



SAN DIEGO STATE UNIVERSITY

San Diego State University Senate Agenda

October 3, 2017

AL 101

2:00 to 4:30 pm

1. Agenda (Attiq)
2. Minutes / September (Attiq)
3. Announcements (Bober-Michel)
 - 3.1 Follow-up / Open Forum
 - 3.2 Dean searches (overview)
 - 3.3 Status: Senate websites (public and internal)
4. Provost's Report
5. SEC Report: Ornatowski
 - 5.1 Referral chart
 - 5.1.1 Referral to Constitution and Bylaws: Review Senate committee structure, specifically: duties/roles/responsibilities of committees, length of appointment of members and chairs, and related issues
 - 5.1.2 Referral to Faculty Affairs: Clarify policy language regarding adjunct/volunteer appointments
 - 5.1.3 Referral to AP&P: Review campus policies regarding GE to bring them into compliance with EO 1100, paying particular attention to double counting GE course credit for high-unit majors.....3
6. Old Business
7. New Business: Action Items
 - 7.1 Elections / Dean Search Committees
 - 7.1.1 HHS / outside member (replacement)
 - 7.1.2 COE / outside member
 - 7.1.3 CES / five faculty members
 - 7.2 Committees and Elections (Vaughn)4
 - 7.3 Faculty Honors and Awards (Ozturk).....11

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10.	Other Business	
10.1	GE reform; EO 1100 and EO 1110 (Shultz)	
10.2	Class Size Task Force / final report (Bresciani-Ludvik) 3:15 pm time certain	
10.3	Status: SDSUId; Bb integration (Xanthos, Frazee) 3:45 pm time certain	
10.4	Overview of HR handling of personnel issues (Harpole) 3:00 pm time certain	
10.5	Budget transparency – next steps (Conaty/Bober-Michel)	
11.	Adjournment	

Committee	Date	Item	Referred by
Constitution and Bylaws	December 2017	Review Senate committee structure, specifically: duties/roles/responsibilities of committees, length of appointment of members and chairs, and related issues. Are all the standing & other committees needed?	SEC
Faculty Affairs	December 2017	Clarify policy language regarding adjunct / volunteer appointments	SEC
AP & P	December 2017	Review campus policies regarding GE to bring them into compliance with EO 1100, paying particular attention to double counting GE course credit for high-unit majors	SEC

TO: SEC/Senate
FROM: Allison Vaughn, Chair, Committee on Committees and Elections
DATE: September 26, 2017
RE: Action Items

The Committee on Committees and Elections moves approval of the following appointments, reappointments, or replacements to committees (marked with an asterisk) along with open spots which need to be filled in each committee. Additionally, we provide a list of existing committee chairs and a list of committees for which no roster information could be found. Finally, we end this report with a list of Senators who are not currently serving on a committee.

EXISTING COMMITTEE CHAIRS

Academic Policy and Planning

Chair: DJ Hopkins

Academic Resources and Planning

Chair: Donna Conaty

Bookstore Advisory

Chair: Glen McClish

Campus Development

Chair: Laura Shinn

Committee on Committees and Elections

Chair: Allison Vaughn

Constitution and Bylaws

Chair: Eniko Csomay

Copy Rights and Patents

Chair: Douglas Grotjahn

Disability Access and Compliance

Co-Chairs: Jessica Rentto and Pamela Starr

Diversity, Equity, and Outreach

Chair: Beth Chung

Environment and Safety

Chair: Sridhar Seshagiri

Faculty Affairs

Chair: Jennifer Imazeki

Faculty Honors and Awards

Chair: Yusuf Ozturk

Fee Advisory Committee (Campus)

Chair: David Ely

Freedom of Expression

Chair: Mark Freeman

GE Curriculum and Assessment

Chair: Eniko Csomay

Graduate Council

Chair: Stephen Welter

Honorary Degrees

Chair: Provost Chukuka Enwemeka

Instructional and Information Technology

Chair: Mark Siprut

Intercollegiate Athletic Council

Chair: John Puttman

Liberal Studies

Chair: Virginia Loh-Hagan

Library and Information Access

Chair: Peter Herman (Edward Beasley, chair Fall 2017-Herman on sabbatical)

SDSU Press Editorial Board

Chair: William Anthony Nericcio

Staff Affairs

Chair: Debra Bertram

Student Grievance

Chair: Estralita Martin

Student Learning Outcomes

Chair: Stephen Schellenberg

Student Media Advisory

Chair: Giselle Luevanos

Sustainability

Chair: Keven Jeffrey

Undergraduate Council

Chair: Nora Shultz

Undergraduate Curriculum

Chair: Larry Verity

COMMITTEES WITH NO ROSTER INFORMATION

Extended Studies

International Programs

Scholarships Committee

Student Affairs

Student Health Advisory Board

Teacher Education Advisory Council

FACULTY/STAFF/STUDENT APPOINTMENTS AND REAPPOINTMENTS & NEED

*reappointments or new appointments

Academic Policy and Planning

*Donna Castañeda term renewed May 2020

*Matthew Mahar new term May 2020

*Chris Thomas (student) new term May 2018

*David Perry (student) new term May 2018

Academic Resources and Planning

*Mark Tucker new term May 2020

*Chris Thomas (student) new term May 2018

*Sydney Dailey Thomas (student) new term May 2018

NEED ENG facultyNEED IVC faculty***Bookstore Advisory (roster complete)******Campus Development***

*Anne McMills new term May 2020

*Raymond Moberly new term May 2020
*Vadim Ponomarenko new term May 2020
*Chimezie Ebiriekwe (AS Pres) new term May 2018
*Will Wiseman (student) new term May 2018
NEED 1 faculty

Committee on Committees (roster complete)

Constitution and Bylaws (roster complete)

Copyrights and Patents (roster complete)

Disability Access and Compliance

*Quinn Toohey (student) new term May 2018

Diversity, Equity, and Outreach

*Jochen Kressler new term May 2020
*Chloe Sabio (student) new term May 2018

Environment and Safety

*Valerie Barker new term May 2020
NEED 3 faculty
NEED 1 member of local unit 3 collective bargaining agency
NEED 2 students

Faculty Affairs (roster complete)

Faculty Honors and Awards

NEED 1 student
NEED 1 former recipient of alumni award
NEED 1 alumnus

Fee Advisory Committee (Campus) (roster complete)

Freedom of Expression

NEED Provost or designee
NEED 5 students (AS President or designee + 4 others)

GE Curriculum and Assessment

*Arlette Baljon new term May 2020
NEED 1 EDU faculty
NEED 1 IVC faculty
NEED 2 (undergrad) students

Graduate Council

*Latha Varadarajan new term May 2020

NEED 2 (grad) students

Honorary Degrees (roster complete)

Instructional and Information Technology

*Carmelo Interlando new term May 2020

*Bongsik Shin new term May 2020

NEED 1 ENG faculty

NEED 1 student

Intercollegiate Athletic Council

*Gabriel Gonzalez new term May 2020

*Ellison Grove (student SAAC) new term May 2018

*Hayden Willis (student AS Pres appointee) new term May 2018

Liberal Studies (roster complete)

Library and Information Access

*Elizabeth Waters new term May 2020

*Steven Gill new term May 2020

NEED 2 students

SDSU Press Editorial Board (roster complete)

Staff Affairs

NEED 1 student

Student Grievance

*Mike Roberts new term May 2020

NEED 1 full-time administrator

NEED 6 students

Student Learning Outcomes

*Pamela Jackson renewed May 2020

*Kathie Williams renewed May 2020

*Marilee Bresciani new term May 2020

NEED 1 ENG faculty

NEED 1 HHS faculty

NEED 1 PSFA faculty

NEED 2 students

Student Media Advisory

*Patti O'Leary new term May 2020

*Arthur Santana new term May 2020

NEED 1 AS VP of Finance or designee

NEED 2 students (AS appointed)

Sustainability

- *Chloe Bycoskie (student) term renewed May 2018
- *Mario Newhouser (student) term renewed May 2018

Undergraduate Council

- *Alanna Sparks (student) new term May 2018
- *Matthew Richman (student) new term May 2018
- NEED 1 ENG faculty
- NEED 1 HHS faculty
- NEED 1 IVC faculty

Undergraduate Curriculum

- *Nikolas Marquez (student) new term May 2018
- NEED 1 student

University Research Council

- *George Youssef new term May 2020
- *Sara Gombatto new term May 2020
- *John Love new term May 2020
- *Amanda Lanthorne new term May 2020
- NEED 1 HHS faculty
- NEED 1 PSFA faculty
- NEED 1 SCI faculty

- *reappointments or new appointments

Senators not currently represented on a committee:**A&L**

Adisa Alkebulan
George Chistakos
Michael McCall
Chris Werry

EDU

Karen Cadiero-Kaplan
Nan Hampton

MPP I & II

Jennifer Acfalle

SCI

Tao Xie

Staff

Norma Aguilar

University Services
Manuel Rivera
Carrie Sakai



SAN DIEGO STATE
UNIVERSITY

**Department of Electrical
and Computer Engineering**
College of Engineering E-426
San Diego State University
5500 Campanile Drive
San Diego CA 92182-1309
Tel: 619 · 594 · 5718
Fax: 619 · 594 · 2654

Friday, September 7, 2017

TO: SEC/Senate

FROM: Yusuf Ozturk, Chair, Faculty Honors and Awards Committee

SUBJECT: Emeritus Status

The Faculty Honors and Awards committee recommends that the Senate approve emeritus status for the following professors.

- Douglas H. Deutschman, Professor of Biology, November 1, 2017, 20 years
- Alexis Koster, Professor of Management and Information Systems, December 30, 2017, 34 years
- Kathy S. Williams, Professor of Biology, August 21, 2017, 30 years

Sincerely,

Yusuf Ozturk
Chair, Faculty Honors and Awards Committee

TO: Senate Executive Committee / Senate

FROM: Eniko Csomay, Chair
General Education Curriculum and Assessment Committee

DATE: August 16, 2017

RE: GENERAL EDUCATION PROGRAM

Action

I. COMMUNICATION AND CRITICAL THINKING

3. Intermediate Composition and Critical Thinking

New course.

RWS 220. Rhetoric of Written Arguments and the Tutoring of Writing (3) [GE]

Prerequisites: Satisfaction of the SDSU writing competency requirement and Rhetoric and Writing Studies 100 [or English 100], 101, Africana Studies 120, American Indian Studies 120, Chicana and Chicano Studies 111B, or Linguistics 100. **Proof of completion of prerequisites required:** Test scores or verification of exemption; copy of transcript.

Critical thinking, reading, and writing. Rhetoric of written arguments in exploring theories and practices related to learning to write and the tutoring of writing. Cohesion, rhetorical conventions, and structure. Not open to students with credit in Africana Studies 200, American Indian Studies 225, Chicana and Chicano Studies 200, Linguistics 200, or Rhetoric and Writing Studies 200 [or English 200].

II. FOUNDATIONS OF LEARNING

A. Natural Sciences and Quantitative Reasoning

4. Mathematics and Quantitative Reasoning

Change to course general text and prerequisites.

MATH 141. Precalculus (3) [GE]

Two lectures and two hours of activity.

Prerequisites: Satisfaction of the Entry-Level Mathematics requirement and qualification on the Mathematics Departmental Placement Examination.

Real numbers, inequalities; polynomials; rational, trigonometric, exponential and logarithmic functions; conic sections. Not open to students with credit in Mathematics 105, 121, 124, or 150.

B. Social and Behavioral Sciences

Addition of existing course to general education.

ARP 205. Exploring Leadership (3) [GE]

Understanding, applying and critiquing leadership theories, examining personal strengths, values, goals, and philosophy of leadership.

Addition of existing course to general education.

CIV E 220. Civil and Environmental Engineering Computer Applications (3) [GE]

Prerequisite: Mathematics 150.

Graphical information systems (GIS), specialized civil engineering software, advanced problem solving. Open only to engineering majors.

Addition of existing course to general education. Change to course description and prerequisites.

M E 202. Computer Programming and Applications (3) [GE]

Two lectures and three hours of activity.

Prerequisite: Mathematics 151.

Principles of programming using Matlab. Syntax topics to include arrays, control flow, data types, functions, and loops. Numerical methods to include curve fitting, Gauss reduction, interpolation, matrix operations, Newton-Raphson, numerical differentiation, and numerical integration. Application areas in mechanical engineering to include dynamic systems, finite element analysis, graphical user interfaces, and image analysis. Open only to engineering majors.

IV. EXPLORATIONS OF THE HUMAN EXPERIENCE

C. Humanities

New course.

HUM 380. Japanese Culture (3) [GE]
(Same course as Japanese 380)

Prerequisites: Completion of the General Education requirement in Foundations of Learning II.C., Humanities required for nonmajors.

Significant works of literary, performing, and visual arts to include array of artistic trends, cultural phenomena, historical developments, and socio-political discourses throughout the nation's long and tumultuous history. Taught in English.

New course.

HUM 410. Studies in Popular Culture (3) [GE]

Prerequisites: Completion of the General Education requirement in Foundations of Learning II.C., Humanities required for nonmajors.

Animated film, comics, literature, live-action film, and television. Representative works to include secondary critical readings. Popular culture

informed by significant cultural discourses, historical developments, and political debates.

New course.

**JAPAN 380. Japanese Culture (3) [GE]
(Same course as Humanities 380)**

Prerequisites: Completion of the General Education requirement in Foundations of Learning II.C., Humanities required for nonmajors.

Significant works of literary, performing, and visual arts to include array of artistic trends, cultural phenomena, historical developments, and socio-political discourses throughout the nation's long and tumultuous history. Taught in English.

Report prepared and respectfully submitted by Curriculum Services on behalf of the General Education Curriculum and Assessment Committee.

Dear esteemed members of the Senate Executive Committee,

In response to the request of the Senate of San Diego State University during its 9/5/2017 meeting, please find attached to this letter the syllabi for:

AE 460A – Aerospace Engineering Applications
CIVE 220 - Computer Applications Geographic Information Systems
CIVE 495 – Capstone Design Project
ME 202 - Computer Programming Applications for Mechanical Engineers
ME 490A- Engineering Design: Senior Project I

Our approach to the proposed resolution was informed by four constraints, which resulted in a sub-optimal, yet pragmatic, solution. The constraints are summarized *in the desire to maintain (i) equity between all SDSU students to graduate in four years while (ii) graduating well-rounded, culturally and academically-informed, contributing members of our national and international societies (i.e., the Spirit of General Education) and at the same time (iii) avoid compromising the College of Engineering ABET accreditation.* The final constraint is the CSU mandate to reduce the number of units for each major to only 120 units. Currently, it is practically impossible for any engineering student to finish his/her degree in four years because of the average number of required units which are above the national average. The extended stay at SDSU, not only increases the cost of education but also, in some cases, adds hardship for students who must support themselves and their families while attending school. It is important to note that maintaining ABET accreditation is not only academically required for SDSU to maintain its regional, national and international role as a beacon of higher education, but graduating from an accredited program is imperative for our graduates to obtain jobs in industry as well as enable students to continue their post-graduate education. Simply put, without ABET accreditation, our students cannot translate their education into practice. Moreover, the ABET requirements have been focusing on developing well-rounded graduates, which is clearly evident from the Student Learning Outcomes defined by the accrediting organization. The shift in ABET vision is informed by the National Academy of Engineers report on ‘Engineers of 2020’ as well as the American Society of Mechanical Engineers ‘Vision 2030’. These research-based reports mandates engineering programs to focus on educating well-rounded engineers equipped with interpersonal, societal, and cultural-awareness skills as well as the technical skills required to design roads, bridges, planes, and medical equipment. In doing so, ABET mandates a minimum number of engineering units to be included in each accredited program. SDSU engineering programs are currently at this minimum. Here, we include verbatim five of the twelve ABET SLOs, where underlined keywords are directly mapped to SDSU General Education Goals.

ABET SLO (c) an ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability;

ABET SLO (f) an understanding of professional and ethical responsibility;

ABET SLO (g) an ability to communicate effectively;

ABET SLO (i) a recognition of the need for, and an ability to engage in life-long learning;

ABET SLO (j) a knowledge of contemporary issues

Our pragmatic proposal seeks to organically and effectively embed, *not eliminate*, elements of General Education as delineated in the SDSU Academic Catalog (please see for example page 90-

92 in 2016-2017 General Catalog) into one lower and one upper division course. In other words, engineering students will be educated on Social and Behavior Science concepts in the context of their major courses, which will be measured and assessed as part of the ABET accreditation process as dictated by the aforementioned ABET SLOs. Specifically, a lower division course (e.g., ME202 for Mechanical and Aerospace Engineering) will include Foundations of Learning (IIB) - Social and Behavioral Sciences while the upper division course (e.g., ME490A for Mechanical Engineering and AE460A for Aerospace Engineering) will cover IV Explorations of Human Experience, B. Social and Behavioral Sciences. Concerning the lower division course being open to engineering students only, the College of Engineering is following the footsteps of existing courses such as CHEM 102 (for Nursing majors only) and CFD 170 (for Liberal Studies majors only). This precedent is already included in 2017-2018 General Catalog page 91.

In summary, the proposed solution, however suboptimal, maintains a balance between ABET requirements and the Spirit of General Education within the context of the character of San Diego State University in leadership and innovation.

Respectfully yours,
George Youssef, *Ph.D., P.E.*
(On behalf the College of Engineering)

CC:

Dr. Norah Shultz (Division of Undergraduate Studies, Associate Vice President for Academic Affairs - Student Achievement)
Dr. Monte Mehrabadi (College of Engineering, *Dean*)
Dr. John Abraham, (Mechanical Engineering, *Chair*)
Dr. Ping Lu (Aerospace Engineering, *Chair*)
Dr. Janusz Supernak (Civil, Construction and Environmental Engineering, *Chair*)
Dr. Thais Alves (Civil, Construction and Environmental Engineering, *Associate Professor*)

TO: Senate Executive Committee / Senate

FROM: Eniko Csomay, Chair
General Education Curriculum and Assessment Committee

DATE: September 13, 2017

RE: GENERAL EDUCATION PROGRAM

Action

II. FOUNDATIONS OF LEARNING

B. Social and Behavioral Sciences

Previously reported at the August 19, 2017 SEC meeting

Addition of existing course to general education.

CIV E 220. Civil and Environmental Engineering Computer Applications (3) [GE]

Prerequisite: Mathematics 150.

Graphical information systems (GIS), specialized civil engineering software, advanced problem solving. Open only to engineering majors.

Previously reported at the August 19, 2017 SEC meeting

Addition of existing course to general education. Change to course description and prerequisites.

M E 202. Computer Programming and Applications (3) [GE]

Two lectures and three hours of activity.

Prerequisite: Mathematics 151.

Principles of programming using Matlab. Syntax topics to include arrays, control flow, data types, functions, and loops. Numerical methods to include curve fitting, Gauss reduction, interpolation, matrix operations, Newton-Raphson, numerical differentiation, and numerical integration. Application areas in mechanical engineering to include dynamic systems, finite element analysis, graphical user interfaces, and image analysis. Open only to engineering majors.

IV. EXPLORATIONS OF THE HUMAN EXPERIENCE

B. Social and Behavioral Sciences

Addition of existing course to general education. Change to course prerequisite.

A E 460A. Aerospace Engineering Applications (3) [GE]

One lecture and five hours of design activity.

Prerequisites: Aerospace Engineering 302, 303, 310, and completion of the General Education requirement in Foundations of Learning II.B., Social and Behavioral Sciences.

Student projects in aerospace design.

New course.

ENS 318. Sport, Games, and Culture (3) [GE]

Prerequisites: Sociology 101 and completion of the General Education requirement in Foundations of Learning IIB. Social and Behavioral Sciences.

Contemporary games and sports. Anthro-historical development of sports and philosophies, political economies, and socio-cultural influences. Psychological performance modalities of modern sport.

Change to course description.

HHS 350. Applied International Health and Human Services (3) [GE]

Prerequisite: Completion of the General Education requirement in Foundations of Learning II.B., Social and Behavioral Sciences. See Class Schedule for additional prerequisites.

Selected themes in health and human services. Course taught at SDSU. Includes participation in an approved international program.

Addition of existing course to general education. Change to course description and grading method.

M E 490A. Engineering Design: Senior Project (3) [GE]

One lecture and six hours of guided design activities.

Prerequisites: Mechanical Engineering 304 (or Civil Engineering 301), 310, 314, 452. Completion of the General Education requirement in Foundations of Learning II.B., Social and Behavioral Sciences.

Applications of engineering principles and design techniques to building and testing of an engineering system. A single project is completed in this two-course sequence and is judged completed upon presentation of an oral and written report. Engineering ethics and practice. Social and behavioral sciences for exploration of human experiences to include cause-and-effect of problem-solution, global awareness, and interdisciplinary impacts of a synthesized solution. Open only to engineering majors.

C. Humanities

Addition of existing course to general education.

EUROP 435. Culture and Identity in Post-Communist Europe (3) [GE]

Prerequisite: Completion of the General Education requirement in Foundations of Learning II.C., Humanities.

Social, economic, and cultural transformations in Europe after the collapse of communism. Daily life under communism and the impact of the collapse of this political system on language, individual identity, space, and community.

New course.

***REL S 382. California Religion and Spirituality (3) [GE]**

Prerequisite: Completion of the General Education requirement in Foundations of Learning II.C., Humanities required for nonmajors.

Religious and spiritual landscape of California with examination of new and indigenous religious communities.

***Cultural diversity course**

Report prepared and respectfully submitted by Curriculum Services on behalf of the General Education Curriculum and Assessment Committee.

Aerospace Engineering Applications

AE 460A

Schedule Number 20018

Course Overview

Catalog Title: Student projects in aerospace design.

Course Content: Conceptual design of an airplane, with the first iteration in AE460A and a second iteration.

Teams of 5 are formed.

Three planes to choose from; close air support, a navy jet trainer, and a supersonic business jet.

Initial Takeoff weight, mission fuel weight, and performance sizing for two of the three planes is performed.

Preliminary report is submitted to choose one of the planes for detailed conceptual design for the academic year.

Detailed layout drawing, weight, drag and performance calculations.

First draft of the final report is submitted at the end of the semester.

This is an Exploration course in Social and Behavioral Sciences.

Completing this course will help you learn to do the following with great depth:

- 1) Explore and recognize basic terms, concepts, and domain of the social and behavior sciences;
- 2) Comprehend diverse theories and methods of the social and behavior sciences
- 3) Identify human behavior patterns across space and time and discuss their interrelatedness and distinctiveness
- 4) Enhance your understanding of the social world through the application of conceptual frameworks from the social and behavioral sciences to first-hand engagement with contemporary issues

Student Learning Outcomes:

- Apply knowledge of mathematics, science, and engineering
- Design and conduct experiments, as well as to analyze and interpret data
- Work on multi-disciplinary teams to design a complex aerospace system, within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability
- Design a system, component, or process to meet desired needs.
- Identify, formulate, and solve engineering problems

Program Outcomes:

1. An ability to apply knowledge of mathematics, science, and engineering (ABET Criterion 3a).
2. An ability to design and conduct experiments, as well as to analyze and interpret data (ABET Criterion 3b).
3. An ability to work on multi-disciplinary teams to design a complex system, such as aircraft or spacecraft, from conceptual to preliminary design, within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability. (ABET Criterion 3c, 3d & 3j).¹
4. An ability to identify, formulate, and solve engineering problems (ABET Criterion 3e).
5. An understanding of professional and ethical responsibility (ABET Criterion 3f).
6. An ability to communicate effectively, using oral, written and graphical communication skills (ABET Criterion 3g).
7. The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context (ABET Criterion 3h).
8. A recognition of the need for, and an ability to engage in, life-long learning (ABET Criterion 3i).
9. An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice (ABET Criterion 3k).
10. An understanding of aerodynamics, aerospace materials, structures, propulsion, flight mechanics, and stability and control.

Enrollment Information

Prerequisites: AE 302, 303, 310

Course Materials

Required textbook & software:

1. Fundamentals of Aircraft Design by Nicolai, METS Inc. (1984)
2. AAA (Advanced Aircraft Analysis) Software, DAR Corporation, (2013)

Course Structure and Conduct

Traditional 1-hour lecture & 5-hour design activities.

¹ AE460 uses a System Requirements Document of realistic aircraft design requirements to fulfill this outcome. Included is a knowledge of contemporary issues needed to design the system.

Course Assessment and Grading

See grading spread sheet below for the detailed assessment which include:

- Team progress reports and presentations = 15%; (*written* and oral presentations*)
- Preliminary Design Review = 25%; (*oral presentation*)
- Critical Design Review (guidelines Appendix E) = 25%; (*oral presentation*)
- Final report = 35%; and (*written report*)
- Team Evaluation Criteria

Letter Grade	Percentage	GPA
A	90-100	4.00
A-	85-89	3.67
B+	80-84	3.33
B	75-79	3.0
B-	70-74	2.67
C+	65-69	2.33
C	60-64	2.0
D	50-59	1.0
F	0-49	0.0

SIZING OF BOTH PLANES	26
PROGRESS REVIEWS (2)	10
THE AIRPLANE ITSELF	30
TABLE OF CONTENTS	3
TABLE OF SYMBOLS	3
OVERVIEW	12
DESCRIPTION	
Preliminary Sizing	15
Configuration Rationale	15
DRAWINGS	
Exterior	15
Interior	15
Table	3
REFINED WEIGHT ESTIMATE	

Content	
Format	
SENSITIVITY COEFs.	
(AAA Software)	
Content	
Format	
CG LOCATION	
Content	
Format	
MOMENTS OF INERTIA	
Components	
Table, Results	
DRAG-LOW SPEED	
Two Low Speed CDo's, Clean	
Content	12
Format	2
Low Speed ks	4
Weapons	4
Gear and Hook	3
Flaps and Slats	4
Dead Engine	
Trim Drag	
CL vs Alpha	
Content	8
Format	4
Graphs	4
DRAG-HIGH SPEED	
CDO (M)	
Content	12
Format	2
Graphs	1
k(M)	
Content	9
Format	2
Graphs	1
Polar Graphs	7
Component Tables	2
Summary Table	4
PERFORMANCE	
CC	

Rate of Climb	
Content	10
Format	2
Graphs	3
Climb Profile	
Content	7
Format	1
Graphs	1
V/TC and 1/TC	
Content	8
Format	2
Graphs	3
Range and Endurance	
Content	8
Format	1
Sustained n	
Content	5
Format	1
Graph	1
WC	
Rate of Climb	
Content	10
Format	2
Graphs	3
Climb Profile	
Content	7
Format	1
Graphs	1
V/TC and 1/TC	
Content	8
Format	2
Graphs	3
Design Mission Profile	
Content	8
Format	2
TO/L	
Approach Speed	4
TO Distance	6
Landing Distance	5
Critical Field Length	

Content/Format	15
Graphs	5
OEI Rate of Climb	
Content	
Format	
Graphs	
STABILITY	
Longitudinal	
Dimensionless Derivatives	
Content	
Format	
Results	
Content	
Format	
Lateral	
Dimensionless Derivatives	
Content	
Format	
Results	
Content	
Format	
OVERALL FORMAT	13
Pagination, Tabs, App., etc	
ORAL PRESENTATION	
TOTALS	380

Class Schedule

Week	Date	Lecture	Lab
1	XX	Introduction	Project selection and team member formation
2	XX	Concept Generation I	Project selection and team member formation
3	XX	Initial sizing and weight estimate.	Weekly Progress Report (reporting & discussion)
4	XX	Initial sizing and Layout.	Weekly Progress Report (reporting & discussion) & Proposal is due.
5	XX	Weight and balance.	Weekly Progress Report (reporting & discussion)
6	XX	Aerodynamic forces CC.	Weekly Progress Report (reporting & discussion)
7	XX	Aerodynamics forces WC.	Weekly Progress Report (reporting & discussion)
8	XX	Performance CC.	Weekly Progress Report (reporting & discussion)
9	XX	Engine selection	Weekly Progress Report (reporting & discussion)
10	XX	Globalization	Weekly Progress Report (reporting & discussion)
11	XX	Performance WC.	Weekly Progress Report (reporting & discussion)
12	XX	Take-off and landing forces.	Weekly Progress Report (reporting & discussion)
13	XX	Take-off and landing performance.	Weekly Progress Report (reporting & discussion)
14	XX	Ethics and Resume	Weekly Progress Report (reporting & discussion)
15	XX	Critical Design Review (Oral Presentation)	
Final Report is due on the day of the first class in the last week of classes by 5:00 PM			



SAN DIEGO STATE
UNIVERSITY

CIVE 220

Civil and Environmental Engineering Computer Applications
Geographic Information Systems

Course Syllabus – Proposed

PREREQUISITE: Credit in Mathematics 150 (Calculus I)
You must sign the form indicating that the prerequisite is satisfied. This will be verified by the CCEE department.

SCHEDULE:

	DAY	SECTION(S)	ROOM	TIME
LECTURE	W	ALL	GMCS-333	9:00 - 9:50 am
COMPUTER LAB	W	2	E-221	10:00 - 11:40 am
	W	3	E-221	2:00 - 3:40 pm
	Th	4	PS-231	9:00 - 10:40 am
	Th	1	E-301	11:00 am - 12:40 pm
	Th	5	E-301	2:00 - 3:40 pm

INSTRUCTOR:

Tammy Parsons, M.S.

E-mail: tparsons@mail.sdsu.edu

Office Hours: Wednesdays, 12:00 – 2:00 pm

ED-100G (Education Building)

TEXTBOOK:

- None required. Course notes will be used extensively in place of a required textbook.
- Course lecture notes will be posted weekly on Blackboard (after each lecture).

SOFTWARE:

- ArcGIS Desktop 10.4.1 (Education Edition) software with one-year license is available for all registered CIVE 220 students. Instructor will distribute access codes. This software only works on Windows platform.

HARDWARE:

- USB Flash Drive – must bring to every lab!

COURSE DESCRIPTION & OBJECTIVES:**Catalog Description**

“Geographic information systems (GIS), specialized civil engineering software, advanced problem solving.”

This course is one of two Foundations courses that you will take in the area of Social and Behavioral Sciences. Upon completing this area of Foundations, you will be able to: 1) explore and recognize basic terms, concepts, and domains of the social and behavioral sciences; 2) comprehend diverse theories and methods of the social and behavioral sciences; 3) identify human behavioral patterns across space and time and discuss their interrelatedness and distinctiveness; 4) enhance your understanding of the social world through the application of conceptual frameworks from the social and behavioral sciences to first-hand engagement with contemporary issues.

Course Content

The course covers the fundamentals and application of Geographic Information Systems (GIS). The course uses GIS software (ArcGIS) for solving civil engineering problems. A Course Outline is included at the end of the syllabus. Note that this schedule is SUBJECT TO CHANGE at the instructor’s discretion.

Instructional Methods

The course will be a combination of lectures and interactive computer instruction/lab. There will be in-class exercises, homework assignments, quizzes, and exams (Midterm & Final). Students may collaborate on homework assignments, but must submit their INDIVIDUAL WORK and be capable of performing all applicable components of each assignment. **Cheating and plagiarism will not be tolerated under any circumstances.** Please read the definitions of cheating and plagiarism from SDSU’s Senate Policies as well as the policies for enforcing academic and punitive sanctions (go to https://newscenter.sdsu.edu/universitysenate/files/06811-FNLpolicy_file_accessible_8_11_16.pdf and scroll to page 31).

Learning Objectives

This course is one of many that you will take towards your degree in Civil or Environmental Engineering. Each course emphasizes particular program outcomes, which are statements that describe what students are expected to know and be able to do by the time of graduation. Each course in the curriculum emphasizes particular aspects of the overall body of knowledge you are expected to acquire. Altogether, program outcomes are intended to provide a foundation for your career. Although other outcomes may be related to this class, this course has an emphasis on the following program outcomes:

Outcome 1: An ability to apply knowledge of mathematics, science, and engineering. (Assessed by Exams)

- a. Apply basic knowledge of geometry, calculus and physics to solve problems in Civil or Environmental Engineering.

Outcome 2: The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context. (Assessed by Homework)

- a. Use GIS (Geographic Information Systems) to display, manipulate and analyze spatial data relevant to Civil/Environmental Engineering.
- b. Use Global Positioning Systems (GPS) to obtain point locations and measure ground elevations.
- c. Use Excel to organize, analyze and display data.

Outcome 8: An ability to communicate effectively. (Assessed by Homework)

- a. Prepare reports that document problem statements, data analyses and results interpretations using written and graphical communications.

Outcome 9: An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice. (Assessed by Quizzes)

- a. Use GIS (Geographic Information Systems) to display, manipulate and analyze spatial data relevant to Civil/Environmental Engineering.
- b. Use Global Positioning Systems (GPS) to obtain point locations and measure ground elevations.
- c. Use Excel to organize, analyze and display data.

Outcome 13: An understanding of key concepts and problem-solving processes used in business, public policy, and public administration. (Assessed by Homework)

- a. Use GIS (Geographic Information Systems) to display, manipulate and analyze spatial data relevant to Civil/Environmental Engineering.
- b. Use Global Positioning Systems (GPS) to obtain point locations and measure ground elevations.
- c. Use Excel to organize, analyze and display data.

GE Goals**A. Goal 1: Explore and recognize basic terms, concepts and domains of the social and behavioral sciences.****Activity:**

Students are required to organize data into geographical maps that convey information about different areas where projects are developed. This provides students with important knowledge on how Geography and Engineering intersect and help each other. By developing these activities students gain an appreciation for and understanding about how socio-economic characteristics of specific geographic areas affect access to infrastructure (e.g., schools, hospital, roads, fire stations, libraries).

Throughout the course, students are required to structure data and queries that support solutions to engineering problems and the environment we live in.

Assessment:

Homework assignments, where students use the software to solve engineering problems aimed at understanding social and environmental characteristics of the sites where projects are built. This GE goal is closely related to ABET outcome 2, which requires that students be exposed to a broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context.

B. Goal 2: Comprehend diverse theories and methods of the social and behavioral sciences.**Activity:**

Lectures using examples related to using census data and demographics to support the need to develop specific infrastructure for communities. Use of GIS data to support the most cost-effective decisions for materials supply for a project.

Assessment:

Homework assignments and exam/quiz questions to interpret results and make decisions. This GE goal is closely related to what is required by ABET outcome 2, which requires that students be exposed to a broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context. Additionally, this GE goal is interconnected with additional ABET outcomes 9 and 13. Outcome 9 refers to preparing students to use the techniques, skills, and modern engineering tools necessary for engineering practice. Outcome 13 refers to having students to understand key concepts and problem-solving processes used in business, public policy, and public administration.

C. Goal 3: Identify human behavioral patterns across space and time and discuss their interrelatedness and distinctiveness.

Activity:

Lecture on addressing how GIS can be used to determine the zone of influence of existing services (e.g., library, schools, fire station). Discussion on how sustainability-related issues, urban density, and existing infrastructure should be viewed together to address infrastructure related problems. The activity will be focused on identifying human behavioral patterns across space and time while discussing their interrelatedness and distinctiveness. Additionally, students will be able to explore and recognize basic terms, concepts, and domains of the social and behavioral sciences to build on the activities related to Goal 1 while cultivating students' skills in reading, communication, computation, and use of technology. In this course, students are introduced to the fundamentals and application of Geographic Information Systems (GIS). The course uses GIS software (ArcGIS) for solving civil, construction, and environmental engineering problems.

Assessment:

Homework assignments. The homework will be graded considering the students' ability to address issues related to demographics, existing infrastructure (buildings and road access), and how they contribute to the long-term sustainability of the community. The activity related to this assignment aims at verifying students' ability to elevate the power of GIS-related tools to comprehend human behavioral patterns across space and time, which is an essential ability closely related to ABET outcome 9 (preparing students to use the techniques, skills, and modern engineering tools necessary for engineering practice).

D. Goal 4: Enhance understanding of the social world through the applications of conceptual frameworks from the social and behavioral sciences to first-hand engagement with contemporary issues.

Activity:

Homework requiring students to use GIS data (addressed in goals 1 through 3) to investigate the needs of a community regarding the maintenance of existing infrastructure or the construction of new infrastructure.

Assessment:

Homework graded based on the extent to which students incorporated existing data in the analysis and creative ways to use the data to visualize problems and propose solutions. This goal is closely related to ABET outcome 8 (ability to communicate effectively). Students will be required to use their technical ability related to the use of the ArcGIS software and demonstrate how data considered in the assignment should be effectively represented to support decisions. Their solutions should demonstrate an ability to use conceptual

frameworks from the social and behavioral sciences to address contemporary issues relevant to the civil, construction, and environmental engineering fields.

COURSE POLICIES AND GRADING:

General

You are expected to be prepared for class. This means completing all assignments and understanding lecture material before lab classes. You are responsible for everything contained in the lectures, lab exercises, homework assignments, handouts, and class announcements. Information supplementing or modifying information contained in this syllabus will be announced in class and posted on Blackboard. You are responsible for having a working understanding of the material contained in the prerequisite course. If this is not the case, it is your responsibility to remedy any deficiencies.

It is expected that you will conduct yourself in a courteous, professional, and ethical manner at all times.

Cell Phones and Computer Use

Cell phones must be SILENCED and PUT AWAY during class and exams. You will be excused from class or receive a “0” on an exam in progress if this policy is violated.

During the sessions in the computer lab, computer use is limited to class material. Browsing the web, checking e-mail, perusing social media, or doing computer work not related to the class is **NOT ALLOWED**. You will be asked to leave class if this policy is violated.

Obtaining a College Computer Account

SDSU maintains computer labs with PC’s with ArcGIS software in E-221, E-301, and PS-231. E-221 is a teaching lab and is not available to students outside of class hours. Students will be provided with a 6-digit door code to access PS-231.

You **MUST** have an engineering computer account to be enrolled in this course. To get a computer account, log on to the computers using the temporary student username (**student**) and password (**Fall2016**) on the **Engineering** domain. Fill out the screen that pops-up. Your username and password will be displayed on the screen and e-mailed to you within 72 hours. Sometimes the responses are sent to the junk email folder of your accounts.

All CIVE 220 students must have accounts.

Communication from the Instructor

The instructor will send e-mails with announcements and post announcements/addendums/corrections on Blackboard. Please check both regularly.

Homework

There will be weekly homework (HW) assigned in lab and due before the start of the next week’s lab. HW will be collected each week; however, not all homework will be graded. Rather, HW will be selected at random for grading. There will be **NO** late HW submissions accepted. If your HW is not submitted when due, you will receive a “0” if that homework is selected for grading. If you do not understand the homework, you are expected to see the instructor or TA in office hours for help. There will be quizzes given in lab throughout the semester. The quizzes will be timed assignments which are based on the previous 3-4 homework assignments. It is highly recommended that you complete and **understand** ALL homework assignments, so that you will be prepared for the timed quizzes.

Attendance

Attendance will be graded using the following rubric: students take a 1-question quiz on Blackboard during their lab section each week. The quiz is password protected and only open for a short time at the end of each lab. If students take the quiz then they get credit for attendance at that lab. The overall attendance grade for the semester is calculated as labs attended divided by total number of labs.

Students with Disabilities

If you are a student with a disability and believe you will need accommodations for this class, it is your responsibility to contact Student Disability Services at (619) 594-6473. To avoid any delay in the receipt of your accommodations, you should contact Student Disability Services as soon as possible. Please note that accommodations are not retroactive, and that accommodations based upon disability cannot be provided until you have presented your instructor with an accommodation letter from Student Disability Services. Your cooperation is appreciated.

Grading

Attendance	10%
Homework (3).....	10%
Quizzes (2).....	30%
Midterm Exams (2).....	30%
Final Exam	20%

Extra credit opportunities may be added at the instructor's discretion.

Grade Guidelines

Minimum %	Letter Grade	Minimum %	Letter Grade
93%	A	77%	C+
90%	A-	73%	C
87%	B+	70%	C-
83%	B	60%	D
80%	B-	0%	F

CIVIL ENGINEERING 220 COURSE OUTLINE (FALL 2016)

This syllabus is subject to change at the discretion of the instructor.

SEMESTER WEEK	DATE	TOPICS	LECTURE	LAB
1	31-Aug 1-Sep	Introduction to GIS	Lecture 1	Lab 1
2	7-Sep 8-Sep	Map Projections and Coordinate Systems	Lecture 2	Lab 2
3	14-Sep 15-Sep	GIS Data Types and Formats	Lecture 3	Lab 3
4	21-Sep 22-Sep	Creating GIS Data - GPS	Lecture 4	Lab 4
5	28-Sep 29-Sep	Quiz 1 in Lab	Midterm Review	Quiz 1
6	5-Oct 6-Oct	Exam 1 in Lab	No Lecture	Midterm Exam 1
7	12-Oct 13-Oct	Attribute Data	Lecture 5	Lab 5
8	19-Oct 20-Oct	Spatial and Attribute Data Queries	Lecture 6	Lab 6
9	26-Oct 27-Oct	Feature Data Analysis	Lecture 7	Lab 7
10	2-Nov 3-Nov	Quiz 2 in Lab	Midterm Review	Quiz 2
11	9-Nov 10-Nov	Exam 2 in Lab	No Lecture	Midterm Exam 2
12	16-Nov 17-Nov	Raster Data Analysis	Lecture 8	Lab 8
13	23-Nov 24-Nov	NO CLASSES (Thanksgiving)	NO CLASSES	NO CLASSES
14	30-Nov 1-Dec	Terrain Analysis (DEM Processing)	Lecture 9	Lab 9
15	7-Dec 8-Dec	Review in Lecture / Final Exam in Lab	Final Review	Final Exam

12-Sept last day to Add/Drop (11:59 pm deadline)

1. Specific Course Information

Course Name: Computer Programming Applications for Mechanical Engineers

Course Number: ME 202

Instructor:

TAs:

Software / Resources: Matlab + Simulink

Zybooks Introduction to Matlab Programming

TopHat: For in-class attendance and participation

Blackboard: For uploading functions and tracking grades

Meeting Time: M, W: 5:30-6:45pm

Meeting Place: SHW-11

Recitation: Fridays 11am-1pm in E-301

Schedule Number: 22013

Pre-requisites: ME101, Math 150, Math 151 (Concurrent)

2. Course description:

Principles of programming using Matlab. Syntax topics include data types, loops, control flow, arrays, and functions. Numerical Methods include covered include matrix operations, Gauss Reduction, Newton Raphson, curve fitting, interpolation, numerical differentiation and numerical integration. Application areas in mechanical engineering include finite element analysis, dynamic systems, graphical user interfaces and image analysis.

This course is one of two Foundations courses that you will take in the area of Social and Behavioral Sciences. Upon completing this area of Foundations, you will be able to: 1) explore and recognize basic terms, concepts, and domains of the social and behavioral sciences; 2) comprehend diverse theories and methods of the social and behavioral sciences; 3) identify human behavioral patterns across space and time and discuss their interrelatedness and distinctiveness; 4) enhance your understanding of the social world through the application of conceptual frameworks from the social and behavioral sciences to first-hand engagement with contemporary issues.

3. Contact with Instructor

Name:

e-mail:

Phone:

Office Hours:

4. Matlab Software

NOTE: I cannot provide support for installing Matlab on your computer.

You have four options for using MATLAB

1. Follow the instructions here:

<http://www-rohan.sdsu.edu/~download/matlab.html>

Note that you must be connected to the campus network to download Matlab.

2. Buy the student version from the University Bookstore (roughly \$110 including many additional toolboxes-- a really good deal)

3. Buy the student version of Matlab + Simulink via download from Mathworks. (\$100 but does not include any extra toolboxes.)

4. Use pre-installed Matlab in the Engineering/Library computer labs

5. Textbook: Programming in Matlab (zyBooks)

We will use an interactive, online textbook for this class

Sign up at zyBooks.com

Enter zyBook code SDSUME202NegusSpring2017

Click Subscribe

Make sure your first name, last name, and e-mail address are the same as they are in blackboard. (This is especially important if you have a hyphenated last-name.)

The cost to subscribe is \$57; any applicable returning student discounts will be applied automatically. The student subscriptions will be valid through 06/13/17.

I recommend you use your web browser to print each chapter as a PDF so you can access it after your subscription expires.

6. TopHat

We will be using the Top Hat (www.tophat.com) classroom response system in class. You will be able to submit answers to in-class questions using Apple or Android smartphones and tablets, laptops, or through text message.

You can visit the Top Hat Overview (<https://success.tophat.com/s/article/Student-Top-Hat-Overview-and-Getting-Started-Guide>) within the Top Hat Success Center which outlines how you will register for a Top Hat account, as well as providing a brief overview to get you up and running on the system.

An email invitation will be sent to you by email, but if don't receive this email, you can register by simply visiting our course website:

<https://app.tophat.com/e/623098>

Note: our Course Join Code is 623098

Top Hat will require a paid subscription, and a full breakdown of all subscription options available can be found here: www.tophat.com/pricing.

Should you require assistance with Top Hat at any time, due to the fact that they require specific user information to troubleshoot these issues, please contact their Support Team directly by way of email (support@tophat.com), the in app support button, or by calling 1-888-663-5491.

7. Objectives:

To learn how to implement numerical methods in Matlab to solve engineering problems.

8. Student Learning Outcomes (department level)

1. Apply knowledge of mathematics, science, and engineering.
2. Identify, formulate, and solve engineering problems.
3. Communicate effectively in professional settings.
4. Use the techniques, skills, and modern engineering tools necessary for engineering practice.
5. Have the ability to apply principles of engineering, basic science, and mathematics (including multivariate calculus and differential equations) to model, analyze, design, and realize physical systems, components or processes.

9. GE Goals

A. Goal 1: Explore and recognize basic terms, concepts and domains of the social and behavioral sciences.

Activity:

One of the important factors in today's society is the analogy between human-to-human and human-to-machine interfaces, which is situated in a crossroad between behavioral sciences, engineering, and design; to name a few. In this course, an emphasis is given to two important crucial aspects that arise from the interactions between humans and the computers, which are the readability and structure of descriptive codes and Human-Machine Interface (HMI). The latter is actually evolving to even a broader and more inclusive research area of Human-Computer Interface (HCI). These aspects are based on the concept of multimodality, where the HMI is responsive and adaptive. Overall, human interactions with computers require a deeper understanding of social and behavioral sciences terms, theories and concepts such as

Cognitive Theory, Activity Theory or Ethnomethodology. Throughout the course, students are required to write codes and design interfaces to solve engineering and mathematical problems. Lectures include topics on best practices in structuring codes for efficiency, effectiveness, and readability. The code readability is especially important in debugging and troubleshooting, which is also extensively discussed in lecture.

Assessment:

Homework assignments and project, where students compose multiple codes to solve engineering and mathematical problems.

B. Goal 2: Comprehend diverse theories and methods of the social and behavioral sciences.

Activity:

Lecture on the principles of design of graphical user's interfaces (GUI, type of HMI) with emphasis on human-machine interface. Exercises/demonstration of GUI design.

Assessment:

Homework assignments and project, where students compose computer codes with GUIs.

C. Goal 3: Identify human behavioral patterns across space and time and discuss their interrelatedness and distinctiveness.

Activity:

Lectures on the importance of creating flowcharts and documenting the codes (i.e., adding meaningful comments) to recognize the design-intent and logic in the algorithm. The design-intent and algorithm logic are connected to human cognitive behavior and its association with machine, to which an emphasis is given.

Assessment:

Homework assignments and project, where students compose multiple codes to solve engineering and mathematical problems.

D. Goal 4: Enhance understanding of the social world through the applications of conceptual frameworks from the social and behavioral sciences to first-hand engagement with contemporary issues.

Activity:

Term project that requires students to write a code and design interface, which requires integration concepts of code readability and HMI.

Assessment:

Project is graded based on the inclusion of these elements in the submitted project.

10. Assessment Policy

Assessment	Percent
HW	20%
Reading (zyBook Participation Activities)	10%
In class Quizzes	10%
Project	5 %
Exam 1	15 %
Exam 2	15 %
Final Exam	25 %
	100 %

Homework due dates and Policy

There will be 10 Homework assignments and one bonus homework totaling 220 points **but your maximum homework grade will be 200.**

- Homework is due by 11:59pm on the date posted on the Syllabus.
- Do not wait to the last minute, or you could have a submission problem.

- Homework solutions (along with examples used in class) will be available here: <https://1drv.ms/f/s!Av58GFPmylykdZ3OWMZGEYkZq9avg>
- You can dispute grades one week from receiving your score report.
 - For this you need to send an email at **me202.sdsu@gmail.com**.
 - The email needs to include your function and a memo (in a pdf document) explaining your claim.
- After the 1 week dispute period, you cannot dispute your grades anymore.

NOTES:

If a homework requires you to complete challenge activities in the zyBook, you need to have completed these by 11:59pm on the due date on the syllabus.

If a homework requires you to write and upload a function to Blackboard, you should treat it as if it is a deliverable for a client. The client could be internal to your company or an external customer. The deliverable (homework) is ONLY acceptable if it meets the specifications of the Application Programming Interface (the API). The API describes the function requirements: the name, the input arguments, and the output arguments. If your deliverable (homework) is to be acceptable, it MUST

Have the EXACT correct function and file name

Have the EXACT output requested

Function EXACTLY as requested.

Be delivered in EXACTLY the correct format (one m-file per function).

PROCEDURE:

- You submit a function. The function is checked by me to see if it produces the correct results (sometimes, within a tolerance).
- The grade is thus a combination of "all or nothing for each test case".
- To check if you are on the right track, I will provide test cases which will enable you to test your function. If it performs well, you know you are on the right track (no guarantee, this might be a coincidence, unlikely though)
- If it does not perform well, you know your function is not working.
- All is automated, so there is no room for error.
- Do NOT compress your m-files into a **zip** or **rar** file! Upload each m-file individually to Blackboard.
- Do NOT upload anything other than an m-file (e.g., *.m~, .asv).

zyBook Participation Activities

You will be required to complete all participation activities for the chapters assigned on the syllabus by the date assigned on the syllabus. For full credit, you must read the chapter and answer the participation questions correctly.

In class quizzes: TopHat

Experience has demonstrated that the best indicator of success in ME202 is regular class attendance. Therefore, I will take attendance by occasionally give quizzes using TopHat. This means you will need a cell-phone, smartphone or laptop for every class.

11. Grading Policy

Total Points	Letter Range
930.-1000.	A
900-929.	A-
870-899	B+
830-869	B
800-829	B-
770-799	C+
730-769	C
700-729	C-
670-699	D+
630-669	D
600-629	D-
0.-599	F

12. Students with disabilities

Students who need accommodation of their disabilities should contact the instructor, privately, to discuss specific accommodations for which they have received authorization. If a student needs accommodation due to a disability, but has not yet registered with Student Disability Services at (619) 594.6473 (Calpulli Center, Suite 3101). You must do this before making an appointment to see the instructor.

13. Confidentiality

Grades will be posted in strict compliance with University policy; they will not be disseminated before the close of the semester – do not ask for them.

14. Academic Dishonesty

I report all acts of cheating to your department and the Center for Student Rights and Responsibilities. The penalty to your grade is at my discretion, but will be severe in most cases.

15. Emailing the Instructor:

1. INCLUDE YOUR RED ID IN ALL EMAILS TO ME.
2. I know that many e-mails originate on phones, but please write in complete sentences. Please use correct grammar and punctuation.

16. Additional:

This is a big class and my focus is necessarily on the students who wish to learn. To that end:

1. Please do not come late; please do not leave early.
2. It is your obligation to review all course notes, text, PowerPoints, solutions, source codes and archives.
3. All exam dates are posted. A missed exam will be scored as a 0.0 unless there is an exceptional case. In order to discuss such a case, please provide proof BEFORE asking for any consideration (this includes hospital, doctor, funeral documents).
4. The class information stacks. Should you simply decide to copy the HW, you will likely fail the exams.
5. You control the grade you earn this class. DO NOT ASK ME TO RAISE YOUR GRADE AT THE END OF THE SEMESTER. The fairest grading scheme is one which is identical for everyone.
6. If you miss class you are to acquire the information yourself before asking me.
7. Incompletes are given ONLY for extreme circumstances. If you request one, you absolutely MUST show me the evidence WHEN you ask (and without my asking to see it).
8. I will send email to the address on Blackboard. If you want me to send email to a different address, you must change it on Blackboard. You must keep your inbox clean. If email bounces, it is not my responsibility to tell you.
9. It is not wise to do the HW at the last minute. I will provide no assistance on the night before a HW is due or the night before an exam.

Week	Class	Date	Objective	zyBook Chapters	HW Due this day
	01	01/18	Introduction to Matlab		
1	02	01/23	Variables	1, 2	
	03	01/25	Scripts / Functions	3	HW00
	Recitation	01/27			
2	04	01/30	Scripts / Functions		
	05	02/01	Video: 1D Arrays	4	HW01
	Recitation	02/03			
3	06	02/06	Video: 1D Arrays, Plotting	5	
	07	02/08	Video: 1D Array Applications	6	HW02
	Recitation	02/10			
4	08	02/13	1D Array Applications		
	09	02/15	2D Arrays	7	HW03
	Recitation	02/17			
5	10	02/20	2D Arrays Advanced	8	
	11	02/22	Branches	9	HW04
	Recitation	02/24			
6	12	02/27	Branches		
	13	03/01	Exam 1		
	Recitation	03/03			
7	14	03/06	Loops	10	
	15	03/08	Nested Loops		HW05
	Recitation	03/10			
8	16	03/13	Systems of Linear Equations		
	17	03/15	Systems of Linear Equations		HW06
	Recitation	03/17			
9	18	03/20	Root Finding: Bracketing		
	19	03/22	Root Finding: NR		HW07
	Recitation	03/24			
10		03/27	Spring Break		
		03/29	Spring Break		
	Recitation	03/31	No Recitation		
11	20	04/03	Systems of Nonlinear Equations		
	21	04/05	Strings and Custom Functions	11, 12	HW08
	Recitation	04/07			
12	22	04/10	Custom Functions / Review		
	23	04/12	Exam 2		
	Recitation	04/14			HW09
13	24	04/17	Symbolic Math	13	
	25	04/19	Cell Arrays and Structures	14	HW10
	Recitation	04/21			
14	26	04/24	Images	15	
	27	04/26	GUIs	16	HW11
	Recitation	04/28			
15	28	05/01	Simulink		
	29	05/03	Simulink / Review		Project
	Recitation	05/05	Final Exam SHW-11 from 3:30pm – 5:30pm		

ME 490A: Engineering Design: Senior Project I

Instructor: Dr. George Youssef
Office: E409
Email: gyoussef@mail.sdsu.edu
Office Hrs: T: 10:30 AM – 11:30 AM
Lecture & Lab: T 12:30 – 3:50 PM, Room WC-230

Textbooks:

Several handout that will be distributed in lecture and on BlackBoard.

References:

- David Ullman, David. The Mechanical Design Process. McGraw-Hill Higher Education. Fifth Edition.
- Clive I. Dym, Patrick Little, and Elizabeth Orwin. Engineering design: A project-based introduction. Wiley. Forth Edition.
- George Youssef and Michael Kabo. Machine Design: Redesigned. Proceedings of the 122st American Society of Engineering Education Annual Conference and Exposition. Seattle, Washington, 2015.
- George Youssef and Vladimir Arutyunov. An Approach to Integrate System Engineering into Senior Design. Proceedings of the 123st American Society of Engineering Education Annual Conference and Exposition. New Orleans, Louisiana, 2016. *In Press*.
- Horenstein, Mark N. Design Concepts for Engineers (ESource Series). Prentice-Hall, Inc., 2005.

Course description:

Course Catalog: Applications of engineering principles and design techniques to the designing, building, and testing of an engineering system. A single project is **completed** in this two-course sequence and is judged completed upon presentation of an oral and written report. In addition, issues related to ethics and engineering practice are discussed.

This is an Explorations course in Social and Behavioral Sciences. Completing this course will help you learn to do the following with greater depth: 1) explore and recognize basic terms, concepts, and domains of the social and behavioral sciences; 2) comprehend diverse theories and methods of the social and behavioral sciences; 3) Identify human behavioral patterns across space and time and discuss their interrelatedness and distinctiveness; 4) enhance your understanding of the social world through the application of conceptual frameworks from the social and behavioral sciences to first-hand engagement with contemporary issues.

Additional: This course is a study in the project-based approach to engineering design. Students will learn how to work effectively in teams and apply conceptual design methods and project management tools to a client-initiated design project. The students will participate in a “real-world” design project. At the end of ME490B (second part of this course), students are required to demonstrate the functionality of their project as set forth in the requirements document. If a project hardware does not meet requirements, it will be marked incomplete and will not receive full credit. Students must submit a complete product definition at the end of the senior design sequence. Projects that entail copyrights, trade secrets, or intellectual property are not fit for senior design since all design details must be discussed in with the instructor and peers.

Important Notice:

- 1- You will be administratively dropped, if you do not:
 - a. Have an updated Master Plan on record,

- b. Have completed all the course pre-requisites, and
 - c. Concurrently enrolled in all the course co-requisites.
- 2- Due to the size of the class and to maintain the quality and uphold the standards, major milestone presentations and updates will require extending class time to allow everyone enough time. Please plan accordingly since attending the entire event is mandatory.

Prerequisites:

ME304, ME310, 314, ME452

Student learning outcomes:

To apply engineering principles and design techniques to the designing, construction, testing evaluation and optimization of an engineering system.

Program outcomes:

- (1) An ability to apply knowledge of mathematics, science, and engineering.
- (2) An ability to design and conduct experiments, as well as analyze and interpret data.
- (3) An ability to design a system, component, or process to meet desired needs.
- (4) An ability to function on multi-disciplinary teams.
- (5) An ability to identify, formulate, and solve engineering problems.
- (6) An understanding of professional and ethical responsibility.
- (7) An ability to communicate effectively.
- (8) The broad education necessary to understand the impact of engineering solution in a global and societal context.
- (9) A recognition of the need for an ability to engage in life-long learning.
- (10) A knowledge of contemporary engineering issues.
- (11) An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.
- (12) Have the ability to apply principles of engineering, basic science, and mathematics (including multivariate calculus and differential equations) to model, analyze, design, and realize physical systems, components or processes.
- (13) The ability to work professionally in both thermal or mechanical systems areas.

General Education Goals**A. Goal 1: Explore and recognize basic terms, concepts and domains of the social and behavioral sciences.****Activity:**

Social and behavioral sciences encompass a broad range of interdisciplinary sciences to enhance human interaction within the society. There are several topics that are discussed in ME490A lectures and applied during the laboratory session, which motivate the students to explore different domains of social and behavioral sciences. These topics include:

- 1- Strategic Decision Making: in ME490A students are introduced to a systematic approach to decision making, which is widely used in the engineering profession but has its roots in the social and behavioral science domains. Students create design decision matrices to evaluate and select the most viable solution.
- 2- Engineering Ethics: As delineated in the syllabus, one lecture is dedicated to exposing students to important topics of ethics, the implications of ethical dilemmas, and theories to deal with ethical problems. These concepts include: moral autonomy, code of ethics, moral and ethical theories (Utilitarianism, Duty Ethics and Right Ethics, Virtue Ethics), as well as professional ethics. In general, ethics is rooted in social and behavioral science domain of civics.

- 3- Management: in ME 490A students are mandated to work in groups (5-7 students) to gain experience in project management, resources management (human, technical, and economic), and conflict resolution. Students attain hands-on experience in these topics as they progress in their year-long senior design project.

Assessment:

The aforementioned activities are regularly evaluated during Weekly Progress Reports, Preliminary Design Review, Critical Design Review and Final Report.

B. Goal 2: Comprehend diverse theories and methods of the social and behavioral sciences.

Activity:

Lecture on engineering ethics as well as on moral and ethical theories (see Goal 1 for explanation and rational). Multiple professional ethical dilemmas are presented

Assessment:

Interactive class discussions about different dilemmas to assess the student's grasp of such theories in real-world situations.

C. Goal 3: Identify human behavioral patterns across space and time and discuss their interrelatedness and distinctiveness.

Activity:

Lecture on project management and teamwork is presented and discussed with students with an emphasis on human resources (see Goal 1 for explanation and rational).

Assessment:

Students submit team structure, which is evaluated interactively with them to provide feedback about the rational while discussing alternatives to better manage the available human resources.

D. Goal 4: Enhance understanding of the social world through the applications of conceptual frameworks from the social and behavioral sciences to first-hand engagement with contemporary issues.

Activity:

At the onset of the senior design course, students receive a requirement document that describes the problem, need or challenge. Students meet in a group to understand the requirements from technical, social, and environmental perspectives.

Assessment:

Students compile a list of questions that are targeted towards the project sponsor to gain a better understanding of the design constraints. The questions bank is discussed interactively with each group to provide feedback before meeting with sponsors. Students then meet with sponsor to get additional understanding and feedback.

Grading policy:

I run the senior design as 'task-based project', which means every team member is expected to contribute to each task and milestone. This mirrors the merit-based review that you will encounter once you join industry. Your grade is based on: Team progress report and presentation = 25%; Preliminary Design Review = 25%; Critical Design Review = 25%; Final report = 25%; and Team Evaluation matrix (see example on BlackBoard).

Letter Grade	Percentage	GPA
A	93-100	4.00
A-	90-92	3.67
B+	87-89	3.33
B	83-86	3.0
B-	80-82	2.67

C+	77-79	2.33
C	70-76	2.0
D	60-69	1.0
F	0-59	0.0

Email Etiquette:

If you send an email to me, or any professor, you must:

- 1- Start the email with greeting line: “Dear Dr. Youssef,” or “Hi Dr. Youssef,” or “Good morning Dr. Youssef.”
- 2- Write complete sentences in the email body, no abbreviation and no text message language will be accepted.
- 3- Be concise and be brief.
- 4- Never say: “I expect to hear back from you soon,” or “please answer as soon as possible.”
- 5- End your email with: “Thank you,” and your name.

If you don’t follow these guideline, I will not respond to your emails.

Rules of Order:

- Once the lecture starts, everyone must be quiet and follow these rules.
- No shouting the answers, questions, or concerns.
- Never speak without permission or cut someone else that already speaking.
- Listen to understand.
- If you have questions or concerns, please raise your hand until I acknowledge you. When I allow you to speak, please be brief and formulate your questions or concerns by using the most appropriate technical terminology. If you do not fully understand the meaning of a term, do not use it. Instead, come to office hours and discuss it with me.

Academic Integrity:

Ideas and learning form the core of the academic community. In all centers of education, learning is valued and honored. No learning institution can thrive if its members counterfeit their achievement and seek to establish an unfair advantage over their fellow students. The Academic Integrity is designed to foster a fair and impartial set of standards. All students are required to adhere to these standards. Any dishonest act such as copying, plagiarism, lying, unauthorized collaboration, alteration of records, bribery, and misrepresentation for the purpose of enhancing one’s academic standing results in a failing grade for the entire course and will be reported to the College as well as the Dean of Students.

In-class Meeting Topics:

- 1- Concept generation: Engineering Design Process, Design Matrix, Systems Engineering Approach, Solid Modeling, Load Path.
- 2- Concept evaluation: Machine Design Review, Finite Element Analysis, Manufacturing Processes, MS Excel (goal-seek, spreadsheet in design).
- 3- Actuators, sensors and controllers
- 4- Measurements: Types of Errors, Error Estimation, Propagation of Error
- 5- General topics: Engineering Ethics, Professional Resume

Schedule:

Week	Date	Lecture	Lab
1	1/24	Introduction	Project selection and team member formation
2	1/31	Project Management	Project selection and team member formation
3	2/7	Concept Generation I	Weekly Progress Report (reporting & discussion)
4	2/14	Concept Generation I	Weekly Progress Report (reporting & discussion)

5	2/21	Concept Evaluation II	Weekly Progress Report (reporting & discussion)
6	2/28	Concept Evaluation II	Weekly Progress Report (reporting & discussion)
7	3/7	Concept Evaluation III	Weekly Progress Report (reporting & discussion)
8	3/14	Actuators	Weekly Progress Report (reporting & discussion)
9	3/21	Preliminary Design Review (Presentation)	
10	3/28	No class – Spring Break	
11	4/4	Sensors	Weekly Progress Report (reporting & discussion)
12	4/11	Controllers	Weekly Progress Report (reporting & discussion)
13	4/18	Measurements	Weekly Progress Report (reporting & discussion)
14	4/25	Ethics and Resume	Weekly Progress Report (reporting & discussion)
15	5/2	Critical Design Review (Presentation)	
Final Report is due on 5/11/2017 by 4:30pm submitted to my mailbox in the ME department office			

San Diego State University Sense of the Senate Resolution Calling for the Immediate Reinstatement of Dr. Joanna Brooks as AVP of Faculty Advancement

1. WHEREAS: Dr. Joanna Brooks has proven to be an exceptional administrator, performing exemplary work and demonstrating core principles and values that allowed her to build much-needed trust with all levels of faculty as well as to provide a bridge between faculty and upper administration; and
2. WHEREAS: Dr. Brooks has exemplified shared governance and honored the essential role of faculty in leading and servicing the mission of the university; and
3. WHEREAS: The Office of Faculty Affairs was renamed the Office of Faculty Advancement under the leadership of Dr. Brooks, reflecting a corresponding shift in the focus of the office to supporting and advocating for faculty, providing important attention to the faculty during a time when much political and cultural uncertainty exists at the national level; and
4. WHEREAS: The most important task of the university is the hiring and retention of faculty, and, under Dr. Brooks leadership, the Office of Faculty Advancement has initiated numerous reforms to strengthen the University's ability to recruit and retain a diverse faculty body of the highest quality, including the Building on Inclusive Excellence hiring program to support departments and schools in their efforts to recruit outstanding and diverse faculty, and initiatives to achieve equity for women and increase the number of underrepresented faculty in STEM fields; and
5. WHEREAS: Dr. Brooks has demonstrated excellent leadership of the Strategic Plan's working group focused on the Recruitment and Retention of Underrepresented Faculty (RRUF); and
6. WHEREAS: Dr. Brooks has implemented new guidelines for improving spousal accommodations for new faculty; and
7. WHEREAS: Dr. Brooks has a keen understanding of the intricate details and overall intent of the Collective Bargaining Agreement (CBA); and
8. WHEREAS: Under Dr. Brooks's leadership, the Office of Faculty Advancement has provided long-overdue attention to procedures for evaluating temporary faculty; and
9. WHEREAS: Under Dr. Brooks's leadership, the RTP process has been improved and brought into the 21st century through the introduction of Interfolio; and
10. WHEREAS: Under Dr. Brooks's leadership, the timeline of the RTP process for tenure-track faculty has been adjusted to be consistent with that of comparable and aspirational institutions, thus reducing stress on junior faculty, reducing workloads for reviewers, and encouraging better mentoring for greater faculty success; and
11. WHEREAS: Under Dr. Brooks's leadership, the Office of Faculty Advancement has initiated a series of new and effective workshops for department chairs and school directors; and
12. WHEREAS: The timing of the non-retention of Dr. Brooks has caused much confusion among faculty seeking promotion and created an unstable environment for junior faculty; and

13. WHEREAS: The non-retention of Dr. Brooks jeopardizes ongoing efforts and initiatives to promote equity, diversity, and representation in academic units; and
14. WHEREAS: The non-retention of Dr. Brooks has further and severely damaged faculty morale; and
15. WHEREAS: The decision not to retain Dr. Brooks threatens her career as an academic administrator; be it therefore
16. RESOLVED: That it is the sense of the San Diego State University Senate that Dr. Joanna Brooks be immediately reinstated as Associate Vice President for Faculty Advancement.

TO: Senate

FROM: Nola Butler-Byrd, Bill Eadie, Cezar Ornatowski
Academic Senate, CSU

DATE: October 3, 2017

SUBJECT: Information: ASCSU Report

State and CSU Budget (position update from the Legislative Analyst's Office)

Christian Osmena from the LAO stated that the CSU can expect base a 3 percent base budget increase. The LAO will look at what campuses are doing with the Graduation Initiative this Fall. Ryan Storm, AVC for Budget at the Chancellor's Office anticipates continued economic growth until 2021, with state revenues going up, which provides an opportunity to advocate for more funding to the CSU. Still, for 2018-19 we'll see a drop of \$50 mil in state investment in the CSU. Raising tuition will be considered again as an option.

DACA

Legislative Leaders and the Governor have agreed to provide \$30 million in assistance to Dreamers in response to President Trump's recent decision to rescind the Deferred Action for Childhood Arrivals program. "We will not let one man with xenophobic tendencies undercut years of progress we have made in California to integrate these young adults into our society and economy," said Senator President pro Tempore Kevin de León (D-Los Angeles). "California is their home and they are our future." Added Assembly Speaker Anthony Rendon (D-Lakewood): "The new funding for DACA services we are adding to the budget will provide answers and help young Californians stay in the only country they've ever known. Donald Trump may love chaos. These kids don't deserve it."

The financial support for DACA recipients will come from \$20 million in additional funding for immigration legal services under the One California program. This new funding will be specifically targeted to assist DACA recipients. An additional \$10 million in financial aid for Dreamers will be broken down as follows:

- \$7 million for California Community College Students;
- \$2 million for California State University students via the Dream Loan Program;
- \$1 million for University of California students via the Dream Loan Program.

EO 1100 and EO 1110

Executive Orders EO 1100 (general education) and EO 1110 (remediation) dominated much of the discussion in the standing committees and in the plenary (see resolution AS-3304-17/FGA/AA/APEP On the Development and Implementation

of Executive Orders 1100 and 1110 below). After extensive and animated discussion, the ASCSU decided to call for the CO to delay implementation of EO 1100 and EO 1110 until Fall 2019 and to engage meanwhile in a full shared governance process to revise the EOs to address issues they present to campuses.

Resolutions

At the September 13-15, 2017 ASCSU Plenary Meeting, four resolutions were adopted:

AS-3302-17/EX Commendation for Professor Emeritus Leonard Mathy, First Academic Senate CSU Chair (1963-64); Passed August 6, 2017

AS-3303-17/FGA Concerning the Pending Revocation of the Deferred Action for Childhood Arrivals (DACA)

Asserts ASCSU support of undocumented students, including students currently protected by AB 540 and DACA.

AS-3304-17/FGA/AA/APEP On the Development and Implementation of Executive Orders 1100 and 1110

Calls for a delay in the implementation of EO 1100 and EO 1110 until Fall 2019; requests that the Chancellor's Office work with campuses to develop an analysis of the costs of modifying the General Education portion of the curriculum, focusing on resource allocation mechanisms on the campuses and the unintended likely decimation of programs (such as ethnic studies) resulting from implementation of the EOs; requests that the Chancellor's Office ensure that multiple measures assess foundational quantitative reasoning proficiency; and requests that the Chancellor's Office collaborate with the ASCSU in developing a plan for monitoring the efficacy of the changes in General Education curriculum, and that the details of this plan be communicated to campus stakeholders early enough to be considered in campus curriculum planning.

AS-3306-17/APEP/FGA Support for AB-19 (2017) Community Colleges: California College Promise

Urges Governor Brown to approve AB-19 (2017) Community Colleges: California College Promise

One resolution received first reading:

AS-3308-17/APEP Standards for Quantitative Reasoning

Expresses concerns over the treatment of QR foundational proficiency in EO 1100 (Revised) and urges adoption of several recommendations from the report of the QR Task Force.

Additional Information

Copies of these and other resolutions may be found at <http://www.calstate.edu/AcadSen/Records/Resolutions/>. Faculty are encouraged to provide feedback on the above resolutions as well as on any other matters of potential concern to the CSU Academic Senate to the SDSU academic senators Nola Butler-Bird (nbutler@mail.sdsu.edu), Bill Eadie (weadie@mail.sdsu.edu), and Cezar Ornatowski (ornat@mail.sdsu.edu).

The ASCSU website (<http://www.calstate.edu/AcadSen/?source=homepage>) includes committee information, approved agendas/minutes, reports, resolutions, and current senator contact information.

Faculty-to-Faculty, the ASCSU Newsletter, is published approximately two weeks after each plenary. It includes ASCSU chair's report, committee reports, invited articles on current events, and committee recommendations. To have the newsletter delivered automatically via email, subscribe at <http://www.calstate.edu/AcadSen/Newsletter/>

To: Senate

From: Charles Toombs, Chapter President, CFA

Date: 27 September 2017

Re: Information Item

CFA Report:

Bargaining Update

Please statement below from CFA President, Jennifer Eagan:

September 26, 2017

Dear Colleagues,

CFA and CSU management have reached a tentative agreement on a two-year extension of the current contract. Upon the unanimous recommendation of CFA's Bargaining Team, the California Faculty Association's Board of Directors has voted unanimously to send the tentative agreement to a vote of the membership.

The tentative agreement includes a total of 6% in salary increases over the course of the two-year extension:

A 3.5% General Salary Increase effective November 1, 2018 for all faculty on active pay status or on leave.

A 2.5% General Salary Increase effective July 1, 2019 for all faculty on active pay status or on leave.

Additional provisions of the tentative agreement include:

Our benefits will be maintained with current contract language. This includes healthcare, pension, retiree healthcare, and even parking. They stay in place as they are, and our employee contributions will not increase.

The current contract will be extended to June 30, 2020.

The Reduction in Instructional Assignments for New Probationary Faculty, secured in 2014 and scheduled to expire on June 30, 2018, will be extended to June 30, 2020.

The Assigned Time for Exceptional Levels of Service to Students, secured in 2014 and scheduled to expire on June 30, 2018, will be extended to June 30, 2020.

CFA and CSU management agree to form a joint working group to consider changes to the contract provisions on Intellectual Property and Academic Freedom. No changes will be made to the agreement unless the parties reach agreement on both issues.

CFA and CSU management will form a joint working group to review salary structure issues during the period of the contract extension.

CFA and CSU management agree to issue a joint statement expressing our commitment to work together to secure the funding that our public university needs to fulfill its mission under the California Master Plan.

This tentative agreement extending the contract is the result of the fierce and smart activism on the part of the faculty during the Fight for Five in 2016. These continued gains show the long-term effects of the work faculty have done to advocate for quality education for our students and decent salaries and benefits for ourselves and our families.

This contract extension provides all CSU faculty with a salary increase that keeps up with inflation, protects our benefits with no takeaways, preserves recent gains on workload as well as other provisions in our current contract, such as sabbatical leave and FERP.

The proposed working groups will allow for labor and management to discuss the critically important issues of salary structure, academic freedom, and intellectual property during a time of labor peace and apart from the atmosphere of a contract fight. In addition to protecting the fundamental academic rights of faculty members, CFA will attempt to work with CSU management to find long-term solutions to our broken salary structure that has resulted in stubborn inequities in pay, range, and rank.

For information about the tentative agreement, including answers to frequently asked questions, please go to calfac.org. Information about the voting process will be included in subsequent email.

Finally, keep in mind that CFA members, and only CFA members, will vote on ratification of this tentative agreement. The contract will be ratified if 50% plus one of the members voting approve. A strong showing in voting expresses the importance we place on the issues that affect our careers, our working lives, and the university itself.

If you or a faculty colleague you know is not a CFA member, we urge you to join CFA so that you can participate in this vote. If you are uncertain whether you are a member, contact your campus CFA Chapter, or simply fill out a CFA Membership Application form online or in print.

We thank every one of you who has worked so hard to secure this excellent contract. Our work is not over. We have a profession to defend and a great public university system to preserve. We invite you to join us in the next steps.

In Union,

Jennifer Eagan, CFA President, on behalf of the CFA Bargaining Team and Board of Directors

CFA Contact Information

Please feel free to contact our campus California Faculty Association office at any time if we can provide assistance, whether on a contract rights issue or other matter. Our campus CFA chapter has a Faculty Rights Committee, composed of faculty volunteers, and we are available to talk with faculty colleagues about individual situations and assist in resolving issues. We can be reached at cfa@mail.sdsu.edu or x42775.

To: The Senate

From: Jennifer Imazeki, Chair, Faculty Affairs Committee

Date: September 2017

Subj: Information Item

State of the Faculty 2017

Each year, the Office of Academic Affairs - Faculty Advancement provides the Senate Committee on Faculty Affairs with faculty census data for recent years. This report summarizes and assesses the most recent data to provide an overview of the current state of the faculty. It also includes specific recommendations for the Senate and SDSU administration based on our assessment of the data. The complete data are available on the Faculty Advancement website at http://fa.sdsu.edu/_resources/files/data/Faculty%20Senate%20Report%20Spring%202017.pdf.

This report focuses on overall faculty issues, including faculty headcounts, tenure density and student-faculty ratios. Although we include discussion of some diversity concerns, a separate report by the Diversity, Equity & Outreach Committee also uses the Office of Faculty Advancement data and data from other sources to address diversity issues in much more detail.

The Committee thanks the Office of Academic Affairs - Faculty Advancement and Associate Vice President for Faculty Advancement, Joanna Brooks, for their help in supplying the necessary data.

Summary of recommendations:

- The University should begin thinking about how we are going to fund more faculty lines once the Student Success Fee is fully implemented;
- The University should continue the work it has already begun to address workload inequities and promote a more welcoming campus climate, including supporting clear and consistent mentoring towards tenure and promotion;
- The University should continue its commitment to the Building on Inclusive Excellence hiring program and we strongly support all of the recommendations to strengthen the program made by the Recruitment and Retention of Underrepresented Faculty Working Group;
- A review of current practices around partner hires, both at SDSU and at comparable/aspirational institutions;
- A review of the University's leave policies with a focus on creating policies that are more supportive of new parents;

- Any discussions of tenure density, and particularly hiring in order to increase tenure density, should pay attention to differences in student-to-all faculty ratios versus student-to-tenure-track faculty ratios, and to variations in both SFR measures across colleges.

In addition, the Committee has identified numerous areas where additional data for future analyses would be useful; these are detailed throughout the report.

Overview

As of Spring 2017, San Diego State’s instructional ranks include 781 tenured and tenure-track (TT) faculty¹, 904 lecturers, 589 Graduate Teaching Associates and 683 Instructional Student Assistants. Each year, faculty spend 503,301 hours physically present with students in classrooms, providing the primary contact that students have the University.

Hiring and Retention

The Student Success Fee led to a marked increase in searches in 2013 and for the years since, with a corresponding increase in the number of hires (see Table 1).

Table 1.

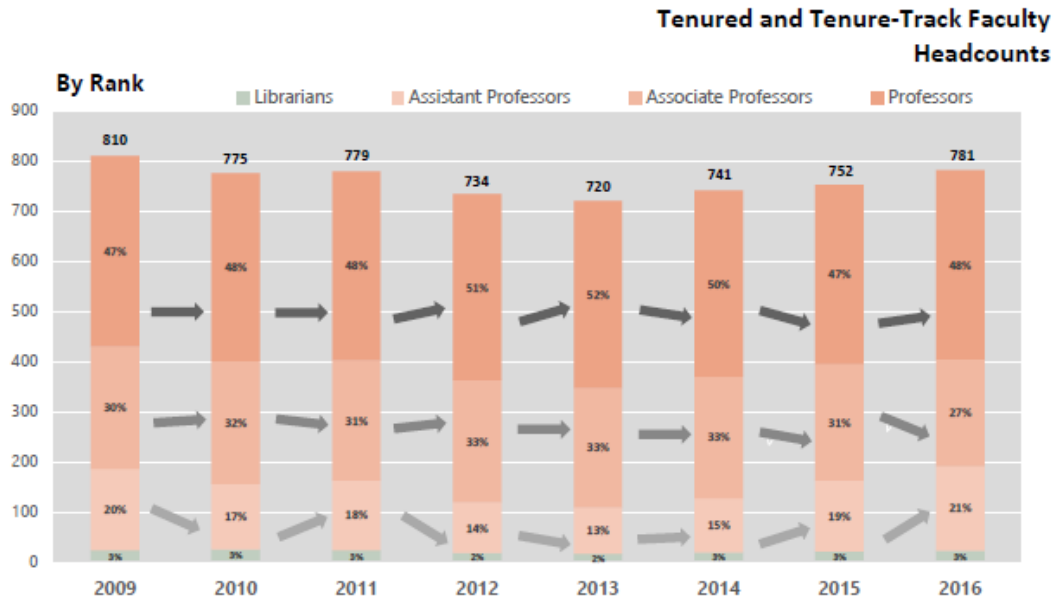
	2013-2014		2014-2015		2015-2016	
	Total:	%	Total:	%	Total:	%
Open Positions:	76		69		72	
Offers Made:	67	88%	61	88%	61	85%
Positions Filled:	61	80%	55	80%	53	74%
Positions Filled with Top Candidate (As a % of Positions Filled):	50	82%	49	80%	38	72%
First Offers Declined (As a % of Total Offers):	17	25%	12	20%	23	38%
First Offers Declined due to better Offer Elsewhere (As a % of Total Offer):	15	22%	6	10%	19	31%

Reporting Date: November 2016
Data Source: CSU Recruitment and Retention Survey

This increase in hiring has helped overall TT levels rebound from the drop seen in the wake of the Great Recession and, not surprisingly, the percentage of assistant professors has been climbing. However, we are still below 2009 overall TT levels [see Graph 1].

¹ Includes librarians but not SSPARS (Student Services Professional, Academic-Related Employees) or faculty serving as administrators (MPP).

Graph 1.



This is due, in part, to the number of separations each year [see Graph 2]. Although the University is planning for a large number of hires over the next two years, we can also expect some offsetting retirements and other separations so it is unclear whether the overall impact of the Student Success Fee will be enough to return us to pre-Recession levels. **We recommend that the University begin thinking about how we are going to fund more faculty lines once SSF is fully implemented.**

Graph 2.



Sample includes Assistant Professors, Associate Professors, Professors, and Librarians with status Tenure-Track, Tenured, or FERP. SSPARs and MPPs excluded.
Reporting Date: March 2017
Data Source: FIN

Although the majority of separations are retirements, we lose a handful of faculty each year to resignations or denial of tenure or reappointment². For example, in 2015-16, 12 TT faculty members resigned, 1.4% of all TT faculty, slightly below the norm for a large campus. Reasons for leaving include a number of factors, not just salary, but most concerning are exit interview references to campus climate and equity, as well as partner hire issues. Given the high costs associated with replacing faculty, **we recommend the University continue the work it has already begun to address workload inequities and promote a more welcoming campus climate, including supporting clear and consistent mentoring towards tenure and promotion. We also recommend that the University undertake a review of current practices around partner hires, both at SDSU and at comparable/aspirational institutions.**

Tenure Density

One reason to be concerned about progress in overall levels of TT faculty is that San Diego State, and the CSU more generally, has a stated goal of 75% tenure density (i.e., the percentage of FTEF comprised of tenured or tenure-track faculty). Now at 63%, we are currently well below that level, although it is worth noting that there is significant variation across the colleges, with the Sciences and Engineering at or above the 75% threshold [see Table 2].

Table 2.

	TT FTEF	Lecturer FTEF	FTES	Tenure Density	Overall SFR	TT SFR
A&L	173.0	127.4	8,173	58%	27.2	47.2
Business	68.5	34.5	3,200	67%	31.1	46.7
Education	65.5	53.2	2,005	55%	16.9	30.6
Engineering	57.0	18.6	1,835	75%	24.3	32.2
HHS	86.5	69.8	3,004	55%	19.2	34.7
PSFA	103.0	66.0	3,808	61%	22.5	37.0
Sciences	158.5	38.1	6,087	81%	31.0	38.4
IVC	15.0	23.3	647	39%	16.9	43.1
TOTAL	727.00	430.79	28,757	63%	24.8	39.6

In advocating for increased tenure density, it is important not to diminish the contributions of lecturers. For example, there is no evidence that either TT or non-TT instructors are inherently better teachers and lecturers undoubtedly provide instruction for highly-needed courses.

² A summary of promotion data for 2015 and 2016 is available on the Faculty Advancement website at http://fa.sdsu.edu/facultyadvancement/files/07411-Summary_of_Promotions_2015-2016.pdf.

However, TT faculty typically have service responsibilities that lecturers do not³. The rationale for increasing the number of TT faculty is succinctly captured by a clause in [Assembly Concurrent Resolution \(ASR\) 73 \(Strom -Martin 2001\)](#):

“While the assigned workload of faculty members in tenure and tenure-track appointments includes duties related to student advising, professional development, and the design of curricula, the assigned workload of faculty members in temporary appointments generally does not include those duties.”

And from the [CSU's response to ACR 73](#):

“Lecturers play an important role in the education of CSU students. However, lecturer faculty members generally do not serve as academic advisors and generally do not participate on university committees. Thus as the proportion of the permanent (tenured/tenure-track) faculty declines, the weight of these non-teaching duties falls upon fewer permanent faculty with negative implications for educational quality.”

Student-Faculty ratios

One way to see the impact of tenure density is to look at student-faculty ratios (SFR). At 25:1, the overall student-faculty ratio for the University is tied for its lowest level in several years; however, the student-TT faculty ratio is closer to 40:1. Variation across colleges in either SFR measure also highlight the importance of instructional context for thinking about tenure density. For example, Education and HHS have relatively low tenure density but they also have the lowest SFRs. These are also colleges with high proportions of graduate students; we do not have the data to investigate SFRs for undergraduate and graduate populations separately, although that would be useful data to have in the future. **We recommend that any discussions of tenure density, and particularly hiring in order to increase tenure density, keep these cross-campus variations in mind.**

- Data request: Counts of FTEs for the University as a whole, over time (similar to what is provided for the individual colleges)
- Data request: What does SFR look like by gender? Graduate/undergraduate?

Diversity

Gender

Overall, TT faculty remain majority male (59% male, 41% female), due to gender disparities at the advanced ranks. In 2016-17, the University achieved gender equity among Assistant Professors but the male-to-female ratio increases at each subsequent rank (54/46 for Associate Professors and 66/34 for Full Professors). There is also significant variation across the colleges, with Sciences (71/29), Engineering (90/10) and Business Administration (68/32) having particularly large majorities of men; on the flip side, Health and Human Services (42/58), Education (31/69) and the Library (39/61) have notable majorities of women.

³ Even this statement should be qualified: there are several departments where lecturers serve as advisors and engage in other service. However, these situations almost always involve full-time lecturers, which comprise only 16.6% (150 people) of all lecturers.

The gender gap at advanced ranks is due partly to past hiring trends but also retention. As mentioned earlier, only a small percentage of TT faculty resign in any given year; however, those that do are disproportionately female. This underscores the need for stronger measures to retain and support female faculty.

One potential concern is whether, given the larger gender disparities at Full, if men are over-represented on RTP committees. If possible, the Committee would like to get the gender breakdown of RTP committees at all levels. Also, in future years, the Committee would like to get more detailed data on promotions and how long and why faculty remain at the rank of associate. It is possible that once women have reached the Associate level, they take longer to reach Full because of family leave and associated responsibilities. **We recommend a review of the University's leave policies with a focus on creating policies that are more supportive of new parents.**

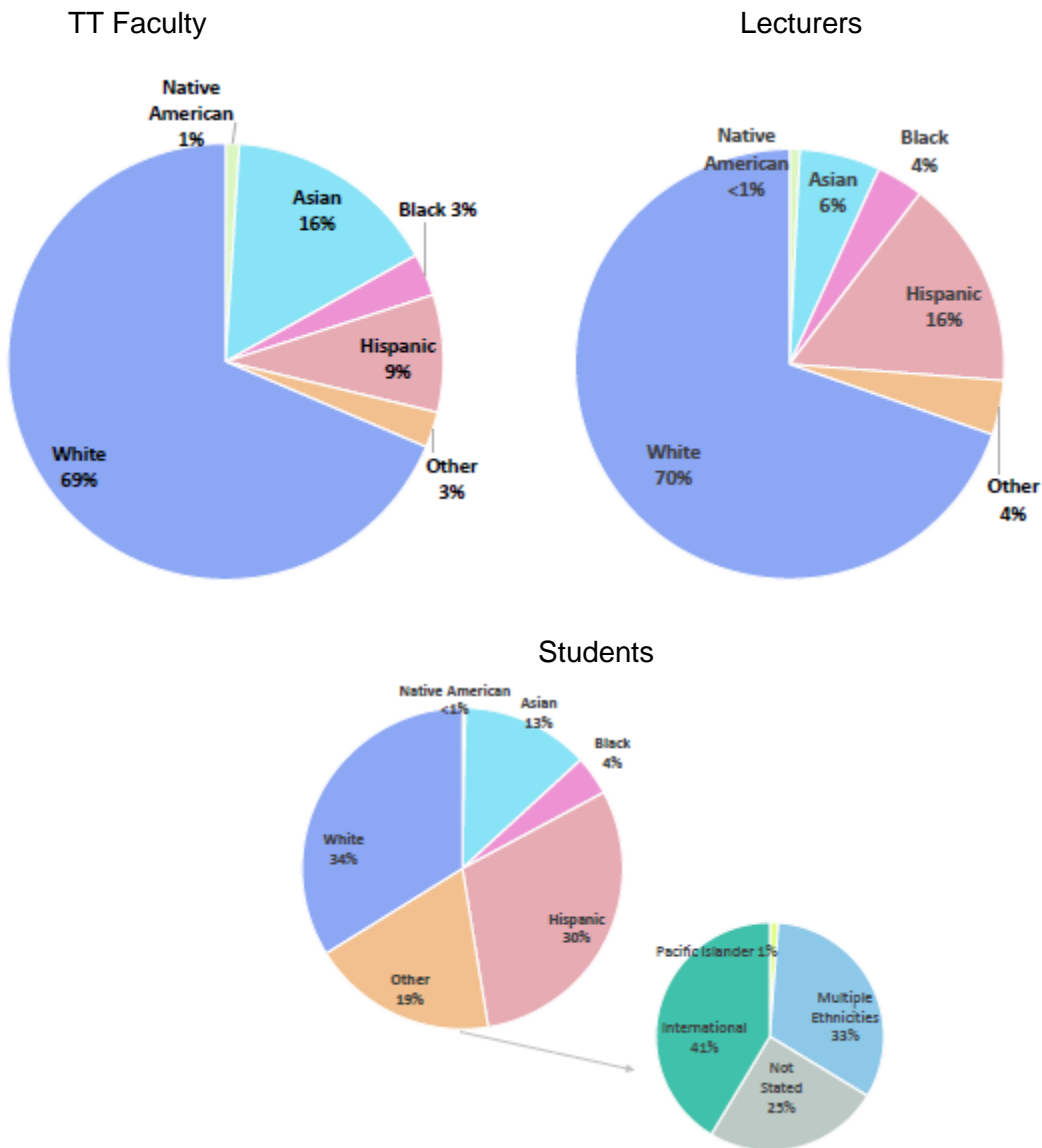
- Data request: How many men/women go up for promotion from associate to full and what percentage are actually promoted
- Data request: Average length of time that associate professors have remained at that rank or percentage that have been in rank for over 7 years, broken down by gender
- Data request: Gender breakdown of RTP committees
- Data request: How many men/women take parental leave and at what stage of their careers do they take it?

Ethnicity

The instructional faculty, both TT and lecturers, at San Diego State is overwhelmingly white. The disparity between faculty diversity and student diversity is striking (see Figure 1). This has important implications student success and raises concerns about faculty of color facing increased service workloads. For example, the [CSU Task Force on the Advancement of Ethnic Studies](#) points out, "students of color are very likely to seek ethnic studies faculty members for that advising and mentoring regardless of institutional support for those activities. And ethnic studies faculty members are possibly more likely to provide that advising and mentoring even when it is uncompensated, which creates workload and compensation inequities. The community stakeholders also expect faculty members (and students) to be involved in a host of activities and events, placing additional funding and workload pressures on the programs and their faculty members." (page 28).

As with other metrics, there is quite a bit of variation across colleges although in the future, it would be useful to have the data reported in a way that would facilitate better comparisons. The Committee also notes that the majority of the institutional data do not differentiate between those faculty who are from minority groups in the United States and those who are non-citizens (e.g., Asian-Americans versus nationals of Asian countries). **We recommend that the University continue its commitment to the Building on Inclusive Excellence hiring program and we strongly support all of the recommendations to strengthen the program made by the Recruitment and Retention of Underrepresented Faculty Working Group.**

Figure 1.



- Data request: How much overlap is there between FOC and International/non-citizen?
- Data request: Diversity breakdown for the University as a whole, over time (similar to what is provided for the individual colleges)
- Data request: Overall diversity breakdown by college (not broken out by gender, in order to compare percentages in each category)

To: The Senate
 From: The Graduate Council
 Date: September 7, 2017
 Re: 2018-2019 *Graduate Bulletin*

INFORMATION (4I-09-17)

AEROSPACE ENGINEERING

1. New course.

Aerospace Engineering

OPTIMAL CONTROL (C-4)

A E 670. Optimal Control (3)

Prerequisite: Aerospace Engineering 320, Electrical Engineering 420, or Mechanical Engineering 330.

Applications in aerospace engineering to include Hamilton-Jacobi-Bellman equation, Maximum Principle, optimal control of dynamic systems, and parameter optimization. Fuel-optimal, linear quadratic optimal control, and time-optimal problems.

ASTRONOMY

1. New course.

Astronomy

GALACTIC STRUCTURE & EVOL (C-4)

ASTR 650. Galactic Structure and Evolution (3)

Prerequisite: Astronomy 680.

Stellar and gaseous structures of the Milky Way and external galaxies. Properties to include chemical evolution, color distributions, luminosity functions, mass-to-light ratios, scaling relations, and surface brightness profiles. Dark matter halos, gravitational collapse models, and hierarchical structure formation. Contents and physical state of interstellar and circumgalactic media.

2. Change in program.

Astronomy

**Specific Requirements for the Master of Science Degree
 (Major Code: 19111) (SIMS Code: 770501)**

Paragraph 1 (*no change*)

1. Complete the 12-unit core course curriculum (Astronomy 630, 650, 660, 680).
2. Complete at least 15 additional units of 500-, 600-, 700-level in astronomy graduate level courses or approved 500-level courses in astronomy or related fields as

approved by departmental graduate adviser; not to exceed 12 units of 500-level courses if pursuing Plan B.

Remainder of description (*no change*)

Change(s): Addition of ASTR 650 as a core requirement and subsequent adjustment of units in core and elective options.

AUDIOLOGY

1. Change to units.

Audiology

AUD 845. Hearing Conservation (1)

Prerequisites: Audiology 700 and 705.

Hearing conservation programs in various settings. Current research on occupational noise exposure and hearing loss and workers' compensation coverage of hearing loss.

Change(s): Units updated from two to one.

EDUCATION

1. Change in program.

Education

Specific Requirements for the Educational Specialist Degree in School Psychology (Major Code: 20013) (SIMS Code: 331050)

Paragraph 1 (*no change*)

Curricular Requirements for the Ed.S. in School Psychology

The school psychology program requires a specific sequence of courses and supervised experiences that align with the National Association of School Psychologists (NASP) domains of practice, which is the programs' accrediting agency. The student, in collaboration with the adviser, must file a program of study prior to taking courses to ensure all requirements are fulfilled. The student entering with a bachelor's degree must complete a minimum of 93 units of the M.S. and Ed.S. school psychology program, with courses selected in collaboration with the adviser. Students admitted to the Ed.S. or credential-only programs, with a previously earned graduate degree in a closely-related field, may have completed graduate coursework consistent with the school psychology program. Such students may petition for course waiver(s) by presenting documentation of successful completion of comparable courses and attainment of associated knowledge and competencies; however, (a) the student must complete a minimum of 47 units in the SDSU Ed.S. program and (b) the full-complement of knowledge and skills must be demonstrated prior to recommendation for the Ed.S. degree.

M.S. in Counseling with Concentration in School Psychology* (46 units)

CSP 600 Cross-Cultural Counseling Communication Skills (2)

CSP 600L	Cross-Cultural Counseling Prepracticum (1) Cr/NC
CSP 615	Seminar in Multicultural Dimensions in Counseling (3)
CSP 619	Foundations in Ecosystemic Thinking and School Psychology (3)
CSP 623	Ecobehavioral Assessment – Intervention (3)
CSP 662B	Counseling Interventions with Children and Adolescents – School Counseling and School Psychology (3)
CSP 663	Response to Intervention: Assessment-Intervention for Learning I (3)
CSP 664	Response to Intervention: Assessment-Intervention for Learning II (3)
CSP 710A	Professional Seminar: Evaluating Educational and Psychological Interventions (3)
CSP 726	School Psychology Models and Practices for Family-School Collaboration (3)
CSP 730	Fieldwork in Counseling (3) Cr/NC
CSP 740	Practicum (4) Cr/NC
CSP 750	Response to Intervention: Assessment and Instructional Support for Culturally and Linguistically Diverse Learners (3)
CSP 762	Prevention, Crisis Intervention, and Conflict Resolution in Schools (3)
CSP 764	Advanced Educational Psychology: Developmental and Biological Bases of Behavior (3)
ED 690	Methods of Inquiry (3)

***Courses may be applied to the Master of Science degree in counseling with a concentration in school psychology (Major Code: 08261) (SIMS Code: 331046). Students are not directly admitted to the Master of Science degree in counseling with a concentration in school psychology.**

Ed.S. Degree in School Psychology (47 units)

CSP 680	Theory and Process of Consultation (3)
CSP 710B	Professional Seminar: Advanced Research and Evaluation in School Psychology (3)
CSP 723	School-Based Mental Health Interventions (3)
CSP 730	Fieldwork in Counseling (3) Cr/NC
CSP 733	Ethics and Law for Educators (3)
CSP 751	Response to Intervention: Advanced Assessment-Intervention: Special Populations (3)
CSP 752	Seminar and Practicum: School Psychology (6) Cr/NC
CSP 760	Advanced Seminar in School Psychology (6)
CSP 761	Dynamic Cognitive Assessment and Intervention (3)
CSP 771	Advanced Learning and Multi-Tiered Mediated Interventions (3)
CSP 780	Internship (8) Cr/NC
CSP 784	Advanced Consultation in Diverse Schools (3)
	Other courses as approved by adviser.

Requirements for the Mandatory School Psychology Credential

This is a combined program that includes a M.S. in Counseling, an Ed.S. degree, and PPS credential. The PPS credential is not a degree. Students in this program will complete coursework towards a California Pupil Personnel Services Credential with a focus area in school psychology. PPS credential requirements include the coursework for the M.S. and Ed.S., a 1,200-hour internship in the public schools as the culminating supervised field experience, and demonstrated competency in each of the NASP standards within the program. Upon completion, students receive the formal recommendation of the school psychology faculty. Internship is completed as a full-time year-long experience; under special circumstances, it may be possible to extend the internship on a half-time basis across two years. Interns will enroll in Counseling and School Psychology 760 and 780 throughout the duration of their internship (the student will complete a portfolio during concurrent enrollment in both classes).

Performance Expectations

Reminder of description (*no change*)

Change(s): Reduce units for the M.S. in counseling with a concentration in school psychology (from 48 to 46) and make a clean separation in the program of study for the M.S. and Ed.S. degrees related to school psychology. This would mean students could complete the MS degree with a concentration in School Psychology within three full-time semesters. Consolidate the Ed.S. degree and PPS school psychology credential into one integrated program and sequence with fewer units than before. Reduce the minimum total units needed to complete the M.S., Ed.S., and PPS credential in school psychology. Reduced the number of units for our first year practicum course CSP 740 from 3 units to 2 units per semester.

HOMELAND SECURITY

1. Change in program.

Homeland Security

Specific Requirements for the Master of Science Degree (Major Code: 22102) (SIMS Code: 779001)

Paragraph 1 (*no change*)

Graduate Program (30 units)

I. Core Courses (15 units)

H SEC 601 Seminar in Homeland Security (3)

H SEC 602 Seminar in Science, Technology, and Homeland Security (3)

H SEC 603 Seminar in Emergency Preparedness and Response (3)

H SEC 604 Seminar in Law, Society, and Homeland Security (3)

H SEC 695 Practicum in Homeland Security (3)

II. Homeland Security electives: (*no change*)

III. Non-Homeland Security electives: Three units in consultation with program adviser.

IV. Study Abroad (3 units). (*no change to paragraph*)

1. A CSU Study Abroad Program;

2. An SDSU Exchange Program;
3. An SDSU Semester Abroad Program;
4. An SDSU Travel Study Program;
5. A homeland security practicum, special topics, special study, or research conducted abroad.

See the homeland security study abroad guide located in the homeland security Blackboard homeroom and the program adviser to make arrangements to meet the study abroad requirement.

V. Plan A or Plan B (3 units). (no change)

Change(s): HSEC 690 courses may be used for the degree (no maximum). Study abroad does not specifically mention geographic destinations. Admissions requirement lists a required electronic application submission process. H SEC 695 (3 units) Practicum in Homeland Security is a required core course. Core courses encompass 15 units. One (3 units) outside program elective course is required.

MATHEMATICS AND SCIENCE EDUCATION

1. Change to prerequisites.

Mathematics

MATH 601. Topics in Algebra (3)

Prerequisites: Mathematics 320 and 330.

Unique factorization domains, rings and ideals, groups, algebraic field extensions.

A course designed for secondary school teachers.

Change(s): Prerequisites updated from *Mathematics 521A and 534A* to what is reflected above.

2. Change to prerequisites.

Mathematics

MATH 602. Topics in Analysis (3)

Prerequisites: Mathematics 320 and 330.

Topics in analysis, including the real number system, convergence, continuity, differentiation, the Riemann-Stieltjes integral, complex analysis, designed to give the secondary teacher a broad understanding of the fundamental concepts.

Change(s): Prerequisites updated from *Mathematics 521A and 534A* to what is reflected above.

NUTRITIONAL SCIENCES

- 1 Change in program.

Nutritional Sciences

**Specific Requirements for the Master of Science Degree
(Major Code: 13061) (SIMS Code: 552933)**

Paragraph 1 (*no change*)

Required courses (15 units):

ENS 601	Experimental Methods in Exercise and Nutritional Sciences (3)
ENS 602	Research Evaluation in Exercise and Nutritional Sciences (3)
NUTR 607	Child Nutrition (3)
NUTR 608	Geriatric Nutrition (3)
NUTR 610	Nutrition and Energy (3)

Select three units from the following:

NUTR 600	Seminar: Foods and Nutrition (3)
NUTR 700	Seminar in Nutrition (3)

Plan A

NUTR 799A Thesis (3) Cr/NC/RP

OR

ENS 799A Thesis (3) Cr/NC/RP

or Plan B

ENS 790 Seminar in Directed Readings (3) Cr/NC

Electives: Nine units to be selected with approval of graduate adviser.

Remainder of description (*no change*)

Change(s): NUTR 607, 608, 610 all required. Decrease elective from 12 units to 9 units.

PHYSICAL THERAPY

1. New course.

Physical Therapy

FOUND PT EVAL I (C-4 one unit; C-15 two units)

DPT 700. Foundations of Physical Therapy Evaluation I (3)

One lecture and six hours of laboratory.

Prerequisite: Admission to the DPT program.

Psychomotor skills in observation and evaluation of movement.

2. Change to prerequisite and title.

Physical Therapy

FOUND PT EVALUATION II

DPT 710. Foundations of Physical Therapy Evaluation II (4)

Two lectures and six hours of laboratory.

Prerequisites: Doctor of Physical Therapy 700, 725 [or Biology 725], and admission to the DPT program.

Problem solving and psychomotor skills to perform general physical examination. Concepts, procedures, and techniques required to provide safe and effective patient care.

Change(s): DPT 700 and 725 added as prerequisites. *II* appended to title.

3. Change to hours description, title, and units.

Physical Therapy

THERAPEUTIC MODALITIES (C-4 one unit; C-15 two units)

DPT 780. Therapeutic Modalities (3)

One lecture and six hours of laboratory.

Prerequisite: Admission to the DPT program.

Anatomy, physiology, pathology, mutability of human biological tissues in the rehabilitation process.

Change(s): Hours description updated from *Two lectures and six hours of laboratory* to what is reflected above. Title updated to *Therapeutic Modalities* from *Integumentary Therapeutics*. Units decreased to three from four.

4. Change to description, repeatability, and units.

Physical Therapy

DPT 897. Doctoral Research (1) Cr/NC

Prerequisite: Admission to the DPT program.

Investigation to the general field of the doctoral project. Maximum credit two units applicable to the doctoral degree

Change(s): *Maximum credit two units applicable to the doctoral degree* added to description. Repeatability updated from no to yes. Now a static one-unit course instead of variable 1-15.

5. Change in program.

Physical Therapy

**Specific Requirements for the Doctor of Physical Therapy Degree
(Major Code: 12122) (SIMS Code: 556529)**

Paragraph 1 (*no change*)

SUMMER I (7 Units)

DPT 700 Foundations of Physical Therapy Evaluation I (3)

DPT 725/

BIOL 725 Clinical Anatomy I (4)

FALL SEMESTER I (15 Units)

DPT 710 Foundations of Physical Therapy Evaluation II (4)

DPT 726/

BIOL 726	Clinical Anatomy II (4)
DPT 750	Concepts in Physiology, Pathophysiology, and Pharmacology (4)
DPT 881	Evidence-Based Practice I: Principles and Clinical Applications (3)

SPRING SEMESTER I (18 Units)

DPT 760	Neurosciences (4)
DPT 780	Therapeutic Modalities (3)
DPT 782	Therapeutic Exercise (4)
DPT 882	Evidence-Based Practice II: Research Applications (3)
DPT 886	Functional Neuro-Biomechanical Relationships (4)

SUMMER II (11 Units)

Session 1:

DPT 857	Prosthetics and Orthotics (2)
DPT 880	Differential Diagnosis in Physical Therapy (3)
DPT 887	Professional Development in Physical Therapy Practice (3)

Session 2:

DPT 801	Clerkship (3) Cr/NC
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FALL SEMESTER II (18 Units)

(no change)

SPRING SEMESTER II (19 Units)

(no change)

SUMMER III (9 Units)

Session 1:

DPT 822	Interventions in Musculoskeletal Therapeutics (3)
DPT 837	Interventions in Neuromuscular Therapeutics (3)
DPT 868	Physical Therapy Organization and Administration (3)

FALL SEMESTER III (12 Units)

DPT 889	Doctoral Project (2) Cr/NC
DPT 895	Clinical Internship (10) Cr/NC

SPRING SEMESTER III (12 Units)

DPT 889	Doctoral Project (2) Cr/NC
DPT 895	Clinical Internship (10) Cr/NC

Change(s): New summer I term and subsequent realignment of program of study sequence.

STATISTICS

1. New course.

Statistics

LINEAR REGRESSION MODELS (C-4)

STAT 610. Linear Regression Models (3)

Prerequisite: Statistics 551B with a grade of C (2.0) or better.

Methods for diagnostic tools, matrix forms for multiple regression, model fitting and validation, simple and multiple regression models, and variable selection. Applications of methods with R, SAS, and SPSS software. (Formerly numbered Statistics 510.)

2. Change in program.

Statistics

Specific Requirements for the Master of Science Degree in Statistics**(Major Code: 17021) (SIMS Code: 776369)**

Paragraphs 1-3 (*no change*)

1. Complete Statistics 610, 670A, 670B with no grade less than B in each course. These are core statistics courses.

Remainder of description (*no change*)

Change(s): The newly created STAT 610 replaced 510.

Report prepared and respectfully submitted by Curriculum Services on behalf of the Graduate Curriculum Committee.

To: The Senate
From: The Graduate Council
Date: September 7, 2017
Re: 2018-2019 *General Catalog* and *Graduate Bulletin*

INFORMATION (4I-09-17.500)

AEROSPACE ENGINEERING

1. Change to description, prerequisite, and title.

Aerospace Engineering
SPACECRAFT ATTITUDE DYNAM

A E 520. Spacecraft Attitude Dynamics and Control (3)

Prerequisite: Aerospace Engineering 320 or graduate standing.

Spacecraft rigid-body attitude dynamics and feedback control.

Change(s): Description updated from *Rigid-body dynamics with applications in spacecraft attitude dynamics* to what is reflected above. *Or graduate standing* added to prerequisite. Title updated from *Intermediate Aerospace Flight Mechanics* to what is reflected above.

2. New course.

Aerospace Engineering
AEROSPACE GUIDANCE & NAV (C-4)

A E 546. Aerospace Guidance and Navigation (3)

Prerequisite: Aerospace Engineering 320 with a grade of C (2.0) or better or graduate standing.

Principles and theories of navigation for aerospace vehicles. Aerospace guidance for entry vehicles, launch vehicles, missiles, and spacecraft. Classical and advanced guidance designs.

ENGLISH

1. Change to description and prerequisite.

English
ENGL 576B. Literary Publishing and Editing Workshop B (3)

Prerequisite: Six lower division units in literature and/or creative writing or graduate standing.

Practical experience in small-press literary publishing. Creating and running a press to publish print and digital texts. Tutorials and guest lectures. See *Class Schedule* for specific content.

Report prepared and respectfully submitted by Curriculum Services on behalf of the Graduate and Undergraduate Curriculum Committees.

Change(s): Second sentence of description updated from *Expands on skills in creating and running a press to publish both print and digital texts* to what is reflected above. Prerequisite changed from *English 576A* to what is reflected above.

GEOGRAPHY

1. Change to description, prerequisite, and staffing formula.

Geography

(C-2)

GEOG 507. Geography of Natural Vegetation (3)

Prerequisite: Geography 101, Biology 100, or Environmental Science 100 [or Sustainability 100].

The natural vegetation formations of the world and their classifications, development, distribution, and environmental influences to include relationships to human activities. Field trips may be arranged.

Change(s): Description updated from *The natural vegetation associations of the world, their distribution, classification and development, including relationship to human activities. Field trips may be arranged* to what is reflected above. BIOL 100, ENV S [or SUSTN 100] added as prerequisite options. Staffing formula updated from C-4 to C-2.

2. Change to description and prerequisite.

Geography

GEOG 509. Regional Climatology (3)

Prerequisite: Geography 101, 103, or Environmental Science 100 [or Sustainability 100].

Regional distributions of earth's climates and basic principles governing atmospheric processes that control global distributions of climate types.

Change(s): Description updated from *The causes of climatic types as they occur throughout the world* to what is reflected above. ENV S [or SUSTN 100] added as prerequisite options.

3. New course.

Geography

INTRO GIS PROG W PYTHON (C-2 two units; C-15 one unit)

GEOG 582. Introduction to GIS Programming with Python (3)

Prerequisite: Geography 381, 484, or graduate standing. Recommended: Computer Science 107 or 108.

Automating geocoding processes by python scripting, managing vector and raster data, and preprocessing geospatial data.

HISTORY

Report prepared and respectfully submitted by Curriculum Services on behalf of the Graduate and Undergraduate Curriculum Committees.

1. New course.

History

HISTORY OF BRAZIL (C-2)

HIST 556. History of Brazil (3)

(Same course as Latin American Studies 556.)

Prerequisite: Upper division or graduate standing.

Economic, political, and social history of Brazil from precolonial era to present to include democratic and dictatorial rule, industrialization, populism, race and racism, and slavery.

LATIN AMERICAN STUDIES

1. New course.

Latin American Studies

HISTORY OF BRAZIL (C-2)

LATAM 556. History of Brazil (3)

(Same course as History 556.)

Prerequisite: Upper division or graduate standing.

Economic, political, and social history of Brazil from precolonial era to present to include democratic and dictatorial rule, industrialization, populism, race and racism, and slavery.

MATHEMATICS

1. Change to description, grading method, number, prerequisite, and title.

Mathematics

ALGEBRAIC STRUCTURES

MATH 520. Algebraic Structures (3)

Prerequisite: Mathematics 320 with a grade of C (2.0) or better or graduate standing. **Proof of completion of prerequisite required:** Copy of transcript.

Continuation of Mathematics 320. Group theory to include finite Abelian groups, group homomorphisms and isomorphisms, normal subgroups, quotient groups, and Sylow theorems. Selected advanced topics to include field extensions or integral domains. (Formerly numbered Mathematics 521B.)

Change(s): First sentence of description updated from *Continuation of Mathematics 521A* to what is reflected above. Grading method updated from *+LETTER (C/N OK)* to *+LETTER*. Number updated from 521B to 520. Prerequisite updated from *Mathematics 521A with a grade of C (2.0) or better. Proof of completion of prerequisite required: Copy of transcript* to what is reflected above. Title updated from *Abstract Algebra* to what is reflected above.

Report prepared and respectfully submitted by Curriculum Services on behalf of the Graduate and Undergraduate Curriculum Committees.

2. Deactivation of course.

Mathematics

MATH 521A. Abstract Algebra (3)

Prerequisites: Mathematics 245 and 254 with a grade of C (2.0) or better in each course. **Proof of completion of prerequisites required:** Copy of transcript.

Elementary number theory and rings to include ideals, polynomial rings, quotient rings, ring homomorphisms and isomorphisms. Introduction to basic aspects of group theory.

3. Change to description, number, and prerequisite.

Mathematics

MATH 530. Advanced Calculus II (3)

Prerequisite: Mathematics 330 with a grade of C (2.0) or better or graduate standing. **Proof of completion of prerequisite required:** Copy of transcript.

Formal definitions and analysis within the framework of single variable functions. Advanced concepts in analysis. (Formerly numbered Mathematics 534B.)

Change(s): Description updated from *Series and sequences of functions and their applications, functions of several variables and their continuity, differentiability and integrability properties* to what is reflected above. Number updated from 534B to 530. Prerequisite updated from *Mathematics 534A with a grade of C (2.0) or better* to what is reflected above.

4. Deactivation of course.

Mathematics

MATH 534A. Advanced Calculus I (3)

Prerequisites: Mathematics 245 and either 254 or 342A with a grade of C (2.0) or better in each course. Proof of completion of prerequisites required: Copy of transcript.

Completeness of the real numbers and its consequences, sequences of real numbers, continuity, differentiability and integrability of functions of one real variable.

STATISTICS

1. Deactivation of course.

Statistics

STAT 510. Applied Regression Analysis (3)

Prerequisite: Statistics 350A or comparable course in statistics.

Methods for simple and multiple regression models, model fitting, variable selection, diagnostic tools, model validation, and matrix forms for multiple regression. Applications of these methods will be illustrated with SAS, SPSS, and/or R computer software packages.

Report prepared and respectfully submitted by Curriculum Services on behalf of the Graduate and Undergraduate Curriculum Committees.

Date: 18 September 2017
To: Senate
From: Stephen Schellenberg, Chair, Student Learning Outcomes and Program Assessment Committee
Information: Undergraduate Program Assessment (UPA) Campaign for AY 2017/2018

Overview: In response to recommendations presented by the *WASC Senior College and University* in their *Formal Notification and Official Record of Action* letter (see appendix), the committee has developed the following campus-wide campaign for AY17/18 based on review of the current state of assessment and input from selected units and individuals across campus. As we finalize the structure and implementation of this campaign, we welcome suggestions and perspectives from across campus.

Goals:

- Focus the role of undergraduate program assessment (UPA) as an ongoing student-centered process intended to identify and promote opportunities for pedagogical and curricular improvements, and thereby increase student engagement, success, and achievement
- Transition the communication of UPA information and actions from the subscription-based, non-public, high-cost WEAVE product to department-controlled, degree-specific, public webpages
- Incentivize engagement in UPA through formal recognition and support of exemplary efforts, including (1) evidence-based improvements to courses/curriculum, (2) public demonstration of student achievement, and (3) evidence-based requests for support of assessment efforts and actions
- Strengthen connections of UPA to Academic Program Review, academic advising, and student engagement, success, and achievement efforts

Components: Over AY17/18, four campaign components will be supported at the university level and operationalized at the program level.

- Identify past assessment efforts that demonstrate student achievement with respect to DLOs and/or program responsiveness with respect to assessment-based opportunities to improve effectiveness
- Review and revise Degree Learning Outcomes (DLOs) as appropriate for each degree, concentration, and emphasis
- Develop explicit curricular maps that illustrates how DLOs are developed through major courses and other curricular requirements (e.g., HIPs such as study abroad, internships, capstones)
- Prioritize and plan assessment efforts for next three AYs in light of past findings and above efforts

These components will be supported over AY17/18 through a progressive set of guiding communications and resources as well as a series of university-wide working lunches for program assessment coordinators, chairs/directors, associate deans, deans, and university-level leadership. We stress that because these program-level efforts will be iterative and looping in nature (e.g., curricular mapping reveals the need to refine a given Degree Learning Outcome), programs will not be required to engage in any additional assessment efforts (though they are certainly welcomed to do so). The SLOPAC Chair will serve as campaign lead and point-of-contact, and make himself available to colleges and programs for presentations, consultations, discussions, etc. The campaign will also be supported by SLOPAC members and the Center for Teaching and Learning as their respective time and resources allow. Programs are strongly encouraged to frame their UPA efforts as a shared conversation and commitment among their constituent faculty, particularly in light of the recent significant increases in new faculty that have limited institutional history but bring fresh curricular perspectives.

Deliverables: By the start of the F18 semester, programs are expected to develop degree-specific webpages that communicate the above components in a manner most appropriate for their discipline and students. To facilitate these efforts, a fully-accessible Omni Update template page is under development, and will be shared as a resource for programs migrating to this university-supported CMS.

Incentives: A series of RFPs will be announced to (1) honor exemplary assessment practices, (2) support material costs associated with assessment efforts and actions, and (3) celebrate assessment-based demonstrations of high student achievement.

Requests to University Leadership: The right of faculty to control the curriculum is inextricably linked with a responsibility to assess its effectiveness and embrace opportunities for improvement. Such responsibility will be most fully realized when sufficiently recognized, valued, and supported across the broader university. Thus, this assessment campaign includes the following requests to university leadership:

- Re-establish the expectation for active engagement in assessment as a criterion for faculty line allocation
- Champion and support UPA as a means to increase program effectiveness and thereby student engagement, success, and achievement
- Examine resource needs for developing and maintaining UPA websites given varying levels of web support across programs and colleges
- Acknowledge that these AY17/18 UPA efforts, together with developments in General Education reform, will inform a future base-funding request to sustain university-wide assessment as per the WSCUC Recommendations. Note that all program assessment efforts are currently being supported by endowment funds within the Division of Academic Engagement and Student Achievement (DAESA; formerly DUS)

Appendix. Institutional Recommendations for San Diego State University WSCUC Formal Notification and Official Record of Action Letter (8 July 2016)

Background: On 8 July 2016, as the final component of SDSU's Reaffirmation of Accreditation process, the President of the WASC Senior College and University Commission presented a *Formal Notification and Record of Action Letter* to SDSU President Elliot Hirshman. In this letter, the Commission identified four institutional issues for further development as formal Recommendations. Substantive and demonstrable progress on these Recommendations is expected for subsequent reporting to WASC, including annual reports, the mid-cycle review (Spring 2021), and the next reaffirmation process (beginning Fall 2025). The entire 2015-2016 Reaffirmation of Accreditation timeline and documents may be viewed at wasc.sdsu.edu.

Recommendation 1 – Review the general education program to (a) strengthen its alignment with institutional goals, (b) enhance its integration into the overall curriculum, (c) improve understanding among students as to its purposes, and (d) create an effective infrastructure to support coordination across academic programs (CFR 2.2a). The Commission is pleased to learn that SDSU will be re-examining the general education curriculum, course options, and the experience for students.

Recommendation 2 – Develop or strengthen systems, organizational relationships, and governance infrastructure involved in both information technology and data management such that faculty and staff have ready access to reliable and consistent information and shared analytical tools - perhaps via a data warehouse - that can enhance student success (CFRs 1.2, 3.5, 4.2). The Commission is pleased to learn that a working group led by the CIO will be reviewing enterprise and data management systems and will make recommendations for improvement as needed.

Recommendation 3 – Develop, via an appropriately consultative process, a plan for allocating faculty and staff positions to address multiple and competing needs, among them: a commitment to student success; the enhancement of diversity; support of existing graduate programs; and the development of new initiatives. Enhance efforts to retain faculty and staff through professional development opportunities (CFRs 3.1, 3.2, 3.3).

Recommendation 4 – Sustain and enhance progress in the assessment of educational effectiveness through the development of a manageable process of assessment:

- a. Prioritize outcomes of greatest concern to the campus, for example, underrepresented student success, student success in courses with high rates of D's, F's, or Withdrawals, and the quality of high-impact practices.
- b. Facilitate the full participation of all units and programs in the assessment process, including general education, graduate programs, and the Imperial Valley Campus.
- c. Establish a platform (WEAVE or an alternative) that documents outcomes, results, and actions taken, that makes expectations and outcomes explicit and public, and that facilitates sharing (CFRs 2.2a, 2.2b, 2.3, 2.4, 4.2).

To: Senate Executive Committee / Senate

From: Larry S. Verity, Chair
Undergraduate Curriculum Committee

Date: August 16, 2017

Re: 2018-2019 *General Catalog*

INFORMATION (5I-09-17)

ADMINISTRATION, REHABILITATION AND POSTSECONDARY EDUCATION

1. Addition of existing course to general education.

Administration, Rehabilitation and Postsecondary Education

ARP 205. Exploring Leadership (3) [GE]

Understanding, applying and critiquing leadership theories, examining personal strengths, values, goals, and philosophy of leadership.

Change(s): Add course to GE.

2. Change to title.

Administration, Rehabilitation and Postsecondary Education

CAMPUS LEADERSHIP EXP

ARP 403. Leadership – Campus Leadership Experience (1)

Prerequisite: Administration, Rehabilitation and Postsecondary Education 205.

Laboratory on campus and at other postsecondary settings to integrate academic work with experiences on campus and in postsecondary settings.

Change(s): Course title updated from *Field laboratory in Leadership: Campus and Other Postsecondary Settings* to what is reflected above.

3. Change to title.

Administration, Rehabilitation and Postsecondary Education

LEADERSHP INTERN & CAREER

ARP 404. Leadership Internship and Career (1)

Laboratory in public agencies and business settings to integrate academic work with experiences in the community. (Formerly numbered Educational Leadership 404.)

Change(s): Course title updated from *Field Laboratory in Leadership: Public Agencies and Businesses* to what is reflected above.

AEROSPACE ENGINEERING

1. Change to prerequisites.

Aerospace Engineering

A E 430. Aircraft Propulsion Systems (3)

Prerequisites: Aerospace Engineering 302 and Mechanical Engineering 350.

Theory and performance characteristics of aircraft propulsion systems including reciprocating engines, turbojets, ramjets, etc.

Change(s): Prerequisites updated from *Aerospace Engineering 302 or Mechanical Engineering 351* to what is reflected above.

AFRICANA STUDIES

1. New course.

Africana Studies

AFRO-BRAZ COMM CULT IDENT (C-2)

AFRAS 300. Afro-Brazilian Community, Culture, and Identity (3)

Prerequisite: Completion of the General Education requirement in Foundations of Learning II.B., Social and Behavioral Sciences.

Culture, history, and the social institutions of Brazilians of African descent. Economic and political standing in Brazil's contemporary urban and traditional rural societies.

ART

1. New course

Art

PHOTOGRAPHY & VISUAL COMM (C-7)

ART 107. Photography and Visual Communication (3)

Visual expression and literacy using photographic concepts and media.

2. Change to description and prerequisites.

Art

ART 385. Art Education History and Practice (3)

Six hours.

Prerequisite: Art 100, 101, or 103.

History and theory of art education. Role of art in child and adolescent development, art heritage, diversity and equity in art education and teaching methodologies.

Change(s): *For art majors interested in pursuing the single subject teaching credential removed from description. Prerequisites updated from Art 103, 104, 258, 259 to what is reflected above.*

3. Change in program.

Art

Art Major

With the B.A. Degree in Liberal Arts and Sciences

Emphasis in Art History

(Major Code: 10031) (SIMS Code: 660517)

Impacted Program. *(no change)*

Preparation for the Major. *(no change)*

Language Requirement. *(no change)*

Graduation Writing Assessment Requirement. *(no change)*

International or Professional Experience Requirement. *(no change)*

Major. A minimum of 30 upper division units in art history to include Art 578 and 593; and 21 units selected from Art 371, 409, 557 through 577 (three of the units must be from Art 557, 559, or 560), and three units of art electives.

Change(s): Addition of Art 409 as a select-from option in major section.

4. Change in program.

Art

Art Major

With the B.A. Degree in Liberal Arts and Sciences

Emphasis in Studio Arts

(Major Code: 10021) (SIMS Code: 660589)

Impacted Program. *(no change)*

Preparation for the Major. Art 100, 101, 102 or 104, 103, 258, 259; six units selected from Art 203 or 204; 216, 223, 226, 231, 240 or 248; and three units of art electives. Art 100, 101, 102 or 104, 103, 258, and 259 must be completed with a grade of C (2.0) or better and cannot be taken for credit/no credit (Cr/NC). (27 units)

Students completing the California Community College Associate in Arts in Studio Arts for Transfer (AA-T) will satisfy preparation for the major. If Art 102 or 104 was not completed as part of the AA-T, it must be completed at SDSU.

Language Requirement. *(no change)*

Graduation Writing Assessment Requirement. *(no change)*

International or Professional Experience Requirement. *(no change)*

Major. A minimum of 30 upper division units in art to include six units selected from Art 340, 343, 344, 346, 348, 403, 404, 407, 410; three units selected from Art 323, 325, 331, 435; six units selected from Art 326, 416, 423, 425, 431, 432, 440, 443, 444, 446, 448; three units selected from Art 345, 347, 412, 506; six units of Art History (Art 371, 409, 557 through 578, and 593); and six units of art electives.

Change(s): Addition of Art 223, 226, 231 as three-dimensional art options in preparation for the major section. Addition of Art 409 to the list of upper division art history requirement options in major section.

5. Change in program.

Art

Art Major

With the B.A. Degree in Applied Arts and Sciences

Emphasis in Applied Design

(Major Code: 10021) (SIMS Code: 660509)

Impacted Program. The applied design emphasis is designated as an impacted program and specific criteria, which include a portion of the Preparation for the Major, are used to admit students. To be admitted to the applied design emphasis, students must meet the following criteria:

- a. Complete with a grade of C (2.0) or better: Art 100, 101, 102 or 104, 103, 258, and 259. These courses cannot be taken for credit/no credit (Cr/NC);
- b. Have a cumulative GPA of 2.20 or better;
- c. Students not meeting the minimum GPA may petition for special consideration.

To complete the major, students must fulfill the degree requirements for the major described in the catalog in effect at the time they are accepted into the premajor at SDSU (assuming continuous enrollment).

Preparation for the Major. Art 100, 101, 102 or 104, 103, 258, 259; six units selected from Art 216, 220, 223, 226, 231; three units selected from Art 148, 204, 210, 240, 241, 242, or 248; and three units of art electives. Art 100, 101, 102 or 104, 103, 258, and 259 must be completed with a grade of C (2.0) or better and cannot be taken for credit/no credit (Cr/NC). (30 units)

Graduation Writing Assessment Requirement. *(no change)*

Major. A minimum of 30 upper division units in art to include three units from each of the areas listed below, six additional units in one of the areas; six units of art electives; and six units of art history (Art 371, 409, 557 through 578, and 593).

Remainder of description *(no change)*

Change(s): Addition of Art 102 as an option to the Art 104 requirement in impaction and preparation for the major sections. Addition of Art 226 to the list: "six units selected from Art 216, 220." Update to three units selected from Art 148, 204, 210, 240, 241, 242 or 248, and three units of lower division art electives in preparation for the major section. Addition of Art 409 to the list of upper division art history requirements in the major section.

6. Change in program.

Art

Art Major

With the B.A. Degree in Applied Arts and Sciences

Emphasis in Graphic Design

(Major Code: 10091) (SIMS Code: 660557)

Impacted Program. The graphic design emphasis is designated as an impacted program and specific criteria, which include a portion of the Preparation for the Major, are used to admit students. To be admitted to the graphic design emphasis, students must meet the following criteria:

- a. Complete with a grade of C (2.0) or better: Art 100, 101, 102 or 104, 103, 258, and 259. These courses cannot be taken for credit/no credit (Cr/NC);
- b. Have a cumulative GPA of 2.50 or better;
- c. Students not meeting the minimum GPA may petition for special consideration.

To complete the major, students must fulfill the degree requirements for the major described in the catalog in effect at the time they are accepted into the premajor at SDSU (assuming continuous enrollment).

Preparation for the Major. Art 100, 101, 102 or 104, 103, 241, 242, 258, 259; three units selected from Art 216, 220, 223, 226, 231, and three units of lower division art electives (Art 240 recommended). Art 100, 101, 102 or 104, 103, 258, and 259 must be completed with a grade of C (2.0) or better and cannot be taken for credit/no credit (Cr/NC). (30 units)

Graduation Writing Assessment Requirement. *(no change)*

Major. A minimum of 33 upper division units in art to include Art 341, 342A, 345; six units selected from Art 313, 441, 442, 450, 454; six units selected from Art 445B, 445C, 541, 542, 545; six units of upper division art electives; six units of art history (Art 371, 409, 557 through 578, and 593); recommended: Art 577.

Change(s): Addition of Art 102 as an option to the Art 104 requirement in the preparation for the major section. Update to three units selected from: Art 216, 220, 223, 226, 231, and 3 units of lower division open art electives in the preparation for the major section. Addition of Art 409 to the list of upper division art history elective requirements in the major section.

7. Change in program.

Art

Art Major**With the B.A. Degree in Applied Arts and Sciences****Emphasis in Interior Architecture****(Major Code: 02031) (SIMS Code: XXXXXX)**

Impacted Program. The interior architecture emphasis is designated as an impacted program and specific criteria, which include a portion of the Preparation for the Major, are used to admit students. To be admitted to the interior architecture emphasis, students must meet the following criteria:

- a. Complete with a grade of C (2.0) or better: Art 100, 101, 102 or 104, 103, 258, and 259. These courses cannot be taken for credit/no credit (Cr/NC);
- b. Have a cumulative GPA of 2.20 or better;
- c. Students not meeting the minimum GPA may petition for special consideration.

To complete the major, students must fulfill the degree requirements for the major described in the catalog in effect at the time they are accepted into the premajor at SDSU (assuming continuous enrollment).

Preparation for the Major. Art 100, 101, 102 or 104, 103, 148, 249, 250, 251, 258, 259; and three units selected from Art 216, 220, 223, 226, 231. Art 100, 101, 102 or 104, 103, 258, and 259 must be completed with a grade of C (2.0) or better and cannot be taken for credit/no credit (Cr/NC). (33 units)

Graduation Writing Assessment Requirement. *(no change)*

Major. A minimum of 30 upper division units in art to include Art 347, 352, 451, 453, 552, 553; six units of upper division art electives; and six units of art history (Art 371, 409, 557 through 578, and 593); recommended: Art 577.

Change(s): The emphasis title changed to “Interior Architecture.” The addition of Art 102 as an option to the Art 104 requirement. Addition of Art 409 as an option to satisfy art history requirements. Requires the 3 units be selected from Art 216, 220, 223, 226, 231.

8. Change in program.

Art

Art Major

With the B.A. Degree in Applied Arts and Sciences

**Emphasis in Multimedia and Photography
(Major Code: 06991) (SIMS Code: XXXXXX)**

Impacted Program. The multimedia and photography emphasis is designated as an impacted program and specific criteria, which include a portion of the Preparation for the Major, are used to admit students. To be admitted to the multimedia and photography emphasis, students must meet the following criteria:

- a. Complete with a grade of C (2.0) or better: Art 100, 101, 102 or 104, 103, 258, and 259. These courses cannot be taken for credit/no credit (Cr/NC);
- b. Have a cumulative GPA of 2.20 or better;
- c. Students not meeting the minimum GPA may petition for special consideration.

To complete the major, students must fulfill the degree requirements for the major described in the catalog in effect at the time they are accepted into the premajor at SDSU (assuming continuous enrollment).

Preparation for the Major. Art 100, 101, 102 or 104, 103, 107 or 242, 240, 258, 259; three units selected from Art 216, 220, 223, 226, 231; and three units of Art electives, excluding Art 157. Art 100, 101, 102 or 104, 103, 258, and 259 must be completed with a grade of C (2.0) or better and cannot be taken for credit/no credit (Cr/NC). (30 units)

Graduation Writing Assessment Requirement. *(no change)*

Major. Major. A minimum of 30 upper division units in art to include Art 340 and 344; six units of art history (Art 371, 409, 557 through 578, and 593); three units selected from Art 342A, 346, 348; nine units selected from Art 342A, 342B, 343, 346, 348, 407, 408, 409, 440, 442, 444, 446, 448, 452, 524, 540, 544; six units of art electives.

Change(s): The addition of the name "Photography" to the Emphasis title. The addition of Art 107 in the Preparation for the Major. The addition of Art 102 as an option to the Art 104 requirement. The addition of Art 409 in the upper division. Substitution of ART 452 for ART 445B. Removal of ART 545 from the list of required electives. Now requires 3 units selected from: Art 216, 220, 223, 226, 231, and 3 units of lower division open art electives.

8. Change in program.

Art

Art Major

With the B.A. Degree in Applied Arts and Sciences

Emphasis in Painting and Printmaking

(Major Code: 10021) (SIMS Code: 660573)

Impacted Program. The painting and printmaking emphasis is designated as an impacted program and specific criteria, which include a portion of the Preparation for the Major, are used to admit students. To be admitted to the painting and printmaking emphasis, students must meet the following criteria:

- a. Complete with a grade of C (2.0) or better: Art 100, 101, 102 or 104, 103, 258, and 259. These courses cannot be taken for credit/no credit (Cr/NC);
- b. Have a cumulative GPA of 2.20 or better;
- c. Students not meeting the minimum GPA may petition for special consideration.

To complete the major, students must fulfill the degree requirements for the major described in the catalog in effect at the time they are accepted into the premajor at SDSU (assuming continuous enrollment).

Preparation for the Major. Art 100, 101, 102 or 104, 103, 204, 240, 258, 259; three units selected from Art 102, 203, 210, 216; three units selected from Art 216, 220, 223, 226, 231. Art 100, 101, 102 or 104, 103, 258, and 259 must be completed with a grade of C (2.0) or better and cannot be taken for credit/no credit (Cr /NC). (30 units)

Graduation Writing Assessment Requirement. *(no change)*

Major. A minimum of 30 upper division units in art to include six units of art history (Art 371, 409, 557 through 578, and 593); six units selected from Art 340, 346, 403, 404, 406, 407, 410; three units selected from Art 500, 503, 504, 511; nine units selected from Art 344, 407, 408, 410, 411, 416, 443, 446, 506; six units of upper division art electives.

Change(s): Addition of Art 102 as an option to the Art 104 requirement. Update of three units selected from Art 216, 220, 223, 226, 231 in the preparation for the major section. Addition of Art 409 to the list of upper division art history requirements in the major section.

9. Change in program.

Art

Art Major

With the B.A. Degree in Applied Arts and Sciences

**Emphasis in Sculpture
(Major Code: 10021) (SIMS Code: 660581)**

Impacted Program. The sculpture emphasis is designated as an impacted program and specific criteria, which include a portion of the Preparation for the Major, are used to admit students. To be admitted to the sculpture emphasis, students must meet the following criteria:

- a. Complete with a grade of C (2.0) or better: Art 100, 101, 102 or 104, 103, 258, and 259. These courses cannot be taken for credit/no credit (Cr/NC);
- b. Have a cumulative GPA of 2.20 or better;
- c. Students not meeting the minimum GPA may petition for special consideration.

To complete the major, students must fulfill the degree requirements for the major described in the catalog in effect at the time they are accepted into the premajor at SDSU (assuming continuous enrollment).

Preparation for the Major. Art 100, 101, 102 or 104, 103, 216, 220, 258, 259; three units selected from Art 148, 204, 210, 240, 241, 242, 248, and three units of lower division art electives. Art 100, 101, 102 or 104, 103, 258, and 259 must be completed with a grade of C (2.0) or better and cannot be taken for credit/no credit (Cr/NC). (30 units)

Graduation Writing Assessment Requirement. *(no change)*

Major. A minimum of 30 upper division units to include Art 416, 516, 517; three units selected from Art 331, 431, 432; three units selected from Art 323 or 524; three units selected from Art 325, 326, 346; six units of upper division art electives; six units of art history (Art 371, 409, 557 through 578, and 593).

Change(s): Addition of Art 102 as an option to the Art 104 requirement. Update of three units selected from Art 148, 204, 210, 240, 241, 242, or 248, and 3 units of lower division open art electives in preparation for the major section. Addition of Art 409 to the list of upper division art history requirements to the major section.

BIOLOGY

1. Change to hours description and staffing formula.

Biology

(C-4 ONE UNIT; C-16 ONE UNIT)

BIOL 211L. Fundamentals of Microbiology Laboratory (2)

Three hours of laboratory and one hour of discussion.

Prerequisites: Credit or concurrent registration with a grade of C (2.0) or better in Biology 211.

Fundamentals of microbiology, including study of bacteria, fungi, protozoa, and algae of environment, including disease-producing organisms, their actions and reactions.

Change(s): Hours description changed from *Six hours of laboratory* to what is reflected above. Staffing formula changed from two units C-16 to one unit each for C-4 and C-16.

2. Change in program.

Biology

Biotechnology Certificate**(SIMS Code: 771479)**Paragraph 1 (*no change*)

The certificate requires 13 prerequisite units – Biology 350, 366, 366L, Chemistry 365 and 25-29 certificate units including Biology 497 and/or 499 (5 units must be pre-approved by the certificate adviser), 567, 567L, 568 [or Bioinformatics and Medical Informatics 568], and three electives selected from Biology 510, 549, 554, 570, 575, 576, 584, 585, 589, 590, Chemistry 563, 564. Prerequisite and certificate courses may be utilized in the biology, chemistry, and microbiology majors and minors as appropriate.

Change(s): Addition of BIOL 576 and 589 as elective options.

BUSINESS ADMINISTRATION

1. Change in program.

Business Administration

General Business Major**With the B.S. degree in Business Administration****(Major Code: 05011) (SIMS Code: 221751)****(SIMS Code: 221752 - College of Extended Studies)**Paragraphs 1-2 (*no change*)**Preparation for the Major.** (*no change*)**Graduation Writing Assessment Requirement.** (*no change*)

Major. Thirty-nine to forty upper division units consisting of Business Administration 300, 310, 323, 350, 360, 370. Business Administration 404, 405, or 458 (three units); Accountancy 325 or 326; three units selected from Finance 321, 326, 327, 328, 329, and 331; three units selected from Management 352, 357, 358; three units selected from Management Information Systems 306, 315, and 380; four units selected from Marketing 371, 372, 373, 376, 377; six to seven units selected from 400-level and 500-level courses in the Fowler College of Business. A “C” (2.0) average or better is required in the courses stipulated here for the major.

Change(s): Major requirement of 40 upper division units to 39-40 upper division units, and change the requirement of seven units selected from 400-level and 500-level courses to six to seven units selected from 400-level and 500-level courses.

CIVIL ENGINEERING

1. Addition of existing course to general education.

Civil Engineering

CIV E 220. Civil and Environmental Engineering Computer Applications (3) [GE]

Prerequisite: Mathematics 150.

Graphical information systems (GIS), specialized civil engineering software, advanced problem solving. Open only to engineering majors.

Change(s): Add course to GE. *Open only to engineering majors* added to course statement.

ELECTRICAL ENGINEERING

1. Change in program.

Electrical Engineering

Electrical Engineering Major

With the B.S. Degree

(Major Code: 09091)(SIMS Code: 443001)

(SIMS Code: 443002 - Georgia)

Paragraph 1 *(no change)*

Preparation for the Major. *(no change)*

General Education. *(no change)*

Graduation Writing Assessment Requirement. *(no change)*

Major. A minimum of 53 upper division units to include the following required and professional elective courses. Required upper division courses in the major: Electrical Engineering 300, 310, 330, 330L, 340, 380, 410, 420, 430, 440, 450, 490; Computer Engineering 375. Professional electives: Twelve units selected from upper division electrical engineering courses and no more than three units from approved upper division courses from other departments. Electrical Engineering laboratory electives: Three units selected from any non-required upper division electrical engineering laboratory courses.

Master Plan. *(no change)*

Change(s): Listing a currently 'required' course EE434 as 'elective', and, simultaneously listing a currently 'elective' course EE450 as 'required.'

FINANCE

1. Change in program.

Finance

Financial Services Major

With the B.S. Degree in Business Administration

(Major Code: 05043) (SIMS Code: 222122)

Paragraphs 1-2 *(no change)*

Preparation for the Major. *(no change)*

Graduation Writing Assessment Requirement. *(no change)*

Major. Forty-one to 42 upper division units consisting of Finance 327, 331, 522, 589; Accountancy 503; Business Administration 300, 310, 323, 350, 360, 370. Business

Administration 404, 405, or 458 (three units); and nine to ten units selected from Finance 326, 421, 427, 431, 435*, 585, 590; Accountancy 326; Economics 320 or 422, 490; and Marketing 377. A "C" (2.0) average or better is required in the courses stipulated here for the major.

* Prerequisite waived for this course.

Change(s): Move FIN 326 from required to an elective option.

2. Change in program.

Finance

Personal Financial Planning Certificate

(SIMS Code: 226601)

Paragraphs 1-3 (*no change*)

The certificate requires 24 units to include Finance 327, 421 or 427, 522, 585, 589, and 590; Accountancy 503; and Business Administration 323. In order to qualify for this certificate, a "C" (2.0) average in the upper division certificate courses is required.

Remainder of description (*no change*)

Change(s): Reducing the 2.7 to 2.0 GPA requirements in upper division certificate classes.

HOSPITALITY AND TOURISM AND MANAGEMENT

1. Change to prerequisites.

Hospitality and Tourism and Management

HTM 431. Convention Services for Hotels (2)

Prerequisites: Hospitality and Tourism Management 301 and 330.

Planning, developing, and implementing hotel meeting and convention services.

Change(s): HTM 330 added as prerequisite.

HUMANITIES

1. New course.

Humanities

JAPANESE CULTURE (C-2)

HUM 380. Japanese Culture (3) [GE]

(Same course as Japanese 380)

Prerequisites: Completion of the General Education requirement in Foundations of Learning II.C., Humanities required for nonmajors.

Significant works of literary, performing, and visual arts to include array of artistic trends, cultural phenomena, historical developments, and socio-political discourses throughout the nation's long and tumultuous history. Taught in English.

2. New course.

Humanities

STUDIES POPULAR CULTURE (C-2)

HUM 410. Studies in Popular Culture (3) [GE]

Prerequisites: Completion of the General Education requirement in Foundations of Learning II.C., Humanities required for nonmajors.

Animated film, comics, literature, live-action film, and television. Representative works to include secondary critical readings. Popular culture informed by significant cultural discourses, historical developments, and political debates.

3. Change in program.

Humanities

Humanities Major

With the B.A. Degree in Liberal Arts and Sciences

(Major Code: 15991)

Emphasis in European Humanities

(SIMS Code: 113505)

Preparation for the Major. *(no change)*

Language Requirement. *(no change)*

Graduation Writing Assessment Requirement. *(no change)*

International Experience. *(no change)*

Major. A minimum of 36 upper division units to include Classics 340, Humanities 380 [or Japanese 380], 390W, 405 [or Religious Studies 405], 406, 407, 408, 409, 410, 490; three units from Geography 336, Political Science 301A, 301B, 302; six units from Art (art history), Comparative Literature, English, History, Humanities, Music, Philosophy, Religious Studies, Theatre, or Women's Studies.

Elective Approval. *(no change)*

Change(s): Addition of Humanities 380 [or Japanese 380] and 410 to major section. Increase of required major units from 33 to 36.

INTERNATIONAL BUSINESS

1. New course.

International Business

DOING BUSINESS LATIN AMER (C-2)

I B 410. Doing Business in Latin America (3)

Prerequisites: Business Administration 310, 350, and 370 with a grade of C (2.0) or better in each course.

Business and managerial methods, practices, and systems in Latin American markets.

2. Change in program.

International Business

International Business Major

With the B.A. Degree in Liberal Arts and Sciences

(Major Code: 05131)

Latin America/Portuguese: Anthropology 442; Economics 464; Geography 324; History 415 [or Latin American Studies 415], 416, 557, 558; International Business 410; Latin American Studies 307 [or Portuguese 307], 325, 366 [or Political Science 366]; Political Science 566, Portuguese 306, 311, 312, 535, 540.

Latin America/Spanish: Anthropology 442; Chicana and Chicano Studies 355 [or Latin American Studies 355]; Comparative Literature 445; Economics 464; Geography 324; History 416, 551, 558; International Business 410; Latin American Studies 350, 366 [or Political Science 366], 420, 545; Political Science 482, 566, 568; Spanish 341, 342, 406B, 407; Women's Studies 512.

Change(s): Addition of I B 410 to Latin America/Portuguese and Latin America/Spanish sections.

JAPANESE

1. New course.

Japanese

JAPANESE CULTURE (C-2)

JAPAN 380. Japanese Culture (3) [GE]

(Same course as Humanities 380)

Prerequisites: Completion of the General Education requirement in Foundations of Learning II.C., Humanities required for nonmajors.

Significant works of literary, performing, and visual arts to include array of artistic trends, cultural phenomena, historical developments, and socio-political discourses throughout the nation's long and tumultuous history. Taught in English.

MANAGEMENT

1. New course.

Management

BUSINESS NEGOTIATION (C-2)

MGT 434. Business Negotiation (3)

Prerequisite: Business Administration 350.

Origins and strategies of abstract and theoretical approaches to bargaining and negotiation in business situations faced by managers and leaders.

MANAGEMENT INFORMATION SYSTEMS

1. Change in program.

Management Information Systems

Information Systems Major

With the B.S. Degree in Business Administration

(Major Code: 07021) (SIMS Code: 222336)

Paragraph 1 (*no change*)

Preparation for the Major. (*no change*)

Graduation Writing Assessment Requirement. Passing the Writing Placement Assessment with a score of 10 or completing one of the approved upper division writing courses (W) with a grade of C (2.0) or better. See “Graduation Requirements” section for a complete listing of requirements.

Major. Forty-four upper division units consisting of Management Information Systems 301, 306, 315, 380, 481, 483; Business Administration 300, 310, 323, 350, 360, 370; Business Administration 404, 405, or 458 (three units); nine units selected from Management Information Systems 305, 375, 396W, 406, 460, 482, 492, 515, 585. A “C” (2.0) average or better is required in the courses stipulated here for the major.

Remainder of description (*no change*)

Change(s): Update Graduation Writing Assessment Requirement section. The new graduation writing assessment requirement will be identical to finance, marketing, and management majors. Change MIS 396W from required to elective. Change the old requirement to take either MIS 483 or MIS 492 to new requirement of MIS 483 (required) and MIS 492 (elective). Add MIS 585 to the list of elective courses in major section.

MATHEMATICS

1. Change to general text and prerequisites.

Mathematics

MATH 141. Precalculus (3) [GE]

Two lectures and two hours of activity.

Prerequisites: Satisfaction of the Entry-Level Mathematics requirement and qualification on the Mathematics Departmental Placement Examination.

Real numbers, inequalities; polynomials; rational, trigonometric, exponential and logarithmic functions; conic sections. Not open to students with credit in Mathematics 105, 121, 124, or 150.

Change(s): *Qualification on the Mathematics Department Proficiency Examination* added as prerequisite and general text statement.

2. Change to description, number, prerequisites, and and title.

Mathematics

PROGRAMMING IN MATH

MATH 340. Programming in Mathematics (3)

Prerequisites: Mathematics 151 and 245 with a grade of C (2.0) or better in each course. **Proof of completion of prerequisites required:** Copy of transcript.

Introduction to programming in mathematics. Modeling, problem solving, visualization. (Formerly numbered Mathematics 242.)

Change(s): Description updated from *Introduction to mathematical programming. Modeling, problem solving, visualization* to what is reflected above. Number changed from 242 to 340. Prerequisites updated from *Credit or concurrent registration in Mathematics 151* to what is reflected above. Title updated from *Mathematical Programming* to *Programming in Mathematics*.

MECHANICAL ENGINEERING

1. Addition of existing course to general education. Change to description and prerequisites.

Mechanical Engineering

M E 202. Computer Programming and Applications (3) [GE]

Two lectures and three hours of activity.

Prerequisite: Mathematics 151.

Principles of programming using Matlab. Syntax topics to include arrays, control flow, data types, functions, and loops. Numerical methods to include curve fitting, Gauss reduction, interpolation, matrix operations, Newton-Raphson, numerical differentiation, and numerical integration. Application areas in mechanical engineering to include dynamic systems, finite element analysis, graphical user interfaces, and image analysis. Open only to engineering majors.

Change(s): Add course to GE. M E 101 and 102 removed as prerequisites. Detailed update to course description. *Open only to engineering majors* added to course statement.

PHILOSOPHY

1. New course.

Philosophy

CONT BRAZILIAN PHILOS (C-2)

PHIL 360. Contemporary Brazilian Philosophers (3)

Prerequisite: Completion of the General Education requirement in Foundations of Learning II.C., Humanities.

Contemporary Brazilian philosophers and their relevance to Brazilian culture and politics.

PHYSICS

1. Change to prerequisites.

Physics

PHYS 354. Modern Physics (3)

Prerequisites: Physics 197 and Mathematics 252 with a grade of C (2.0) or better in each course. Credit or concurrent registration in Mathematics 342A.

Special theory of relativity. Particle properties of electromagnetic radiation, and wave properties of particles. Introduction to quantum theory with applications to atomic structure.

Change(s): MATH 252 added to prerequisites.

POLITICAL SCIENCE

1. Change to description and title.

Political Science

PSYCHOLOGY OF POLITICS

POL S 425. Psychology of Politics (3)

Prerequisite: Political Science 102.

Psychological and social roots of behavior of activists, elected officials, and the mass public. Applications in political science to include campaigns and elections, discrimination, political conflict, public opinion, public policy, and social justice.

Change(s): Description updated from *Social and attitudinal variables in political behavior. Quantitative research data as used in electoral studies. May include a substantial amount of material about foreign political systems* to what is reflected above. Title updated from *Political Behavior* to what is reflected above.

PSYCHOLOGY

1. Change to description and title.

Psychology

INTRO COGNITIVE PSY

PSY 211. Introduction to Cognitive Psychology (3)

Prerequisite: Psychology 101.

Basic principles and research in animal and human cognition.

Change(s): *Learning* replaced with *cognition* in description. Title updated from *Learning* to what is reflected above.

2. Change to description and title.

Psychology

INTERMED COGNITIVE PSY

PSY 380. Intermediate Cognitive Psychology (3)

Prerequisite: Psychology 101. Recommended: Psychology 211.

Research and theory on attention, language, learning, memory, thinking, and understanding.

Change(s): Description updated from *Theory and research on attention, learning, memory, thinking, understanding, and language* to what is reflected above. Title updated from *Cognitive Psychology* to what is reflected above.

RELIGIOUS STUDIES

1. Change in program.

Religious Studies

Religious Studies Major

With the B.A. Degree in Liberal Arts and Sciences

(Major Code: 15101) (SIMS Code: 116101)

Paragraphs 1-2 (*no change*)

Preparation for the Major. (*no change*)

Language Requirement. (*no change*)

Graduation Writing Assessment Requirement. (*no change*)

International Experience. (*no change*)

Major. (*no change*)

Area A, Texts: (no change)

Area B, Traditions: (no change)

Area C, Theories and Methods: (no change)

Area D, Critical Issues in Religion: Religious Studies 341, 356, 358, 363, 364, 370, 376, 379, 380, 390A, 390B, 405 [or Humanities 405], 406, 411, Political Science 562, Women's Studies 515* (6 units)*

Remainder of description (*no change*)

Change(s): REL S 406 and 411 added to Area D.

RHETORIC AND WRITING STUDIES

1. New course.

Rhetoric and Writing Studies

RHETORIC TUTORING WRITING (C-3)

RWS 220. Rhetoric of Written Arguments and the Tutoring of Writing (3) [GE]

Prerequisites: Satisfaction of the SDSU writing competency requirement and Rhetoric and Writing Studies 100 [or English 100], 101, Africana Studies 120, American Indian Studies 120, Chicana and Chicano Studies 111B, or Linguistics 100. **Proof of completion of prerequisites required:** Test scores or verification of exemption; copy of transcript.

Critical thinking, reading, and writing. Rhetoric of written arguments in exploring theories and practices related to learning to write and the tutoring of writing. Cohesion, rhetorical conventions, and structure. Not open to students with credit in Africana Studies 200, American Indian Studies 225, Chicana and Chicano Studies 200, Linguistics 200, or Rhetoric and Writing Studies 200 [or English 200].

SOCIOLOGY

1. New course.

Sociology

NONVIOLENCE PEACE SOC CHG (C-4)

SOC 458. Nonviolence, Peace, and Social Change (3)

Prerequisite: Sociology 101.

Actions, research, strategies, and theories regarding nonviolent social change. Power of collective nonviolent actions through the lenses of global, local, and national conflicts.

STATISTICS

1. New course.

Statistics

R PROGRAMMING & DATA SCI (C-4)

STAT 410. R Programming and Data Science (3)

Prerequisite: Statistics 350B.

Numerical and simulation methods, statistical graphics, and statistical procedures for analyzing data. Logistic regression, multiple linear regression, and one- and two-way ANOVA models. Matrix formulations of regression models.

Report prepared and respectfully submitted by Curriculum Services on behalf of the Undergraduate Curriculum Committee.

To: Senate Executive Committee / Senate

From: Larry S. Verity, Chair
Undergraduate Curriculum Committee

Date: September 13, 2017

Re: 2018-2019 *General Catalog*

INFORMATION (6I-10-17)

AEROSPACE ENGINEERING

1. Change to prerequisite and add course to GE.

Aerospace Engineering

A E 460A. Aerospace Engineering Applications (3) [GE]

One lecture and five hours of design activity.

Prerequisites: Aerospace Engineering 302, 303, 310, and completion of the General Education requirement in Foundations of Learning II.B., Social and Behavioral Sciences.

Student projects in aerospace design.

Change(s): Course added to GE. *And completion of the General Education requirement in Foundations of Learning II.B., Social and Behavioral Sciences* statement added to prerequisites.

BIOLOGY

The Majors

Biology. The Department of Biology offers a dynamic and modern program in biology which prepares students both academically and practically for vocations in science and science-related fields or for entry into graduate studies. The major is designed to present a basic background in modern biology and in the supportive disciplines of chemistry, mathematics and physics, and to provide specialized training selected by the student from a variety of areas. The wide range of faculty expertise and research interest allows the department to offer a curriculum which includes general and advanced courses in plant and animal sciences, marine sciences, genetics and physiology, ecology, molecular biology, microbiology, immunology, endocrinology, entomology, and evolutionary biology. Formal programs of study within the major include Emphases in Cell and Molecular Biology, Ecology, Evolutionary Biology, Marine Biology, and Zoology. Special studies opportunities with SDSU faculty and scientists at cooperating institutions allow qualified students to gain research experience on an individual basis.

Paragraphs 2-4 (*no change*)

Microbiology. Paragraphs 5-6 (*no change*)

Microbiologists find positions with governmental agencies, in university and private research laboratories, in biotechnology, medical and industrial laboratories, in schools as teachers, with scientific supply companies, or with textbook companies. Depending on the situation, a microbiologist may conduct fundamental and applied research, identify disease-causing microorganisms in medical or veterinary specimens, participate in studies of the environment (e.g., soil, ocean, lakes), aid in the manufacture of pharmaceuticals, food, or beverages, or provide quality and safety control. The microbiology major is excellent preparation for entrance into medical, dental, veterinarian, and graduate schools. The Emphasis in Clinical Laboratory Science prepares students to become, after a postgraduate internship, licensed medical technologists or certified public health microbiologists.

Impacted Programs

The biology and microbiology majors are impacted programs. To be admitted to the biology or microbiology major, students must meet the following criteria:

- a. Complete with a minimum GPA of 2.80 and a grade of C (2.0) or better: Biology 203, 203L, 204, 204L, 215; Chemistry 200, 201, 232, 232L; and Mathematics 124. These courses cannot be taken for credit/no credit (Cr/NC);
- b. Have a cumulative GPA of 2.80 or better;

To complete the major, students must fulfill the degree requirements for the major described in the catalog in effect at the time they are accepted into the premajor at SDSU (assuming continuous enrollment).

1. Change in program.

Biology

Biology Major

With the B.A. Degree in Liberal Arts and Sciences

(Major Code: 04011) (SIMS Code: 771402)

Paragraphs 1-2 (*no change*)

Preparation for the Major. Biology 203, 203L, 204, 204L, 215; Chemistry 200, 201, 232, 232L; Mathematics 124; Physics 180A, 180B, 182A, 182B. (37 units)

These preparation for the major courses may not be taken Cr/NC and must be completed with a grade of C (2.0) or better in each class. These courses require a minimum GPA of 2.80 (excluding Physics 180A, 180B, 182A, 182B).

Remainder of description (*no change*)

Changes(s): Physics 180A, 180B, 182A, 182B removed from impaction section. Updates to the preparation for the major section.

2. Change in program

Biology

Biology Major

With the B.S. Degree in Applied Arts and Sciences

(Major Code: 04011) (SIMS Code: 771401)

Paragraphs 1-2 (*no change*)

Preparation for the Major. Biology 203, 203L, 204, 204L, 215; Chemistry 200, 201, 232, 232L; Mathematics 124; Physics 180A, 180B, 182A, 182B. (37 units)

These preparation for the major courses may not be taken Cr/NC and must be completed with a grade of C (2.0) or better in each class. These courses require a minimum GPA of 2.80 (excluding Physics 180A, 180B, 182A, 182B).

Remainder of description (*no change*)

Changes(s): Physics 180A, 180B, 182A, 182B removed from impaction section. Updates to the preparation for the major section.

3. Change in program.

Biology

Biology Major

With the B.S. Degree in Applied Arts and Sciences

(Major Code: 04011) (SIMS Code: 771401)

Emphasis in Cellular and Molecular Biology

(SIMS Code: 771433)

Preparation for the Major. Biology 203, 203L, 204, 204L, 215; Chemistry 200, 201, 232, 232L; Mathematics 124; Physics 180A, 180B, 182A, 182B. (37 units)

These preparation for the major courses may not be taken Cr/NC and must be completed with a grade of C (2.0) or better in each class. These courses require a minimum GPA of 2.80 (excluding Physics 180A, 180B, 182A, 182B).

Graduation Writing Assessment Requirement. (*no change*)

Major. A minimum of 36 upper division units to include Biology 352, 354, 366, 366L, 567, and Chemistry 365. At least two courses must be selected from Biology and Chemistry 496 and/or 596 (maximum 3 units), Biology 350, 480, 490, 510, 511, 528, 549, 554, 556, 557, 562, 567L, 568 [or Bioinformatics and Medical Informatics 568], 570, 575, 576, 584, 485 or 585, 589, 590, and Chemistry 432, 432L. At least one course must be an organismal course selected from Biology 350, 458, 512, 514, 515, 516A, 523, 524, 525, 526, 528, 530, 531, or 535. Approval of the Emphasis in Cellular and Molecular Biology adviser is required for credit in Biology 490, Chemistry 498, Biology or Chemistry 496, 499, and 596 and other courses not listed above to be included in the emphasis. This approval must be filed with the Office of Advising and Evaluations.

Remainder of description (*no change*)

Changes(s): Physics 180A, 180B, 182A, 182B removed from impaction section. Added specific courses to a select-from list of electives. Updates to the preparation for the major section.

4. Change in program.

Biology

Biology Major

With the B.S. Degree in Applied Arts and Sciences

(Major Code: 04011) (SIMS Code: 771401)**Emphasis in Ecology****(SIMS Code: 771434)**

Preparation for the Major. Biology 203, 203L, 204, 204L, 215; Chemistry 200, 201, 232, 232L; Mathematics 124; Physics 180A, 180B, 182A, 182B. A computer programming course (e.g. Computer Science 107) is recommended. (37 units)

These preparation for the major courses may not be taken Cr/NC and must be completed with a grade of C (2.0) or better in each class. These courses require a minimum GPA of 2.80 (excluding Physics 180A, 180B, 182A, 182B).

Graduation Writing Assessment Requirement. *(no change)*

Major. A minimum of 36 upper division units to include Biology 352, 354, 354L, 366, 366L, Chemistry 365, and at least two courses must be selected from Biology 496 and/or 596 (maximum three units), 509, 512, 514, 516A, 516B, 517, 518, 526, 527, 527L, 528, 535, 538 [or Environmental Science 538], 540, 542, 544 [or Environmental Science 544], 560, 562, 597A. At least one course must be an organismal course selected from Biology 458, 512, 514, 515, 516A, 523, 524, 525, 526, 528, 530, 531, or 535. Other electives include all biology courses numbered 350 and above (except Biology 452), and all upper division chemistry courses (except Chemistry 300, 308, 497, 499, and 560). Approval of the emphasis adviser is required for credit in Biology 490, 496, 497, 499, 596, and other courses not listed above to be included in the ecology electives. This approval must be filed with the Office of Advising and Evaluations.

Remainder of description (no change)

Change(s): Reduced number of required and courses provided specific list of elective courses to choose from. Updates to the preparation for the major section.

5. Change in program.

Biology

Biology Major**With the B.S. Degree in Applied Arts and Sciences****(Major Code: 04011) (SIMS Code: 771401)****Emphasis in Evolutionary Biology****(SIMS Code: XXXXXX)**

Preparation for the Major. Biology 203, 203L, 204, 204L, 215; Chemistry 200, 201, 232, 232L; Mathematics 124; Physics 180A, 180B, 182A, 182B. (37 units)

These preparation for the major courses may not be taken Cr/NC and must be completed with a grade of C (2.0) or better in each class. These courses require a minimum GPA of 2.80 (excluding Physics 180A, 180B, 182A, 182B).

Graduation Writing Assessment Requirement. *(no change)*

Major. A minimum of 36 upper division units to include Biology 352, 354, 366, 366L, 509, and Chemistry 365. At least two courses must be selected from Biology 496 and/or 596 (maximum 3 units), 458, 460, 508, 510, 511, 512, 515, 518, 523, 524, 525, 526, 527, 527L, 528, 530, 531, 568 [or Bioinformatics and Medical Informatics 568], or 576. At least one course must be an organismal course selected from Biology 458, 512, 515, 523, 524, 525, 526, 528, 530, or 531. Other electives include all biology courses

numbered 350 and above (except Biology 452), and all upper division chemistry courses (except Chemistry 300, 308, 497, 499, 560). Approval of the emphasis adviser is required for credit in Biology 490, 496, 497, 499, 596, and other courses not listed above to be included in the evolutionary biology electives. This approval must be filed with the Office of Advising and Evaluations.

Remainder of description (*no change*)

Change(s): Reduced number of required and courses provided specific list of elective courses to choose from. Updated program name from *Emphasis in Evolution and Systematics* to *Evolutionary Biology*. Updates to the preparation for the major section.

6. Change in program.

Biology

Biology Major

With the B.S. Degree in Applied Arts and Sciences

(Major Code: 04011) (SIMS Code: 771401)

Emphasis in Marine Biology

(SIMS Code: 771436)

Preparation for the Major. Biology 203, 203L, 204, 204L, 215; Chemistry 200, 201, 232, 232L; Mathematics 124; Physics 180A, 180B, 182A, 182B. (37 units)

These preparation for the major courses may not be taken Cr/NC and must be completed with a grade of C (2.0) or better in each class. These courses require a minimum GPA of 2.80 (excluding Physics 180A, 180B, 182A, 182B).

Graduation Writing Assessment Requirement. (*no change*)

Major. A minimum of 36 upper division units to include Biology 352, 354, 366, 366L, and Chemistry 365. At least three courses must be selected from Biology 496 and/or 596 (maximum 3 units), 512, 514, 515, 516A, 516B, 517, 518, or 542. At least one course must be an organismal course selected from Biology 512, 514, 515, or 516A. The remaining units must be selected from biology courses numbered 350 and above (except Biology 452) and all upper division chemistry courses (except Chemistry 300, 308, 497, 499, and 560). Approval of the emphasis adviser is required for credit in Biology 490, 496, 497, 499, and 596, and other courses not listed above to be included in the marine biology electives. This approval must be filed with the Office of Advising and Evaluations.

Remainder of description (*no change*)

Change(s): Reduced number of required and courses provided specific list of elective courses to choose from. Updates to the preparation for the major section.

7. Change in program.

Biology

Biology Major

With the B.S. Degree in Applied Arts and Sciences

(Major Code: 04011) (SIMS Code: 771401)

**Emphasis in Zoology
(SIMS Code: 771438)**

Preparation for the Major. Biology 203, 203L, 204, 204L, 215; Chemistry 200, 201, 232, 232L; Mathematics 124; Physics 180A, 180B, 182A, 182B. (37 units)

These preparation for the major courses may not be taken Cr/NC and must be completed with a grade of C (2.0) or better in each class. These courses require a minimum GPA of 2.80 (excluding Physics 180A, 180B, 182A, 182B).

Graduation Writing Assessment Requirement. *(no change)*

Major. A minimum of 36 upper division units to include Biology 352, 354, 354L, 366, 366L, and Chemistry 365. At least three courses must be selected from Biology 496 and/or 596 (maximum 3 units), 508, 509, 510, 511, 512, 515, 516A, 518, 523, 524, 525, 526, 527, 527L, 540, 560, or 576. At least one course must be an organismal course selected from Biology 512, 515, 516A, 523, 524, 525, or 526. The remaining units must be selected from biology courses numbered 350 and above (except Biology 452), and all upper division chemistry courses (except Chemistry 300, 308, 497, 499, and 560). Approval of the emphasis adviser is required for credit in Biology 490, 496, 497, 499, 596, and other courses not listed above to be included in the zoology electives. This approval must be filed with the Office of Advising and Evaluations.

Remainder of description *(no change)*

Change(s): Reduced number of required and courses provided specific list of elective courses to choose from. Updates to the preparation for the major section.

8. Change in program.

Biology

Microbiology Major

With the B.A. Degree in Liberal Arts and Sciences

(Major Code: 04111) (SIMS Code: 771452)

Paragraphs 1-2 *(no change)*

Preparation for the Major. Biology 203, 203L, 204, 204L, 215; Chemistry 200, 201, 232, 232L; Mathematics 124; Physics 180A, 180B, 182A, 182B. (37 units)

These preparation for the major courses may not be taken Cr/NC and must be completed with a grade of C (2.0) or better in each class. These courses require a minimum GPA of 2.80 (excluding Physics 180A, 180B, 182A, 182B).

Language Requirement. *(no change)*

Graduation Writing Assessment Requirement. *(no change)*

Major. A minimum of 30 upper division units to include Biology 350, 352, 354, 366, 366L, and Chemistry 365. At least two courses must be selected from Biology 480, 485 or 585, 528, 549, 554, 556, 557, 562, 567, 567L, 568 [or Bioinformatics and Medical Informatics 568], 584, 590, Chemistry 432, or 432L. At least one of these courses must be a laboratory course. Prior approval of the microbiology adviser is required for credit in Biology 496, 596, and other courses not listed above to be included in the electives. This approval must be filed with the Office of Advising and Evaluations.

Remainder of description *(no change)*

Change(s): Reduced number of required and courses provided specific list of elective courses to choose from. Updates to the preparation for the major section.

9. Change in program.

Biology

Microbiology Major

With the B.S. Degree in Applied Arts and Sciences

(Major Code: 04111) (SIMS Code: 771451)

Paragraphs 1-2 *(no change)*

Preparation for the Major. Biology 203, 203L, 204, 204L, 215; Chemistry 200, 201, 232, 232L; Mathematics 124; Physics 180A, 180B, 182A, 182B. (37 units)

These preparation for the major courses may not be taken Cr/NC and must be completed with a grade of C (2.0) or better in each class. These courses require a minimum GPA of 2.80 (excluding Physics 180A, 180B, 182A, 182B).

Graduation Writing Assessment Requirement. *(no change)*

Major. A minimum of 36 upper division units to include Biology 350, 352, 354, 366, 366L, and Chemistry 365. At least four courses must be selected from Biology 480, 485 or 585, 528, 549, 554, 556, 557, 562, 567, 567L, 568 [or Bioinformatics and Medical Informatics 568], 584, 590, Chemistry 432, or 432L. At least two of these courses must be laboratory courses. Prior approval of the microbiology adviser is required for credit in Biology 490, 496, 497, 499, 596, Chemistry 496, 596, and other courses not listed above to be included in the electives. This approval must be filed with the Office of Advising and Evaluations.

Remainder of description *(no change)*

Change(s): Reduced number of required and courses provided specific list of elective courses to choose from. Updates to the preparation for the major section,

10. Change in program.

Biology

Microbiology Major

With the B.S. Degree in Applied Arts and Sciences

(Major Code: 04111) (SIMS Code: 771451)

Emphasis in Clinical Laboratory Science

(SIMS Code: XXXXXX)

Paragraph 1 *(no change)*

Preparation for the Major. Biology 203, 203L, 204, 204L, 215; Chemistry 200, 201, 232, 232L, 251; Mathematics 124; Physics 180A, 180B, 182A, 182B. (42 units)

These preparation for the major courses (excluding Chemistry 251) may not be taken Cr/NC and must be completed with a grade of C (2.0) or better in each class. These courses require a minimum GPA of 2.80 (excluding Chemistry 251, Physics 180A, 180B, 182A, 182B).

Graduation Writing Assessment Requirement. *(no change)*

Major. A minimum of 36 upper division units to include Biology 350, 352, 354, 366, 366L, 480, 485, 584, and Chemistry 365. At least two courses must be selected from Biology 528, 549, 554, 556, 557, 567L, 590, Chemistry 432, or 432L. To be included in this major, courses not listed above must have prior approval of the Microbiology adviser and be filed with the Office of Advising and Evaluations.

Remainder of description (*no change*)

Change(s): Reduced number of required and courses provided specific list of elective courses to choose from. Emphasis renamed from *Emphasis in Clinical Laboratory Science and Public Health Microbiology* to what is reflected above. Updates to the preparation for the major section.

ELECTRICAL ENGINEERING

1. Change to number.

Electrical Engineering

E E 450. Digital Signal Processing (3)

Prerequisite: Electrical Engineering 410.

Discrete-time signals and systems, Sampling, Z-transform, Discrete-time Fourier transform and frequency responses, DFT, FFT, and introduction to IIR and FIR digital filter design. (Formerly numbered Electrical Engineering 556.)

Change(s): The course has been lowered to the 400-level in order to limit enrollment to undergraduate students only.

EXERCISE AND NUTRITIONAL SCIENCES

1. New course.

Exercise and Nutritional Sciences

SPORT, GAMES, AND CULTURE (C-1)

ENS 318. Sport, Games, and Culture (3) [GE]

Prerequisites: Sociology 101 and completion of the General Education requirement in Foundations of Learning IIB. Social and Behavioral Sciences.

Contemporary games and sports. Anthro-historical development of sports and philosophies, political economies, and socio-cultural influences. Psychological performance modalities of modern sport.

EUROPEAN STUDIES

1. Addition of course to GE.

European Studies

EUROP 435. Culture and Identity in Post-Communist Europe (3) [GE]

Prerequisite: Completion of the General Education requirement in Foundations of Learning II.C., Humanities.

Social, economic, and cultural transformations in Europe after the collapse of communism. Daily life under communism and the impact of the collapse of this political system on language, individual identity, space, and community.

Change(s): Addition of course to GE.

HEALTH AND HUMAN SERVICES

1. Change to description.

Health and Human Services

HHS 350. Applied International Health and Human Services (3) [GE]

Prerequisite: Completion of the General Education requirement in Foundations of Learning II.B., Social and Behavioral Sciences. See *Class Schedule* for additional prerequisites.

Selected themes in health and human services. Course taught at SDSU. Includes participation in an approved international program.

Change(s): Description updated from *Examine economic, political, cultural, environmental, health and human services challenges, and variations with respect to disease, mental health, and poverty in a designated non-Western region or country in Asia, Africa, Central and South America* to what is reflected above.

ITALIAN

1. New course.

Italian

BUSINESS ITALIAN (C-2)

ITAL 423. Business Italian (3)

Prerequisite: Italian 212.

Italian advertising, business culture, commercial practices and language, communication, cultural management, current events, marketing entrepreneurship, social and digital media.

MATHEMATICS

1. Change to number.

Mathematics

ABSTRACT ALGEBRA (C-4)

MATH 320. Abstract Algebra (3)

Prerequisites: Mathematics 245 and 254 with a grade of C (2.0) or better in each course. **Proof of completion of prerequisites required:** Copy of transcript.

Elementary number theory and rings to include ideals, polynomial rings, quotient rings, ring homomorphisms and isomorphisms. Introduction to basic aspects of group theory. (Formerly numbered Mathematics 521A.)

Change(s): Course number updated from 521A to 320.

2. Change to description and number.

Mathematics

ADVANCED CALCULUS I (C-4)

MATH 330. Advanced Calculus I (3)

Prerequisites: Mathematics 245 and either 254 or 342A with a grade of C (2.0) or better in each course. **Proof of completion of prerequisites required:** Copy of transcript.

Formal definitions and prove results in analysis within the framework of sequences and functions of a single variable. (Formerly numbered Mathematics 534A.)

Change(s): Description updated from *Completeness of the real numbers and its consequences, sequences of real numbers, continuity, differentiability and integrability of functions of one real variable* to what is reflected above. Course number updated from 534A to 330.

3. Change in program.

Mathematics

Mathematics Major

With the B.A. Degree in Liberal Arts and Sciences

(Major Code: 17011) (SIMS Code: 776301)

Paragraphs 1-2 (*no change*)

Impacted Program. Complete with a grade of C (2.0) or better: Mathematics 150, 151, 245, 252, 254, and Statistics 250. These courses cannot be taken for credit/no credit (Cr/NC). The cumulative GPA in Mathematics 245, 252, and 254 must be a C+ (2.3) or better.

Preparation for the Major. Mathematics 150, 151, 245, 252, 254, and Statistics 250. These courses must be completed with a grade of C (2.0) or better, and cannot be taken for credit/no credit (Cr/NC). The cumulative GPA in Mathematics 245, 252, and 254 must be a C+ (2.3) or better. (21 units) Recommended: Computer Science 107.

Language Requirement. (*no change*)

Graduation Writing Assessment Requirement. (*no change*)

Major. A minimum of 30 upper division units selected with approval of the departmental adviser before starting upper division work to include Mathematics 320, 330, 337, 340, 524; one course selected from Mathematics 520, 530, 531, 537, 538, 541, 542, 543, Statistics 551B; and nine units of electives.

Master Plan. (*no change*)

Change(s): Mathematics 242 becomes Mathematics 340; Mathematics 521A becomes Mathematics 320; Mathematics 521B becomes Mathematics 520; Mathematics 534A becomes Mathematics 330; Mathematics 534B becomes Mathematics 530.

4. Change in program.

Mathematics

Mathematics Major

With the B.S. Degree in Applied Arts and Sciences

(Major Code: 17031)

Emphasis in Applied Mathematics

(SIMS Code: 776313)

Paragraphs 1-2 (*no change*)

Impacted Program. Complete with a grade of C (2.0) or better: Mathematics 150, 151, 245, 252, 254, Statistics 250, and Computer Science 107. These courses cannot be taken for credit/no credit (Cr/NC). The cumulative GPA in Mathematics 245, 252, and 254 must be a C+ (2.3) or better.

Preparation for the Major. Mathematics 150, 151, 245, 252, 254, Statistics 250, and Computer Science 107. These courses must be completed with a grade of C (2.0) or better, and cannot be taken for credit/no credit (Cr/NC). The cumulative GPA in Mathematics 245, 252, and 254 must be a C+ (2.3) or better. (24 units)

Graduation Writing Assessment Requirement. (*no change*)

Major. A minimum of 36 upper division units to include Mathematics 320, 330, 337, 340; 524 or 543; 530 or 531 or 532; Statistics 350A or 550 or 551A; and 15 units of electives in mathematics or an area to which mathematics may be applied (approved by the applied mathematics adviser) excluding Mathematics 302, 303, 311, 312, 313, 315, 342A, 342B, 413, 414, 509.

Remainder of description (*no change*)

Change(s): Mathematics 340 is introduced; Mathematics 521A becomes Mathematics 320; Mathematics 521B becomes Mathematics 520; Mathematics 534A becomes Mathematics 330; Mathematics 534B becomes Mathematics 530.

5. Change in program.

Mathematics

Mathematics Major

With the B.S. Degree in Applied Arts and Sciences

(Major Code: 17031)

Emphasis in Computational Science

(SIMS Code: 776322)

Paragraph 1 (*no change*)

Impacted Program. (*no change*)

Preparation for the Major. (*no change*)

Graduation Writing Assessment Requirement. (*no change*)

Major. A minimum of 39 upper division units to include Mathematics 320, 330, 337, 340; 524 or 543; Computer Science 310; at least nine units selected from Computational Science 526, 536, Computer Science 503, 558, Mathematics 336, 525, 532, 537, 541, 542, 543; three units of Mathematics 499 (Senior Project); and nine units of electives in computer science, mathematics, or statistics (approved by the applied mathematics adviser) excluding Mathematics 302, 303, 311, 312, 313, 315, 342A, 342B, 413, 414, 509.

Master Plan. *(no change)*

Change(s): Mathematics 242 becomes Mathematics 340; Mathematics 521A becomes Mathematics 320; Mathematics 521B becomes Mathematics 520; Mathematics 534A becomes Mathematics 330; Mathematics 534B becomes Mathematics 530.

6. Change in program.

Mathematics

Mathematics Major

With the B.S. Degree in Applied Arts and Sciences

(Major Code: 17031)

Emphasis in Science

(SIMS Code: 776348)

Paragraphs 1-2 *(no change)*

Impacted Program. Complete with a grade of C (2.0) or better: Mathematics 150, 151, 245, 252, 254, Statistics 250, and Computer Science 107. These courses cannot be taken for credit/no credit (Cr/NC). The cumulative GPA in Mathematics 245, 252, and 254 must be a C+ (2.3) or better.

Preparation for the Major. Mathematics 150, 151, 245, 252, 254, Statistics 250, and Computer Science 107. These courses must be completed with a grade of C (2.0) or better, and cannot be taken for credit/no credit (Cr/NC). The cumulative GPA in Mathematics 245, 252, and 254 must be a C+ (2.3) or better. (24 units)

Graduation Writing Assessment Requirement. *(no change)*

Major. A minimum of 36 upper division units to include Mathematics 330, 337, 340; 524 or 543; at least six units selected from Mathematics 320, 525; 530 or 532; 531, 537; 12 units from a science to which mathematics may be applied (these should be from a single science and must be approved by the B.S. adviser); and six units of electives in computer science, mathematics, or statistics excluding Mathematics 302, 303, 311, 312, 313, 315, 342A, 342B, 413, 414, 509.

Master Plan. *(no change)*

Change(s): Mathematics 242 becomes Mathematics 340; Mathematics 521A becomes Mathematics 320; Mathematics 521B becomes Mathematics 520; Mathematics 534A becomes Mathematics 330; Mathematics 534B becomes Mathematics 530.

7. Change in program.

Mathematics

Mathematics Major

In preparation for the Single Subject Teaching Credential With the B.A. Degree in Liberal Arts and Sciences

(Major Code: 17011) (SIMS Code: 776303)

Paragraphs 1-3 (*no change*)

Impacted Program. (*no change*)

Preparation for the Major. Mathematics 150, 151, 241, 245, 252, 254, Statistics 250, and Teacher Education 211A. These courses must be completed with a grade of C (2.0) or better, and cannot be taken for credit/no credit (Cr/NC). (23 units) Recommended: Computer Science 107, Physics 195, 195L, 196, 196L, 197, 197L.

Language Requirement. (*no change*)

Graduation Writing Assessment Requirement. (*no change*)

Major. A minimum of 24 upper division units in mathematics to include Mathematics 302, 303, 320, 330, 414, Statistics 550; an upper division course in geometry; and three units of electives in mathematics approved by the adviser for the major.

Master Plan. (*no change*)

Change(s): Mathematics 242 becomes Mathematics 340; Mathematics 521A becomes Mathematics 320; Mathematics 521B becomes Mathematics 520; Mathematics 534A becomes Mathematics 330; Mathematics 534B becomes Mathematics 530.

MECHANICAL ENGINEERING

1. Addition of existing course to general education. Change to description and grading method.

Mechanical Engineering

SENIOR PROJECT

M E 490A. Engineering Design: Senior Project (3) [GE]

One lecture and six hours of guided design activities.

Prerequisites: Mechanical Engineering 304 (or Civil Engineering 301), 310, 314, 452. Completion of the General Education requirement in Foundations of Learning II.B., Social and Behavioral Sciences.

Applications of engineering principles and design techniques to building and testing of an engineering system. A single project is completed in this two-course sequence and is judged completed upon presentation of an oral and written report. Engineering ethics and practice. Social and behavioral sciences for exploration of human experiences to include cause-and-effect of problem-solution, global awareness, and interdisciplinary impacts of a synthesized solution. Open only to engineering majors.

Change(s): Add course to GE. Abbreviated title updated. Detailed update to course description. *C/N OK* removed from grading method. *Open only to engineering majors* added to course statement.

PROFESSIONAL STUDIES AND FINE ARTS

1. New course.

Professional Studies and Fine Arts

ADAPTATION US ACAD CULTUR (C-2)

PSFA 280. Adaptation to U.S. Academic Culture (3)

Cross-cultural adaptation process of international students to include interactions with American students and theories of intercultural communication.

PUBLIC HEALTH

1. New course.

Public Health

PEER HEALTH EDUCATION (C-5)

P H 480. Peer Health Education (2-3)

Effective methods of communicating health information to their peers. Health issues relevant to the university population. Health promotion strategies and tactics.

RELIGIOUS STUDIES

1. New course.

Religious Studies

CAL RELIGION & SPIRITUAL (C-2)

REL S 382. California Religion and Spirituality (3) [GE]

Prerequisite: Completion of the General Education requirement in Foundations of Learning II.C., Humanities required for nonmajors.

Religious and spiritual landscape of California with examination of new and indigenous religious communities.

SCIENCE

1. New course.

Science

SEM INTRO TO COLLEGE SCI (C-5)

SCI 101. Seminar: Introduction to the College of Sciences (1) Cr/NC

Introduction to the College of Sciences. Advising, careers, departments, fields of study, high impact practices, and skills for success. Connect with administrators, advisers, faculty, students, and other members of the College of Sciences community.

SPEECH, LANGUAGE, AND HEARING SCIENCES

1. Addition of prerequisite.

Speech, Language, and Hearing Sciences

SLHS 300. Introduction to Language Science (3)

Prerequisite: Credit or concurrent registration in Speech, Language, and Hearing Sciences 106 and a cumulative GPA of 2.75 or better.

Structure, acquisition, processing, and neurological organization of language in typical and disordered communication.

Change(s): Addition of SLHS 106 as prerequisite.

2. Change to prerequisite.

Speech, Language, and Hearing Sciences

SLHS 305. Hearing Science (3)

Prerequisite: Credit or concurrent registration in Speech, Language, and Hearing Sciences 106 and a cumulative GPA of 2.75 or better.

Concepts of hearing science. Hearing science components to include physical acoustics, anatomy and physiology of auditory system, and psychoacoustics.

Change(s): *And a cumulative GPA of 2.75 or better* statement added to prerequisite.

3. Addition of prerequisite.

Speech, Language, and Hearing Sciences

SLHS 320. Phonetics (3)

Two lectures and three hours of laboratory.

Prerequisite: Credit or concurrent registration in Speech, Language, and Hearing Sciences 106 and a cumulative GPA of 2.75 or better.

Principles of speech production and practical skills in discriminating and transcribing sounds of various dialects in English and other languages, as well as clinical populations. Competency in IPA broad and narrow transcription, classification of speech sounds, and patterns of speech.

Change(s): Addition of SLHS 106 as prerequisite.

4. Change to prerequisite.

Speech, Language, and Hearing Sciences

SLHS 321. Anatomy and Physiology of Speech (4)

Three lectures and three hours of laboratory.

Prerequisite: Credit or concurrent registration in Speech, Language, and Hearing Sciences 106; Psychology 260, and a cumulative GPA of 2.75 or better.

Anatomy and physiology of respiratory, phonatory, and articulatory systems related to speech.

Change(s): Prerequisites updated from *Credit or concurrent registration in Speech, Language, and Hearing Sciences 106. Recommended: Psychology 260* to what is reflected above.

STATISTICS

1. Change in program.

Statistics

Statistics Major

With the B.S. Degree in Applied Arts and Sciences

(Major Code: 17021) (SIMS Code: 776371)

Paragraphs 1-4 *(no change)*

Preparation for the Major. *(no change)*

Graduation Writing Assessment Requirement. *(no change)*

Major. A minimum of 36 upper division units to include Statistics 350A, 350B, 410, 551A, 551B; nine units selected (with the approval of the undergraduate adviser in statistics) from Statistics 325, 496, 520, 560, 575, 580, 596; 12 upper division units in statistics, mathematics (excluding Mathematics 302, 303, 312, 313, 414), computer science, or a science of application (selected with the approval of the undergraduate adviser in statistics).

Master Plan. *(no change)*

Change(s): STAT 510 replaced with 410 in the major section.

2. Change in program.

Statistics

Statistics Major

With the B.S. Degree in Applied Arts and Sciences

(Major Code: 17021) (SIMS Code: 776371)

Emphasis in Actuarial Science

(SIMS Code: 776372)

Paragraph 1 *(no change)*

Preparation for the Major. *(no change)*

Graduation Writing Assessment Requirement. *(no change)*

Major. A minimum of 36 upper division units to include Statistics 350A, 350B, 551A, 551B, 575; Business Administration 323; Economics 320, 321; Finance 327; three units selected from Statistics 325, 410, 496, 560, 596; six units selected from Finance 421, 427, or an appropriate course selected with the approval of the undergraduate adviser in Statistics.

Master Plan. *(no change)*

Change(s): STAT 510 replaced with 410 in the major section.

3. Change in program.

Statistics

Statistics Major

With the B.S. Degree in Applied Arts and Sciences

(Major Code: 17021) (SIMS Code: 776371)

Emphasis in Data Science

(SIMS Code: XXXXXX)

Paragraph 1 *(no change)*

Preparation for the Major. *(no change)*

Graduation Writing Assessment Requirement. *(no change)*

Major. A minimum of 36 upper division units to include Statistics 325, 350A, 410, 551A, 551B, 580; Mathematics 541; Computer Science 310; Computer Science 503 or 514 or Management Information Systems 380; Linguistics 571 or 572 or 581 [or Computer Science 581]; six upper division units in statistics, computer science, or a science of application with a heavy statistical computing component (selected with the approval of the undergraduate adviser in statistics).

Master Plan. *(no change)*

Change(s): Emphasis name updated from *Emphasis in Statistical Computing* to what is reflected above. Major section updated from *A minimum of 39 upper division units to include Statistics 325, 350A, 510, 551A, 551B, 580; Mathematics 541, Computer Science 310, 320; six units selected (with the approval of the undergraduate adviser in statistics) from Computer Science 503, 514, 520, 550, 558, 559, 560; six upper division units in statistics, computer science, or a science of application with a heavy statistical computing component (selected with the approval of the undergraduate adviser in statistics)* to what is reflected above.

4. Change in program.

Statistics

Statistics Minor

(SIMS Code: 776369)

Paragraph 1 *(no change)*

The minor program includes a combination of courses in applied statistical methods, computer-oriented data analysis, probability, and mathematical statistics, which can be tailored to the student's major, academic, or professional interests. For example, business students interested in actuarial science may wish to consider a minor comprising Statistics 350A, 350B, 551A, and 551B. Students in the social, behavioral, and natural sciences who are particularly interested in applications and data analysis may wish to consider a minor comprising Statistics 350A, 350B, 410, and 520.

Remainder of description *(no change)*

Change(s): STAT 510 replaced with 410 in the minor.

TELEVISION, FILM AND NEW MEDIA

1. Change to grading method and units.

Television, Film and New Media

TFM 490. Internship (1-3) Cr/NC

Prerequisite: Television, Film and New Media 314 (or consent of instructor).

Work with approved agencies off-campus under the combined supervision of agency personnel and instructor. Maximum credit six units.

Change(s): Grading method changed from +-*LETTER (C/N OK)* to *CREDIT/NO CREDIT*. Units changed from three to variable 1-3.

Report prepared and respectfully submitted by Curriculum Services on behalf of the Undergraduate Curriculum Committee.

TO: SEC/Senate

FROM: Mary Ruth Carleton, Vice President, University Relations and Development

DATE: September 19, 2017

RE: Information

The Campaign for SDSU:

As our first ever comprehensive campaign has come to a close, we continue to receive generous gifts in support of the university. Here are recent gifts of note:

Solar Turbines, Inc. made a \$78,400 gift to support the MESA Schools Program in the College of Engineering.

Gifts of \$27,900 from Matt Spathas, \$15,000 from Gerald Starek and \$13,420 from Gene and Kathleen Dente will support Athletics.

Alumni Kirk and Debra Crawford made a \$10,000 gift that will support the Charles W. Lamden School of Accountancy in the Fowler College of Business.

A \$10,000 gift from the G.A. Fowler Family Foundation will support the University House.

An \$80,000 gift from Kevin Munnely will support the College Wide Arts and Letters Critical Thinking Fund in the College of Arts and Letters.

Alumna Diane Gaske made a \$25,000 pledge to provide support for scholarships for Professional Studies and Fine Arts students in the Forensics Program.

A \$22,600 gift from the Sigma Pi Educational Fund of SD will support Athletic scholarships.

A \$40,000 gift from the California Community Foundation will support FEDCO Teacher Grants in the College of Education.

Gifts totaling \$25,000 from Faculty Emeritus Richard D. Wright will provide support to the Women's Studies Fund, the Richard Wright Award in Cartography and the Geography Graduate Reception Endowment in the College of Arts and Letters.

The Cyber Center of Excellence made a \$10,000 gift to support the College of Sciences.

TCF Board Member and alumnus, Ken McCain and his wife, Mollie, an alumna, made a gift of \$20,096 to support Athletics.

A \$250,000 planned gift from C.A. Dunn and his wife, Sharon, will establish the Charles and Sharon Dunn Men's and Women's Tennis Program Endowment.

Thomas and Randi McKenzie made a \$15,000 pledge to provide support to EOP students within the Division of Student Affairs.

Mary Leutloff made a \$60,000 gift to support the Wayne E. & Mary Beiler Leutloff Aerospace Endowment in the College of Engineering.

Matthew Hervey made a \$150,000 gift to support the Guardian Scholars Program.

ChevronTexaco Products Company made a gift of \$12,500 to support scholarships and the Geological Sciences Fund in the College of Sciences.

Alumnus Stuart Naliboff made an \$11,793 gift to support the President's Leadership Fund.

A \$200,000 gift from the Walter J. & Betty C. Zable Foundation will support the SDSU Athletic Director Excellence Fund.

A \$9,460 gift from Sempra Energy will support the Monty Awards in the Alumni Association.

Perry and Phyllis Feuer made a \$12,000 gift to support the San Diego State University Athletic Director Excellence Fund.

The following stories illustrate how donors are inspired to support SDSU:

Alumni Tom and Donna Golich made a \$100,000 pledge to provide scholarship support to students pursuing majors in the School of Communications in the College of Professional Studies and Fine Arts.

Tom and Donna Golich are both alumni of SDSU, where he minored and she majored in communication, and where she was also active on the Aztec Forensics Team. The Goliches felt that their years at SDSU prepared them well for their futures, and thus decided to create a scholarship endowment to support students in the School of Communication who have financial need. In addition to their pledge of \$100,000, the Goliches have also included SDSU in their estate plans to further increase the impact that their endowment will make for students.

Dr. Nancy Federman, an alumna and long-time lecturer in the Department of Sociology, made a \$25,000 pledge and \$25,000 planned gift to establish the Dan Silberman Memorial Endowed Scholarship Fund in the College of Professional Studies and Fine Arts. These scholarships will support students studying in the School of Journalism and Media Studies.

This gift is in honor of her late brother Dan Silberman who was a journalism student at San Diego State University in the 1970s. While a student here, he wrote for The Daily Aztec and continued on to write for the Union-Tribune. He later became a technical writer and most recently was interested in digital and social Media.

Campaign, Presidential & Special Events:

The 3rd annual Zuma Awards were held on Thursday, August 3 at the Parma Payne Goodall Alumni Center. President Roush recognized the contributions and efforts made by 10 staff members in support of the University, the community and their fellow employees.

On Thursday, August 24, President Roush addressed nearly 800 faculty, staff and students at the All-University Convocation, which marked the official beginning of the academic year. The Faculty Monty and Zuma Award recipients were also recognized during the program.

SDSU Alumni:

Aztec Proud, SDSU’s student philanthropy program, set a record this summer for new student donations as 2,427 SDSU students contributed to the program. The result was an increase of 200 student donors over the summer of 2016.

While visiting campus July 13 through August 29, new students contributed a total of \$26,270 to the program run by SDSU Alumni Engagement. The gifts will build reserves and endowments for student scholarships through the Class of 2021 Legacy Program. Last year, Aztec Proud was able to offer scholarships to seven students. The program is expected to generate even more in the coming year.

Media Relations:

2016-17 Marketing and Communications Key Metrics Goals

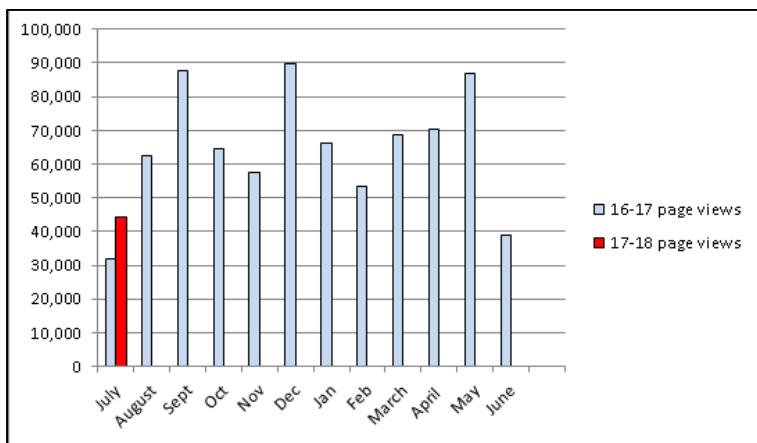
	<i>Month</i>	<i>Year to Date</i>	
SDSU NewsCenter			
Visitors	27,374	27,374	
Page Views	44,188	44,188	
Twitter			
Followers	1,203	1,203	
Impressions (paid)			
Clicks (organic)	2,678	2,678	
Clicks (paid)			
Facebook			
Fans	820	118,353	(Total fans)
Impressions (paid)			
Likes/Comments (organic)	14,356	14,356	

Clicks (paid)		
YouTube		
Views (organic)	6,663	6,663
Views (paid)		

Instagram			
Followers	300	25,900	(Total followers)
Likes (organic)	15,969	15,969	
Impressions (paid)			
Video views (paid)			
Media Relations			
Total Clips	1,428	1,428	
National Hits	188	188	
Major Hits	30	30	
Merit			
Students with Merit Pages	10	9,992	(Total pages)
High Schools reached	39	39	
Social Media Impressions	42,926	42,926	
Community Relations			
Community Members brought to campus for event or activity	-		
Significant individual meetings and interactions in the community	51	51	

Detail

SDSU NewsCenter Top Stories This Month	
SDSU Statement on Social Media Use by Students, Faculty and Staff (1,303), Set Up for Success: Chimezie Ebiriekwe (1,196), Sports MBA Recognized as Top Program (1,031)	
Traffic Sources to SDSU NewsCenter this month	Google (14,459), Facebook (7,127), Twitter (2,069)



Media Relations National Hits

SDSU secured several major media hits in the month of July, including coverage of John Ayers’ study on the increase of Google searches for suicide after the release of “13 Reasons Why” in The Washington Post, Associated Press, Reuters, NBC, CNN and many more; Nada Kassem’s study about the dangers of hookah smoke was covered on CTV News, KPBS, Times of San Diego and Medical Xpress; SDSU’s LGBT studies program was profiled in a story in Insight into Diversity; and the Barron Veterans Center was featured in an article about resources for veterans transitioning from military to civilian life in the American Legion Magazine.

Media Relations Local Hits

Local media coverage this month included coverage of President Roush’s first day at the university on KUSI, KOGO and KFMB; the story of SDSU receiving 134 million in research grants was covered on KGTV, KNSD and KFMB; KNSD, KGTV, KUSI and KPBS attended the 10th annual Pride Flag Raising Ceremony; and the Union Tribune, KGTV and the San Diego Business Journal covered Aaron Elkins’ AVATAR technology.

Merit Monthly Achievements	Total Students	Student Open Rate
1	287	93%

Community Relations

In July, SDSU attended two Collage Area Community Council meetings resuming our presence as a member of the Board. At the first meeting SDSU presented the revised plan for the New Student Resident Hall with support from Senator Toni Atkins’ office. We also met with several key members of the community one on one to discuss the changes.