

BRIDGE TO BIOSCIENCES

For students starting the program, BTEC 10, BTEC 107, and BTEC 108A must be taken together in the same semester.

For more information contact:

Bob Del Vecchio, rdelvecc@ccsf.edu, www.ccsf.edu/biotech

APPRENTICESHIP PROGRAM

- APPR 9713 Plastering
- APPR 9714 Plumbers
- APPR 9716 Roofing/Waterproofing

Admission to apprenticeship classes are limited to apprentices registered with the California State Division of Apprenticeship Standards. This limitation is authorized by Section 3073.3 of the State Labor Code. All classes are held at off-campus sites. For more information, please contact the Apprenticeship Office at (415) 452-5664 or (415) 452-7117.

ENGLISH CREDIT COURSE LEVELS

Students may take the following courses by placing into them through the English Placement Testing process (call Testing Office at 415 239-3124), by completing the prerequisite course, or by completing the advising process.

ENGLISH 86 (6 UNITS)

Introduction to College Reading and Writing

This course provides practice in writing, reading, and study skills. The emphasis is on acquiring and using strategies to comprehend texts and to undertake writing projects.

ENGLISH 88 (6 UNITS)

College Reading and Writing

This course provides training in academic essay writing and analytical reading. The emphasis is on reading multiple academic texts, synthesizing ideas, and developing and revising essays.

ENGLISH 88A (3 UNITS)

College Reading and Writing

English 88A + 88B = 88. This course offers initial training in academic essay writing and analytical reading. The emphasis is on reading multiple academic texts, synthesizing ideas, and developing and revising essays.

ENGLISH 88B (3 UNITS)

College Reading and Writing

English 88A + 88B = 88. This course offers initial training in academic essay writing and analytical reading. The emphasis is on reading multiple academic texts, synthesizing ideas, and developing and revising essays.

ENGLISH 1A (4 UNITS)

University-Parallel Reading and Composition

Satisfies the Associate Degree requirement and the first of two-composition courses needed for transfer. Reading, writing and research assignments are based predominantly on non-fiction texts.

ENGLISH 1B (3 UNITS)

Reading, Writing, and Critical Thinking about Literature

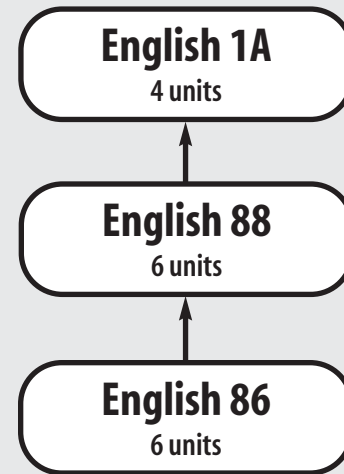
Integrates critical thinking with the writing of expository and argumentative essays based on poetry, fiction, and dramatic literature. Satisfies the second semester composition course needed for transfer.

ENGLISH 1C (3 UNITS)

Advanced Composition

Integrates critical thinking skills with the reading and writing of expository and argumentative essays. Satisfies the second semester composition course needed for transfer.

PATH TO TRANSFER—LEVEL ENGLISH



Students are encouraged to take English 88 instead of 88A and 88B since research suggests that they will be more likely to get to and through 1A if they take 88.

LEVELS OF ESL CREDIT COURSES

The normal sequence of courses leading to the completion of the ESL Program is **ESL 120, ESL 130, ESL 140, ESL 150 and ESL 160**. Students who pass **ESL 160** with a 'C' or better may use it as a pre-requisite to English 88, and then proceed through the English sequence. The new **Accelerated Academic ESL** sequence is comprised of **ESLA 3180, ESL 182, ESL 184, ESL 186, and ESL 188**. Please contact the ESL Department for further information. Students who are advised to take ESL Listening/Speaking courses (**ESL 122, 132, and 142**) at the ESL Credit Placement Test should continue the sequence in subsequent semesters for best results.

Accelerated Academic ESL Sequence		Units/Hours
ESLA 3180	Intro. to Academic ESL (this is a noncredit "gateway" course)	10 hrs./wk.
ESL 182	Intermediate Academic ESL	6 units/6 hours/1 lab hr.
ESL 184	High Interm. Academic ESL	6 units/6 hours/1 lab hr.
ESL 186	Intro. to College Reading/Writing	6 units/6 lec. hrs./1 lab hr.
ESL 188	College Reading/Writing	6 units/6 lec. hrs./1 lab hr.

Reading/Writing/Grammar Sequence		Units/Hours
ESL 120	Low-Inter. Academic ESL	6 units/6 lec. hrs.
ESL 130	Inter. Academic ESL	6 units/6 lec. hrs.
ESL 140	High-Inter. Academic ESL	6 units/6 lec. hrs.
ESL 150	Adv. Academic ESL	5 units/5 lec. hrs./1 lab hr.
ESL 160	High Adv. Academic ESL	4 units/4 lec. hrs./1 lab hr.

Listening/Speaking Sequence		Units/Hours
ESL 122	Low-Inter. Listening/Speaking	3 units/3 lec. hrs.
ESL 132	Inter. Listening/Speaking	3 units/3 lec. hrs.
ESL 142	High-Inter. Listening/Speaking	3 units/3 lec. hrs.

Elective ESL Courses		Units/Hours
ESL 49	Pronunciation Intensive Pronunciation practice for ESL 120 through ESL 140 levels	3 units/3 lec. hrs./1 lab hr.
ESL 66	Adv. Listening and Reading For ESL 140 through ESL 160 levels	3 units/3 lec. hrs.
ESL 69	Accent Improvement For ESL 140 through ESL 160 level	3 units/3 lec. hrs./1 lab hr.
ESL 75	Inter. Editing/Grammar Review For ESL 140 and ESL 150 levels	3 units/3 lec. hrs.
ESL 79	Adv. Speaking/Pronunciation For ESL 150 through ESL 160 levels	3 units/3 lec. hrs.
ESL 85	Adv. Editing/Grammar Review For ESL 160 students	3 units/3 lec. hrs.

FREE MATH TUTORING

Drop-in (no appointment needed) tutoring for students in **MATH 30, MATH 40, MATH 43, MATH 45, MATH 46, MATH 55, and MATH 60** is available in the Math Lab, Bungalow 602.

Open: Monday–Thursday, 9AM–6PM; Friday, 9AM–2PM; Saturday, 9AM–2PM

Drop-in tutoring for **MATH 60 and all higher level math courses** is available in the Learning Assistance Center, Rosenberg Library.

Open: Monday–Thursday, 8AM–6:45PM; Friday, 8AM–2:45PM

MATHEMATICS COURSES

MATH 30	Prealgebra with Basic Math, no prerequisite (replaces MATH E1 and E3)
MATH 40	Elementary Algebra (formerly MATH 840), prerequisite: MATH E1 or E3 or 30 or 35, or placement
MATH 43	Preparation for Liberal Arts Math, prerequisite: MATH E1 or E3 or 30 or 35, or placement
MATH 45	Preparation for Statistics, prerequisite: MATH E1 or E3 or 30 or 35, or placement
MATH 46	Elementary and Intermediate Algebra (combined), prerequisite: MATH 40 or placement
MATH 55	Geometry (formerly MATH 855), prerequisite: MATH 40 or placement
MATH 60	Intermediate Algebra (formerly MATH 860), prerequisite: MATH 40 or placement
MATH 70	Mathematics for Liberal Arts Students, prerequisite: MATH 60 or placement
MATH 75	Mathematical Analysis for Business, prerequisite: MATH 60 or placement
MATH 80	Probability and Statistics, prerequisite: MATH 60 or placement
MATH 90	Precalculus Algebra, prerequisite: MATH 60 or placement, advisory: MATH 50 or 55
MATH 92	College Algebra, prerequisite: MATH 40, advisory: MATH 50 or 55. Covers MATH 60 and MATH 90 material in one course.
MATH 95	Trigonometry, prerequisite: MATH 60, advisory: MATH 50 or 55. MATH 90 strongly recommended.
MATH 100A	Short Calculus I, prerequisite: MATH 90
MATH 100B	Short Calculus II
MATH 100A/B	is the calculus sequence for some, but not all, Life Science, Social Science, and Business majors. Check with your intended transfer institution or the CCSF Transfer Center before selecting the Short Calculus sequence.
MATH 110A	Calculus I, prerequisite: MATH 90 and MATH 95
MATH 110B	Calculus II
MATH 110C	Calculus III
MATH 110A/B/C	is the calculus sequence for Mathematics, Computer Science, Engineering, or Physical Science majors.
MATH 115	Discrete Mathematics, prerequisite: MATH 100A or MATH 110A; and CS 110B or CS 111B
MATH 120	Linear Algebra, co/prerequisite: MATH 110C
MATH 125	Differential Equations, prerequisite: MATH 110C
MATH 130	Linear Algebra with Differential Equations, prerequisite: MATH 110C

MATH 70, MATH 75, MATH 80, MATH 90, MATH 92, MATH 95, or any higher level math course satisfy the Quantitative Reasoning (Mathematics) Graduation Requirement of California State Universities.

The new Liberal Arts Math Pathway is: MATH 30 + MATH 43 + MATH 70

The Statistics Pathway is: MATH 30 + MATH 45 + MATH 80 or PSYC 5

The sequence of mathematics courses leading to Calculus is: MATH 30 + MATH 40 + MATH 55 + MATH 60 + MATH 90 + MATH 95 + Calculus

COMPUTER SCIENCE COURSES

Choosing The Right Computer Science Courses for You

For all Computer Science classes, a solid understanding of Algebra (at the level of Math 60 or higher) is **strongly** recommended. Higher math is helpful but not needed. English language skills are also required. (ESL 160 or higher recommended.)

Introductory Courses

CS 101: The most gentle introduction to Computer Science overall, no prerequisite

CS 110A : The best introductory programming course, also no prerequisite.

CS 160A: Intro to the Linux and Unix operating systems. Recommended for all CS students.

CS 150A: Introduction to SQL databases, using NoSQL data sources.

CS 112: Introduction to mobile app programming for iPhones using Swift.

CNIT 131: Internet Basics & Beginning HTML: Teaches key internet skills leading toward web development.

Intermediate and Advanced Courses

CS 130A, 131A, 132A, or 113A: For those who already know a little programming, these classes teach PHP, Python, Ruby, or Perl. If you have never programmed before, first take **CS 101** or **110A**.

CS 110B, 111B, or 114B: For those who already know how to write programs with if-statements, loops, functions/methods, and arrays, in Python, C++, Java, or a similar language. **If you have never programmed before, first take CS 110A.**

See the Class Schedule and College Catalog for a complete list of all the classes we offer.

Advisories and Prerequisites are listed in the schedule and catalog.

Advisories include topics instructor will assume students already know.

Taking the advised courses first will greatly increase the likelihood of success in the class. If you haven't taken a prerequisite for a course, e-mail computerscience@ccsf.edu to schedule a half-hour multiple-choice challenge exam.

Sequences of Classes, Including Degrees and Certificates

If you don't already have a degree, we encourage you to pursue our AS Degree in Computer Science, then transfer to complete a BS in CS. [Assist.org](http://www.ccsf.edu/assist) has official info on which courses transfer where (articulation agreements). If you plan to get a Bachelor's Degree, look at the information By Major.

If you already have a bachelor's degree of any kind, a Certificate is recommended instead of a second undergraduate degree, or consider pursuing a Master's Degree (check with specific universities to see which courses you can take at City College).

For more information, see the CS Department's web page at <http://www.ccsf.edu/cs>.

For more info, contact the Computer Science Department Chair, Craig Persiko at cpersiko@ccsf.edu.

Tutoring for CS students is available at the Academic Computing Resource Center (ACRC), BATL 301. Their web site is at: <http://www.ccsf.edu/acrc>.