

# San Diego State University Program Changes

Aerospace Engineering.....	1
Biology .....	2
Child Development.....	3
Computer Engineering .....	4
Computer Science .....	5
Electrical Engineering .....	7
Exercise and Nutritional Sciences .....	8
Liberal Studies .....	9
Mechanical Engineering.....	12
Music .....	14
New Subprograms .....	16
International Business with BA in Liberal Arts and Sciences	
Psychology with BA with BA in Liberal Arts and Sciences	
Public Health with BS in Applied Arts and Sciences	
Child Development with BS in Applied Arts and Sciences	
Deactivated Programs.....	22
Theatre Arts Major	
With the B.A. Degree in Applied Arts and Sciences	
Emphasis in Design for Television and Film	

## Change in Program

### **Aerospace Engineering major**

Students majoring in aerospace engineering must include in their program a sequence of fundamental courses. In addition, the students have the opportunity to satisfy their particular areas of interest by selecting a pattern of study indicated in the sequence below. This pattern includes typical aerospace engineering topics, such as aerospace vehicle design, structural analysis, aerodynamics, and propulsion. This program requires 132 units to include general education.

**Preparation for the Major.** Aerospace Engineering 123, 260, 280; Aerospace Engineering 200 [or Mechanical Engineering 200]; Aerospace Engineering 220 [or Mechanical Engineering 220]; Biology 100 or 101; Chemistry 202 (or 200); Electrical Engineering 204; Mathematics 150, 151, 252; Mechanical Engineering 190; Physics 195, 195L, 196. (44 units)

Remainder of preparation for the major (*no change*)

**Graduation Writing Assessment Requirement.** (*no change*)

**Major.** A minimum of 49 upper division units to include Aerospace Engineering 301, 302, 303, 310, 320, 331, 340, 341, 403, 410, 430, 440, 460A, 460B; Civil Engineering 301 (or Mechanical Engineering 304), 302; and six units selected from Aerospace Engineering 510, 520, 530, 535 [or Mechanical Engineering 535], 540, 546, 550.

Remainder of description (*no change*)

Change(s): Reduced units from 140 to 132. Reduced preparation for the major units from 50 to 44. Reduced major units from 51 to 49. Removed the following required courses: PHYS 197, M E 101, 202, 240, 350, A E 515. Added the following new courses to required courses: A E 260, 331, M E 190.

## Biology

### **Biology Major in preparation for the Single Subject Teaching Credential in Science/Biological Sciences**

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

Students applying to the College of Education's graduate program for the Single Subject Teaching Credential in Science/Biological Sciences must be certified for subject matter competency. This certification requires either (1) passing the required examinations (CSET), or (2) being approved by this department as having completed the subject matter preparation program described below.

Certification through the accomplishment of appropriate coursework requires (1) completion of the courses described under the General Biology Degree Requirements, B.S. degree (preparation for the major and major) (it is recommended that Biology 497 or 499 be taken as electives for the major); (2) earning a grade of B (3.0) or better in Teacher Education 331\*; (3) completing Philosophy 332 [or Sustainability 332], Astronomy 310, and Geological Sciences 412. Teacher Education 280, Special Education 450, and Education 451 are recommended, as they are required Teacher Credential Program prerequisites. No coursework substitutions are permitted for the SSTC program of study. The Department of Biology credential adviser (LS-135) must be consulted for certification.

Please refer to the Teacher Education section of this catalog for other requirements and prerequisites for the credential program.

#### **Time Limitation.** *(no change)*

\*Teacher Education 331 may count as a biology non-lab elective in this program with prior biology adviser approval.

Change(s): Several required courses dropped from program and offer general education alternatives to meet the alignment requirements. This program offers a simpler pathway than before for Biology majors preparing to enter the Single Subject Credential Program for Life Sciences

## Child and Family Development

### **Child Development Major**

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

Paragraphs 1-2 (*no change*)

**Preparation for the Major.** (*no change*)

**Graduation Writing Assessment Requirement.** (*no change*)

**Major.** A minimum of 53 upper division units to include Child and Family Development 335, 354, 370, 375A, 375B, 375C, 475, 537, 560, 575, 578, 590, 598, and two units from CFD 378A (one unit), CFD 378B (one unit), CFD 378C (one unit), or CFD 378D (one unit).

Twelve elective units selected from Child and Family Development 377, 380, 390, 477, 536, 565, 577, 580, 585, 595, 596, with approval of the undergraduate adviser. Students may take more than one capstone course to fulfill the 12 units of electives.

**Study Abroad.** Courses taken as part of study abroad may count toward the completion of the child development degree. Students must consult with the undergraduate adviser to make sure their selection of classes will qualify.

**Research.** Selected topics are determined by the department. Contact the undergraduate adviser for directions to register for Child and Family Development 499. Students may go through an application process to be matched with a faculty member overseeing various research opportunities.

**Community Based Learning.** Students work directly with children and service providers in preselected community outreach programs/agencies to further their career and professional development. Students register in Child and Family Development 497 and work under supervision of faculty as well as service providers.

**Reflective Learning Portfolio (Child and Family Development 598).** This is a required capstone course. Students are required to prepare a portfolio to reflect, integrate, and synthesize their cumulative learning experience acquired in child and family development courses, study abroad programs, involvement in research projects with faculty, and/or internships. The reflective portfolio will be a capstone culminating experience to provide the opportunity to integrate knowledge and understanding of the child and family development curriculum with their academic and personal growth.

**Capstone Requirement.** Three units must be selected from Child and Family Development 497, 499, or study abroad. If students wish to complete more than one capstone option, they may do so to fulfill program electives.

Change(s): Removed specializations. Major now requires a minimum of 53 upper division units, which includes 38 units of core required courses, 12 elective units, and 3 capstone units of field experience, research, or study abroad (detailed below). Updated required core courses and electives. Students may also take more than one capstone course to help fulfill their 12 units of electives (see capstone section below). Three units of CFD 499 can be taken as an elective.

Computer Engineering

**Computer Engineering Major  
With the B.S. Degree**

This program requires 126 units to include general education.

**Preparation for the Major.** *(no change)*

**Graduation Writing Assessment Requirement.** *(no change)*

**Major.** A minimum of 45 upper division units to include Computer Engineering 361, 375, 470, 470L, 475, 490, 560; Electrical Engineering 300, 310, 330, 330L, 410; three approved elective courses selected from computer engineering, electrical engineering, or other approved elective (9 units); one approved technical elective courses in computer engineering, computer science, or electrical engineering (3 units). After enrollment in Computer Engineering at SDSU, the Computer Engineering major must take all upper division computer science and engineering courses at SDSU unless prior approval is obtained from the department.

Remainder of description *(no change)*

Change(s): Reduced units from 132 to 126. Reduced major units from 51 to 45. Two elective courses (6 units) have been omitted.

## Computer Science

### The Major

Computer science is the study of computers and their applications. It is concerned with methods for storing and retrieving information, with the design and use of languages for writing computer programs, with the hardware systems that interpret such languages, and with the theoretical principles that form the foundations of computing. Computer science includes a wide variety of specialties and application areas such as artificial intelligence, computer vision, computer networks, data science, robotics, simulation, and systems programming.

The Bachelor of Science degree in computer science is designed to provide students with a fundamental understanding of modern computing methodology and programming practices along with a complementary knowledge of hardware. The first two years provide the basic preparation in programming, data structures and architecture. The final two years are devoted to more advanced fundamentals and specialized electives in the areas of computer systems, data science, and intelligent systems.

Paragraph 3 (*no change*)

### Impacted Program

Paragraph 1 (*no change*)

- a. Complete preparation for the major. Computer Science 150, 150L, 160, 160L, 210, 240, 250; Mathematics 150, 151, 245, 254; Physics 195, 195L, 196, 196L; and Statistics 250 must be completed with a minimum grade of C (2.0) and cannot be taken for credit/no credit (Cr/NC);

Reminder of description (*no change*)

### Computer Science Major

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

Paragraphs 1-2 (*no change*)

**Preparation for the Major.** Computer Science 150, 150L, 160, 160L, 210, 240, 250; Mathematics 150, 151, 245, 254; Physics 195, 195L, 196, 196L; 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). (42 units)

**Graduation Writing Assessment Requirement.** (*no change*)

**Major.** A minimum of 36 upper division units to include Computer Science 370, 450, 460, 480, 520, Statistics 550.

**Elective Courses (18 units).** In consultation and with the approval of the adviser, 18 units of courses are required from courses listed under the following areas A, B, C and D with no more than six units from the area D.

- a. **Computer Systems.** Computer Science 470, 530, 532, 545, 546, 562, 572, 574, 576, 578.
- b. **Intelligent Systems.** Computer Science 553, 549, 556, 559, 561, 583.
- c. **Data Sciences.** Computer Science 503, 514, 537, 558, 577, 581, 582.
- d. **Special Courses.** Computer Science 496, 497, 498, 499, 596.

Reminder of description (*no change*)

Change(s):

1. Preparation for major courses have undergone substantial changes as follows: (1a) CS107-Introductory Programming and CS108-Intermediate Programming have been updated as CS150 and CS160 to include more material with the addition of lab components CS150L (1 unit) and CS160L (1 unit). (1b) CS237- Machine Organization and Assembly Language has been updated into CS240-Computer Organization to teach interconnection between software and hardware. (1c) A new course, CS250 Introduction to Software Systems, has been added that introduces principles and practices for engineering software systems early on in the program. (1d) CS310-Data Structures has been updated and its number has been changed to CS210 as many CS 300, 400 and 500 level courses have this fundamental CS course as prerequisite.

2. Required science courses: Required mathematics courses have not changed, they remain as Math 150, 151, 245, 254 and STAT 250. The free choice of one-year sequence in science courses - physics, chemistry and biology - has been restricted to physics courses as they are more relevant to CS, and also help in complying with the CSU's 50% rule.

3. Upper division required courses have also gone through several changes as follows: (3a) A new course CS450 - Introduction to Artificial Intelligence, has been added. This course introduces a subject that in recent years has matured and has become a main stream computer science topic with hugely growing applications and job opportunities. (3b) CS560-Algorithm and their Analysis, as well as CS570-Operating Systems have now been somewhat redesigned as CS460 and CS480. Renumbering these courses would allow students to take subsequent courses in a timely manner. In addition, CS560 and CS570 were not available for graduate credit, and being 500 level courses required checking and also confusion among graduate students. By demoting their numbers this problem is resolved.

4. Elective courses: The elective courses have been structured, and three areas of computer science that are much needed in industry and their relevant courses have been identified. The areas are identified as (i) Computer Systems, (ii) Intelligent Systems and (iii) Data Science. While students can take their electives from courses under any of the three areas, the division of courses into these areas provides a guidance for students if they choose to specialize in one or two areas. In addition, several new courses have been introduced to keep up with the trends and applications. These new courses are CS549-Machine Learning, CS561-Natural Language Processing, CS577- Principles and Techniques of Data Science and CS578-Wireless Networks. In addition, two courses CS553-Neural Networks and CS556-Robotics have been updated to keep up with the new developments in these areas.

## Electrical Engineering

### **Electrical Engineering Major**

#### **With the B.S. Degree**

This program requires 126 units to include general education. In addition, the total number of units specified in each elective category represents a minimum requirement. These are Upper Division Engineering Elective, Professional Electives, and Electrical Engineering Laboratory Electives.

**Preparation for the Major.** *(no change)*

**Graduation Writing Assessment Requirement.** *(no change)*

**Major.** A minimum of 46 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: Six 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: Two units selected from any non-required upper division electrical engineering laboratory courses.

Remainder of description *(no change)*

Change(s): Reduced units from 133 to 126. Reduced major units from 53 to 46. Upper division electives changed from 12 units to six. E E upper division lab electives changed from 3 units to two.



Exercise and Nutritional Sciences

**Kinesiology Major**

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

**Emphasis in Fitness Specialist**

**Preparation for the Major.** Exercise and Nutritional Sciences 200, 265, 265L; Biology 100, 100L, 212; Chemistry 100; Communication 103; Gerontology 101; Nutrition 201; Physics 180A, 182A; Psychology 101; Sociology 101; and one of the following: Biology 215, Economics 201, Psychology 280, Sociology 201, Statistics 119. (40 units)

**Graduation Writing Assessment Requirement.** *(no change)*

**International Experience.** *(no change)*

**Major.** A minimum of 51 upper division units to include Exercise and Nutritional Sciences 303, 304, 304L, 305, 306, 307, 322, 332, 333, 340, 340L, 433, 434, 437A (one unit) or 437B (one unit), 438, 439, 440; Biology 336; Communication 321; Gerontology 310. Biology 336 will also satisfy three units of the General Education requirement in IV.A. Recommended: Students should take Health and Human Services 350 to satisfy the General Education requirement in IV.B.

Change(s): Replaced course number ENS 432 & 432L to new course number ENS 322. ENS 340 to be added to the upper division major. Replaced ENS 401B with ENS 340L. Replaced course number ENS 388A or 388B to new course number ENS 437A or 437B. Added 265L into lower division major preparation. **Added Physics 180A and Physics 182A** into lower division major preparation.

## Liberal Studies

### **Impacted Program**

The liberal studies major is an impacted program. To be admitted to the liberal studies major with an emphasis in elementary education, integrated teacher education program (ITEP-SS), mathematics, or science, students must meet the following criteria:

- a. Complete a minimum of 60 transferable semester units;
- b. Have a cumulative GPA of 2.70 or better;
- c. Complete all courses listed in Preparation for the Major with a grade of C (2.0) or better. These courses cannot be taken for credit/no credit (Cr/NC);
- d. Declare the liberal studies major.

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

### **Liberal Studies Major**

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

#### **Emphasis in Education-Generalist**

#### **Open only to AA-T/TMC for Elementary Teacher Education**

**Preparation for the Major.** *(no change)*

**Graduation Writing Assessment Requirement.** *(no change)*

**International Experience.** *(no change)*

**Major including required focus.** *(no change)*

① The statewide TMC in liberal studies includes courses equivalent to the Lower Division Core completed by students in the Elementary Education, Mathematics, and Science emphases with the following distinctions: courses equivalent to Music 151 and Theatre 100 are additional choices for the I.C.2. Visual and Performing Arts requirement. The foci for the Education-Generalist emphasis does not include a breadth requirement for Chemistry 308 or Natural Science 100 because this requirement is part of the TMC.

Remainder of description *(no change)*

Change(s): Updated impaction and footnote information to reflect students do not need to fulfill PHIL/REL/FOREIGN LANG requirements for this program.

### **Emphasis in Education-Generalist**

Emphasis content *(no change)*

① The statewide TMC in liberal studies includes courses equivalent to the Lower Division Core completed by students in the Elementary Education, Mathematics, and Science emphases with the following distinctions: courses equivalent to Music 151 and Theatre 100 are additional choices for the I.C.2. Visual and Performing Arts requirement. The foci for the Education-Generalist emphasis does not include a breadth requirement for Chemistry 308 or Natural Science 100 because this requirement is part of the TMC.

Remainder of footnote *(no change)*

Change(s): The existing program requires students to take PHIL/REL/FOREIGN LANG. The new program will not have this requirement.

### **Emphasis in Elementary Education**

**Preparation for the Major.** Complete 43 units of lower division core plus Exercise and Nutritional Sciences 241A, 241B (with a grade of C [2.0] or better); Mathematics 211 (with a grade of C [2.0] or better); Mathematics Education 212 (2 units); Music 102; Natural Science 100 or Chemistry 308 [SDSU Imperial Valley only]. Exercise and Nutritional Sciences 241A, 241B and Mathematics 211 may not be taken for credit/no credit (Cr/NC). (56 units)

**Graduation Writing Assessment Requirement.** *(no change)*

**International Experience.** *(no change)*

**Major including required focus and option.** (51-57 units)

[NOTE: Plus additional lower division courses.]

Upper Division Core (41 units):

Liberal Studies: Liberal Studies 300, 498 (1 unit);

Remainder of description *(no change)*

Change(s): The existing program requires students to take PHIL/REL/FOREIGN LANG. The new program will not have this requirement. The literature area will specifically require ENGL 220. CLT 270A and 270B will not be options. Minimum 2 units specified for MTHED 212. Minimum 1 unit specified for LIB S 498. Units have been adjusted

### Emphasis in Mathematics

**Preparation for the Major.** Complete 43 units of lower division core and Exercise and Nutritional Sciences 241A, 241B (complete with a grade of C [2.0] or better); Mathematics 211 (complete with a grade of C [2.0] or better); Mathematics Education 212 (2 units); Music 102; Natural Science 100 or Chemistry 308 [SDSU Imperial Valley only]. Exercise and Nutritional Sciences 241A, 241B and Mathematics 211 may not be taken for credit/no credit (Cr/NC). (56 units)

**Graduation Writing Assessment Requirement.** *(no change)*

**International Experience.** *(no change)*

**Major including required focus and option.** (51 units)

**Upper Division Core (41 units):** [NOTE: Plus additional lower division units]

**Liberal Studies:** Liberal Studies 300, 498 (1 unit);

Remainder of description *(no change)*

Change(s): The existing program requires students to take PHIL/REL/FOREIGN LANG. The new program will not have this requirement. The literature area will specifically require ENGL 220. CLT 270A and 270B will not be options. Minimum 2 units specified for MTHED 212. Minimum 1 units specified for LIB S 498. Units have been adjusted.

### Emphasis in Science

**Preparation for the Major.** Complete 43 units of lower division core and Exercise and Nutritional Sciences 241A, 241B (complete with a grade of C [2.0] or better); Mathematics 211 (complete with a grade of C [2.0] or better); Mathematics Education 212 (2 units); Music 102; Natural Science 100 or Chemistry 308 [SDSU Imperial Valley only]. Exercise and Nutritional Sciences

241A, 241B and Mathematics 211 may not be taken for credit/no credit (Cr/NC). (56 units)

**Graduation Writing Assessment Requirement.** (*no change*)

**International Experience.** (*no change*)

**Major including required focus and option.** (45 units)<sup>①</sup>

**Upper Division Core (41 units):** [NOTE: Plus additional lower division units]

**Liberal Studies:** Liberal Studies 300, 498 (1 unit);

Remainder of description (*no change*)

Change(s): The existing program requires students to take PHIL/REL/FOREIGN LANG. The new program will not have this requirement. The literature area will specifically require ENGL 220. CLT 270A and 270B will not be options. Minimum 2 units specified for MTHED 212. Minimum 1 units specified for LIB S 498. Units have been adjusted.

## Mechanical Engineering Major With the B.S. Degree

This program requires 126 units to include general education. In addition, the total number of units specified in each elective category represents a minimum requirement.

All students in mechanical engineering pursue a common program of basic sciences, engineering, and mechanical engineering fundamentals. Students are provided with the opportunity to select a pattern of study to satisfy their areas of interest. This pattern of study is indicated in the sequence known as “professional electives” and may be selected from available courses in controls, energy conversion, fluid mechanics, heat transfer, machine design, materials, mechanics, thermodynamics, vibrations, and other areas.

**Students must complete all upper division courses in the major within seven years prior to graduation. Students who will have completed any of those courses more than seven years before the projected date of graduation must contact the department chair for information about ways to certify knowledge of current course content.**

**Preparation for the Major.** Mechanical Engineering 190, 200 [or Aerospace Engineering 200], 202, 220 [or Aerospace Engineering 220], 240, 241; Aerospace Engineering 280; Biology 100 or 101; Chemistry 202 (or 200); Electrical Engineering 204; Mathematics 150, 151, 252; Physics 195, 195L, 196, 196L. (48 units)

Remainder of preparation for the major description (*no change*)

**Graduation Writing Assessment Requirement.** (*no change*)

**Major.** A minimum of 39 upper division units to include Mechanical Engineering 304 (or Civil Engineering 301), 314, 330, 350, 360, 452, 490A, 490B, 495; Aerospace Engineering 341. Professional electives: six units of coursework to be selected from one of either mechanical systems or thermal systems areas, with at least three units at the 500-level; and six units of additional coursework selected from any 400- or 500-level mechanical engineering course. Students may select professional electives from other departments, with departmental approval.

**Mechanical Systems:** Mechanical Engineering 420, 430, 520, 530, 532, 535 [or Aerospace Engineering 535], 540, 543, 580, 585.

**Thermal Systems:** Mechanical Engineering 450, 552, 554, 555, 556, 585.

**Master Plan.** The master plan provides an advising record and a roadmap toward graduation for mechanical engineering majors. The master plan must be filed electronically with the department (mech.engineering@sdsu.edu). All students transferring from another institution are required to file the master plan at the time of transfer. Current SDSU students are required to file the master plan as part of their course requirements in Mechanical Engineering 190. Students are encouraged to seek the guidance of their faculty advisers when completing the master plan. If there is any change to the course sequence listed in the master plan that is already on file, it must be updated and refiled. All students must have an updated master

plan on file in the department prior to enrollment in Mechanical Engineering 350 and 490A. All course substitutions must be approved by the department chair prior to enrolling in the course.

Change(s): Reduced units from 138 to 126. Reduced preparation for the major units from 51 to 48. Reduced major units from 48 to 39. Removed PHYS 197, M E 310, M E 351, M E 520, and M E 555 from the core requirements. Increased the number elective requirements from three to four with two of the electives being free and the other two having to be selected from a set of courses in either the mechanical systems area or the thermal systems area.

### **Mechanical Engineering BS/MS 4+1 Degree Program/B.S. and M.S. in Mechanical Engineering**

Students must complete 150 units to be simultaneously awarded the B.S. degree in mechanical engineering and the M.S. degree in mechanical engineering. Students can apply for admission to the BS/MS 4+1 (B.S. and M.S. in Mechanical Engineering) degree program when they have successfully completed a minimum of 82 units and not more than 97 units. These units must count towards one or the other of the two SDSU degree programs (BS or MS) that will ultimately be awarded in the dual degree program. All students must have a satisfactory score [minimum of 308 for combined verbal and quantitative on the Graduate Record Examination (GRE) General Test] and a minimum overall GPA of 3.0.

Reminder of description (*no change*)

Change(s): Reduced units from 159 to 150; *90 units or a maximum of 115* changed to *82 units and not more than 97 units*.

### **Mechanical Engineering BS/MS 4+1 Degree Program B.S. in Mechanical Engineering and M.S. in Bioengineering**

Students must complete 150 units to be simultaneously awarded the B.S. degree in mechanical engineering and the M.S. degree in bioengineering. Students can apply for admission to the BS/MS 4+1 degree program (B.S. in Mechanical Engineering and M.S. in Bioengineering) when they have successfully completed a minimum of 82 units and not more than 97 units. These units must count towards one or the other of the two SDSU degree programs (BS or MS) that will ultimately be awarded in the dual degree program. All students must have a satisfactory score [minimum of 308 for combined verbal and quantitative on the Graduate Record Examination (GRE) General Test] and a minimum overall GPA of 3.0.

Reminder of description (*no change*)

Change(s): Reduced units from 159 to 150; *90 units or a maximum of 115* changed to *82 units and not more than 97 units*.

### **Bachelor of Music Degree in Applied Arts and Sciences**

Paragraph 1-2 (*no change*)

**Preparation for the Major.** All majors must fulfill the requirements in one of the following areas of specialization.

**d. Jazz Studies (SIMS Code: 665378).** Music 105 (or passing placement examination), 106A, 106B, 110A-110B, 151, 166, 204, 205A, 205B, 266; six units selected from music courses numbered 170 through 189; six units of Music 251 (eight units if piano is primary instrument); two units of lower division music electives. (35-37 units) Students with piano as primary instrument are not permitted in Music 110A or 110B (must complete eight units of Music 251 to compensate).

**Track 3 – Music Recording Technology and Audio Design (SIMS Code: 665326):** Music 105 (or passing placement examination), 106A, 106B, 110A-110B, 151, 162, four units selected from Music 170 through 189; 205A, 205B, two units of Music 207, 262, 290 [or Dance 290]; Art 101, Art 103 or 240; Theatre 240; Computer Science 100 or 150. (40 units)

**Track 3 – Music Recording Technology and Audio Design:** Music 305A, 305B, 308A, 308B, four units of Music 360, 408A, 460, six units of Music 530, Music 560 or Television, Film and New Media 321; nine units of upper division music electives selected from Music 405A, 405B, 554, 561; one unit from music courses numbered 370 through 389; Theatre 548; one course selected from Art 344, Dance 371 or 471. (46-47 units)

Change(s): Removed MUSIC 206A-B, adjusted units, replaced PSY 101 with THEA 240 and replaced CS 107 with 150 in the preparation for the major section. Added TFM 321 as option in the major section.

### **Statistics Major**

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

#### **Emphasis in Data Science**

Paragraph 1 (*no change*)

**Preparation for the Major.** Statistics 200, 250, Mathematics 150, 151, 245, 252, 254, Computer Science 150, 160. Mathematics 150 and 151 must be completed with a minimum grade of C (2.0) and cannot be taken for credit/no credit (Cr/NC). (31 units)

Remainder of description (*no change*)

Change(s): Replaced CS 107 and 108 with 150 and 160 respectively and added STAT 200 to the preparation section. Adjusted units by three.

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## **New subprograms**

### International Business

#### **International Business Major**

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

**(Major Code: 05131)**

<b>Language</b>	<b>Region</b>	<b>SIMS Code</b>
European Languages	North Atlantic	<b>XXXXXX</b>

**Preparation for the Major.** (Complete I, II, and III: 39-46 units)

#### **II. Language Emphasis** (choose one language): Paragraph 1 (*no change*)

European Languages: Rhetoric and Writing Studies 290 and one of the following:  
French 100A, 100B, 201; or German 100A, 100B, 202; or Italian 100A, 100B, 201; or Portuguese 101, 102, 203; or Spanish 101, 102, 201. (15-16 units)

#### **III. Regional/Cultural Studies Emphasis** (choose one region):

*North Atlantic:* European Studies 101 or History 106 (recommended)

**Major.**

#### **II. Language Emphasis** (choose one language):

European Languages: Communication 371; Rhetoric and Writing Studies 390W; and Journalism and Media Studies 460 or 462, or Linguistics 352, or Marketing 373. (9-10 units)

#### **III. Regional/Cultural Studies Emphasis** (Choose one region/language combination).

*North Atlantic/European Languages:* Economics 330, 360; European Studies 301, 424, 501; History 408, 418, 512B; Political Science 356, 375.

### International Business

#### **International Business Major**

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

**(Major Code: 05131)**

<b>Language</b>	<b>Region</b>	<b>SIMS Code</b>
Asian Languages	Singapore	<b>XXXXXX</b>

**Preparation for the Major.** (Complete I, II, and III: 39-46 units)

#### **II. Language Emphasis** (choose one language): Paragraph 1 (*no change*)

Asian Languages: Rhetoric and Writing Studies 290 and one of the following:  
Chinese 101, 102, 201; or Japanese 111, 112, 211; or Korean 101, 102, 201. (18 units)

#### **III. Regional/Cultural Studies Emphasis** (choose one region):

*Singapore:* Asian Studies 100 (3 units)

**Major.**

#### **II. Language Emphasis** (choose one language):

Asian Languages: Communication 371; Rhetoric and Writing Studies 390W; and Journalism and Media Studies 460 or 462, or Linguistics 352, or Marketing 373. (9-10 units)

### III. Regional/Cultural Studies Emphasis (Choose one region/language combination).

**Singapore/Asian Languages:** Asian Studies 300, 320, 421 [or History 421], 458 [or Religious Studies 458]; Economics 330; History 420; Political Science 362, 575; Religious Studies 345.

Psychology

#### **Psychology Major**

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

**(Major Code: 20011)**

**Emphasis in Neuroscience**

**(SIMS Code: XXXXXX)**

This emphasis offers students an opportunity to complete a four-course sequence (within the scope of a bachelor's degree in psychology) that will help them on the job market in research assistant and coordinator positions in neuroscience and related fields as well be more competitive for admission to graduate programs in neuropsychology and neuroscience areas. Students will learn about theories, research, and practice in neuroscience. Advanced courses will provide students with opportunities to complete projects and written assignments.

A minor is not required for this major. However, depending on career goals, students may wish to consider minors in areas such as biology, chemistry, gerontology; speech, language, and hearing sciences, and others.

**Preparation for the Major.** Psychology 101, 201, 211, 230, 260, 280, and Biology 100 (or Biology 203). (20 units) With the exception of Psychology 201, these prerequisite courses may not be taken for credit/no credit (Cr/NC). The minimum grade in 101, 230, 280 and Biology 100 (or Biology 203) is C (2.0) or better. The minimum grade in Psychology 211 and 260 is B (3.0) or better. **NOTE:** Psychology majors may use Psychology 280 to satisfy Mathematics/Quantitative Reasoning General Education requirement. **NOTE ALSO:** A college level statistics course will be accepted from another department (Biology 215; Civil Engineering 160; Economics 201; Political Science 201; Sociology 201; Statistics 119 or 250) combined with Psychology 281 in lieu of Psychology 280.

**Language Requirement.** Competency (successfully completing the third college semester or fifth college quarter) is required in one foreign language to fulfill the graduation requirement. Refer to section of catalog on "Graduation Requirements."

**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.

**Requirements for the Major.** A minimum of 31 upper division units in psychology to include Psychology 301 or 410 and 12 units to include three units from either Psychology 360 or 362, and nine units selected from Psychology 361, 365, 561, 568, and 569.

**Methods.** All majors must complete Psychology 301 or 410 or both. Psychology 301 is suitable for most psychology majors, including those planning to enter the job market after graduation, those undecided about career plans, and those planning to pursue graduate work in related fields such as counseling.

Students planning to pursue graduate work in psychology (doctoral degrees) are encouraged to take Psychology 410.

**NOTE:** Students enrolling in these courses must have earned a B or better in Psychology 280 or its equivalent. Students unsure of their statistical or computer competence may wish to take Psychology 301 before enrolling in Psychology 410.

**Breadth.** All majors must complete three courses or nine units; one course selected from groups I, II, and III:

**Group I.** Psychology 340 or 344.

**Group II.** Psychology 319, 351 or 370.

**Group III.** Psychology 331, 332, 333, 350, or 407.

**Group IV.** Satisfied by major core courses.

An additional 5-6 elective units selected from 300- to 500-level psychology courses to satisfy the 31 units required for the psychology major.

## Public Health

### **Public Health Major**

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

**(Major Code: 12141)**

#### **Emphasis in Environmental Health**

**(SIMS Code: XXXXXX)**

**Preparation for the Major.** Public Health 101, 292; Biology 100, 100L, 211, 211L, 212; Chemistry 100, 130; Mathematics 140; Psychology 101, 280. (35 units)

Public Health 101 and 292 may not be taken Cr/NC. The minimum grade for Public Health 101 and 292 is B (3.0) or better. Each remaining course in preparation for the major must be completed with a minimum grade of C (2.0). These courses cannot be taken for credit/no credit (Cr/NC). Complete all courses in preparation for the major with a minimum GPA of 2.75.

**Graduation Writing Assessment Requirement.** Passing the Writing Placement Assessment with a score of 10, or taking Rhetoric and Writing Studies 305W or Linguistics 305W with a grade of C (2.0) or better. See “Graduation Requirements” section for a complete listing of requirements.

**International Experience.** All public health majors are required to participate in a preapproved international experience to increase awareness of cross-cultural issues, global health, economic, political, cultural, social services, and health challenges experienced by local populations in international environments. Students participate in residence for two or more weeks (exemption from the study abroad portion of the requirement must be approved by the dean of the college based on serious and compelling life events or physical limitations; a relevant course and community service activity in the U.S. will be substituted). Specific details can be found on the college website at <http://www.chhs.sdsu.edu/international>.

To meet the international experience requirement, majors must complete one of the following:

1. A CSU Study Abroad Program;
2. An SDSU Exchange Program;
3. An SDSU Study Abroad Program;

4. An SDSU Study Travel Program;

**OR**

5. One course selected from:

- Health and Human Services 290 or 350;
- Asian Studies 490;
- Education 450;
- General Studies 450;
- International Security and Conflict Resolution 450;
- Latin American Studies 320, 450, or 550;
- Political Science 450;
- Public Health 550;
- Science 350.

**Major.** A minimum of 48 upper division units to include Public Health 300, 302, 304, 305, 306, 307, 401, 402, 490A, 490B, 490C; and at least 15 units selected from the following:

- a. Nine units of environmental health courses: Public Health 451, 452, 538A.
- b. Three units of electives from Public Health 330, 331, 362, 395, or 496. Other electives as selected and offered by the School of Public Health, with approval of academic adviser.
- c. Three units from one of the following categories:

**Practice.** Public Health 497; internship from a list of selected public health agencies.

**Preprofessional.** Science courses selected with approval of School of Public Health undergraduate academic adviser.

**Research.** Public Health 499 and completion of a senior research paper under guidance of a faculty member. Must receive approval from the undergraduate public health adviser. Senior standing in public health and Public Health 402, 490A, 490B, and credit or concurrent registration in Public Health 490C.

Upon completion of emphasis, students have the option to take the Registered Environmental Health Specialist (REHS) certification examination with the State of California. Prior to the examination, students should take an additional year of physics laboratory courses.

**Time Limitation.** All public health courses taken for the major must have been taken and completed within seven years of the granting of the undergraduate degree. Courses taken prior to the seven year rule must be repeated. This policy applies to courses taken at SDSU or transferred from another four-year college or university or appropriate courses from a community college. No exceptions will be made to this policy.

New subprogram.

Child and Family Development

**The Major**

The child and family development with early childhood special education emphasis is a four-year integrated program, in which undergraduate students earn a baccalaureate degree in child development concurrent with a Preliminary Education Specialist Credential

with an emphasis in early childhood special education. Education Specialist Credential in Early Childhood Special Education is authorized by the California Commission on Teacher Credentialing. The credential authorizes the holders to work with children from birth through pre-kindergarten with designated disabilities in a variety of settings. This credential requires completion of Preliminary Education Specialist requirements, followed by completion of the Clear Professional Induction Specialist requirements within five years of employment in an authorized setting. Once admitted, students must maintain a GPA of 3.0 and must successfully complete all practicum experiences. Only grades of C or better will count toward a degree, a credential, or a certificate. Graduates with this degree qualify for special education teacher or service provider positions in early intervention programs, preschools, daycare centers, schools, hospitals, hospice centers, public welfare agencies, family service agencies, family planning clinics.

### **Impacted Program**

The child development major with an emphasis in early childhood special education integrated teacher education program (ITEP) is an impacted program. To be admitted to this program, students must meet the following criteria:

- a. Complete with a grade of C (2.0) or better: Child and Family Development 135, 270, 270L (one unit), 272, 275, 278; Biology 100, Psychology 101, Sociology 101, and Psychology 280, Sociology 201, Statistics 119, or 250;
- b. Complete a minimum of 45 baccalaureate level semester units (a minimum of 60 units are required for all transfer applicants);
- c. Have a cumulative GPA of 2.67;
- d. Pass California Basic Educational Skills Test (CBEST).

### **Child Development Major**

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

**(Major Code: 08231)**

#### **Emphasis in Early Childhood Special Education Integrated Teacher Education Program (ITEP)**

**(SIMS Code: XXXXXX)**

All candidates for a degree in applied arts and sciences must complete the graduation requirements listed in the section of this catalog on “Graduation Requirements.”

A minor is not required with this major.

**Preparation for the Major.** Child and Family Development 135, 270, 270L (one unit), 272, 275, 278; Biology 100; Psychology 101; Sociology 101; Psychology 280, Sociology 201, Statistics 119, or 250. (27-28 units)

Preparation for the major courses may not be taken Cr/NC. The minimum grade in each class is C (2.0) or better.

**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.** A minimum of 36 units to include Child and Family Development 335, 354, 370, 375A, 375B, 378A (1 unit), 378B (1 unit), 380, 537, 560, 580, 585, General Studies 420, Special Education 450.

**Credential Requirements.** Special Education 526, 527, 528, 530, 543, 553, 560, 562, 980D (infant toddler) (6 units), 980D (preschool) (6 units); Dual Language and English Learner Education 915A (3 units). (38 units)

**Additional Degree Requirements.** Once admitted, students must maintain a GPA of 3.0 and must successfully complete all practicum experiences. Only grades of C or better will count toward a degree, a credential, or a certificate.

**Additional Requirements for the Education Specialist Credential in Early Childhood Special Education.** This credential requires completion of Preliminary Education Specialist requirements (included in this program), followed by completion of the Clear Professional Induction Specialist requirements within five years of employment in an authorized setting.

# Deactivation of subprogram.

Theatre

**Theatre Arts Major**

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

**Emphasis in Design for Television and Film**