10%	Class Participation
20%	Final Project: Taking the industry certification exam
20%	Homework
25%	Quizzes
25%	Class Work
100%	Total

VII. **Sample Assignments:**

Troubleshoot network connectivity issues: Troubleshooting basic network connectivity issues is an important skill. This troubleshooting scenario is an opportunity to assess your skills in this area. In this lab scenario, a colleague has deployed a VPC and instances, but there are a few things wrong. `Instance3` is not able to connect to the internet and your goal is to determine why. Troubleshoot the issue and ensure the instance has connectivity to the internet, so that you can ping and log in to the instance using SSH. Identify and fix the issues that are preventing the instance from connecting to the Internet.

Migrate data to the cloud in a cost effective manner: As the Senior Solutions Architect, you have have been tasked with optimizing the data transfer to more cost-effective solutions. You have identified the cost savings of moving a MySQL database currently running on an EC2 instance to an RDS Aurora MySQL instance. Use the Database Migrations Service (DMS) to migrate a MySQL database from an EC2 server to an RDS Aurora MySQL database.

Complete Practice Exams: Complete sample practice exams and develop strategies for answering complex multi-part questions that are common on the exam

VIII. **Student Learning Outcomes:**

1. Upon completion of this course, students will prepare for an industry-recognized certification exam
2. Upon completion of this course, students will have selected and identified a certification exam they wish to complete.

CS 450 Distance Education Application

- ☑ Fully Online
- ☑ Online/Classroom Hybrid (not a delivery option when campus is closed)

1a. Instructor - Student Interaction:

Students get feedback on their assignments, which are assigned every other week, including how to improve and follow best practices. In the quizzes, which are assigned every other week, students get feedback on their errors and get suggestions on how to better study. On the quizzes, students get feedback on their errors and how to improve. In the weekly threaded discussions, students must post answers to given questions/prompts and they must provide unique answers. They get feedback on their answers, how complete they are, and what they can improve on.

1b. Student - Student Interaction:

Every week, students must post responses on to a threaded discussion board based on a stated prompt. They must comment on each other. Students are placed in groups to enable them to contribute as well as read all posted messages.

1c. Student - Content Interaction:
Each week, students get a lecture in the form of video and PDF files. They may also get additional videos to explain certain concepts. Additionally, there may be supporting files and documents added to each week's content.

1d. Distance Ed Interactions:

Online class activities that promote class interaction and engagement	Brief Description	% of Online Course Hours
Discussion Boards	Students post weekly answers to questions. Instructor will provide feedback and a grade based on posting.	10.00%
Exams	Sample practice certification exam preparation.	20.00%
Online Lecture	PowerPoint slides with animation and annotations to explain the topics covered. Videos will be presented for special topics	20.00%
Written assignments	Students submit written assignments and get individual feedback as well as sample solutions and general comments from the whole class.	25.00%
Exams	Midterm and Final Exam (2 Exams)	25.00%

2. Organization of Content:
Using an online course management system, each week there will be a module instructions page which will lead students to other documents, and files in addition to the assigned work of a discussion message and an assignment/project or a quiz.

3. Assessments:

% of grade	Activity	Assessment Method
25.00%	Threaded Discussions	The Discussion board will facilitate questions and answers. Students may ask questions as well as answer them. Each week questions are posted in the Discussion board and each student is required to post a unique answer. Such answers are graded.
25.00%	Final Exam	Students will get feedback on the final exam.
25.00%	Homework	Students will be given instructional material and exercises related to the topic that is being covered. A sample solution with overall comments will be provided to all students.
25.00%	Quizzes	Students will be taking quizzes. These quizzes will help students to keep up with the class material. Students will receive answer keys for each quiz and they will be allowed to post questions on the discussion board if there is a need for clarification.

4. Instructor's Technical Qualifications:
Instructors must be well versed in the use of computers, the web, and course management systems (CMS) to interact with students through the CMS messaging boards, email, and online video and chat meetings. As per ACCJC requirements, upper-division classes must be taught by faculty who hold at least a master’s degree in Computer Science.

5. Student Support Services: (e.g. links to counseling, financial aid, bookstore, library, etc.):
Through the syllabus, faculty will place links to library, bookstore, financial aid, disabled students center and counseling resources for students to access as needed.

6. Accessibility Requirements:
The course management system, must be Section 508 complaint as well as any videos, images, tables must be properly captioned. All PDF's and other added files and documents must be Section 508 compliant.

7. Representative Online Lesson or Activity:
Respond to the discussion forum prompt that includes a sample complex multi-part sample certification exam question. Critique the different approaches and solutions offered by classmates.

Prerequisite Checklist and Worksheet: CS 450

Prerequisite: Computer Science 330 – Cloud Operations Technologies and Tools

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

Criterion	Met	Not 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.	x	
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.	x	
5. The body of knowledge and/or skills which are necessary for success before and/or concurrent with enrollment have been specified in writing.	x	
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.	x	
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.	x	
8. The body of knowledge and/or skills taught in the prerequisite are not an instructional unit of the course requiring the prerequisite.	x	
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:

X Type 2: Sequential within and across disciplines (e.g., Physics 7, 8, 9, …)
Complete the Prerequisite Worksheet

ENTRANCE SKILLS FOR **Computer Science 450 – Certification Bootcamp**
(What the student needs to be able to do or understand BEFORE entering the course in order to be successful)

A)	Understand the importance of infrastructure-as-code to help automate, monitor and manage cloud systems
B)	Build effective continuous integration/continuous deployment strategies using available cloud tools and services

EXIT SKILLS (objectives) FOR **Computer Science 330 – Cloud Operations Technologies and Tools**
(What the student has the demonstrated ability to do or understand AFTER successful completion of this course)

1.	Understand the importance of infrastructure-as-code to help automate, monitor and manage cloud systems
2.	Build effective continuous integration/continuous deployment strategies using available cloud tools and services

		ENTRANCE SKILLS FOR CS 450							
EXIT SKILLS FOR CS 330		A	B	C	D	E	F	G	H
	1	X							
	2		X						
	3								
	4								
	5								
	6								
	7								
	8								