Computer Science and Engineering – Program Map – Catalog year 2021-22 (Math 005)

First Year
- MATH 005 — Preparatory Calculus
- MATH 021 — Calc I for Phys Sci & ENGR
- WRI 001 — College Wri & Comp
- WRI 010 — College Wri & Comp
- CSE 005 — Introduction to Computer Application
- CSE 022 — Intro to Programming
- SPRK 001 — Spark Seminar

Semester 3
- MATH 022 — Calc II for Phys Sci & ENGR
- Social Science GE
- CSE 024 — Advanced Programming
- CSE 015 — Discrete Mathematics

Bio/ESS Requirement
Choose one from:
Bio 043, Bio 003, Bio 005, Bio 047, ESS 001, ESS 005

Global Awareness & Sustainability Badges:
(recommend: Bio 043)

Semester 4
- Math 023 — Vector Calculus
- Math 032 — Probability and Statistics
- CSE 030 — Data Structures
- ENGR 191 — Professional Sem.
- Bio/ESS Requirement

Legend:
- – – – ▶ co-requisite
- ——— ▶ prerequisite

Semester 5
- Math 024 — Lin Algebra/Diff Equations
- Arts and Humanities GE
- CSE 100 — Algorithm Design and Analysis
- CSE 031 — Computer Organization and Assembly Language

Semester 6
- CSE Technical Electice
- CSE Technical Elective
- Social Science, Arts, or Humanities GE
- PHYS 008 & 008L — Intro Physics I for Physical Sciences

CSE 100, Math 024, and CSE 031 are prerequisites for most upper division CSE courses.

Some CSE courses may have additional requirements, see schedule of courses.

Semester 7
- Writing in the Discipline
- CSE Technical Elective
- CSE Technical Elective
- PHYS 009 & 009L — Intro Physics II for Physical Sciences

CSE Technical Elective:
- 20 units must be CSE upper division
- 10 units may be completed from an approved list of courses, see Audit

Courses do not double count

Semester 8
- Free Elective (GE Badge)
- CSE Technical Elective
- CSE Technical Elective
- ENGR 065 — Circuit Theory

Semester 9
- CSE Technical Elective
- CSE Technical Elective
- CSE 120 — Software Engineering
- Free Elective (GE Badge)

Intellectual Badge Completion:
To complete badges, students must overlap Social Science, Arts, and Humanities GE's with badge categories. See page 2.

General Education Requirements – PAY ATTENTION TO

Writing in the Discipline – There is a place holder for this course in the flow chart.
- We recommend CSE 155 or WRI 100 or ENGR 156

AREA B: Social Science, Arts and Humanities. Students must take three courses in the area of Social Science, Arts and Humanities. At least one course must be from Social Science and one course must be from Arts and Humanities.
- Social Science – There is a place holder for this course in the flow chart. You will need to select a course. Cross selection with Intellectual Experience Badges.
- Arts and Humanities – There is a place holder for this course. You will need to select a course. Cross with Intellectual Experience Badges.
- Social Science, Arts and Humanities – There is a place holder for this course. You will need to select a course. Cross with Intellectual Experience Badges.

Intellectual Experience Badges – One course can count for a maximum of two badges.

	Intellectual Experience Badge Breakdown to Maximize Graduation Requirements & Required Courses								
	ONE COURSE CAN SATISFY A MAXIMUM OF TWO BADGES								
	Scientific Method	**Literary and Textual Analysis**	**Media and Visual Analysis**	**Quantitative and Numerical Analysis**	**Societies and Cultures of the Past**	**Diversity and Identity**	**Global Awareness**	**Sustainability**	**Ethics**
CSE	Completed with Major Requirements	**Take one class that overlaps with SSHA GE**	**Take CSE 160 as a technical elective**	Completed with Major Requirements	**Take one class that overlaps with SSHA GE**	**Take one class that overlaps with SSHA GE**	**Take Bio 043 (counts in major towards engr sci)**	**Take Bio 043 (counts in major towards engr sci)**	Completed with Major Requirements

Suggested Courses to overlap Social Science, Arts and Humanities courses and Intellectual Experience Badges

- **Social Science** – Take any approved social science course found on your Audit or Catalog (https://catalog.ucmerced.edu/preview_program.php?catoid=20&poid=2289)

- **Arts and Humanities** – CCST 060, COGS 005, CRES 076A, ENG 032, GASP 006, GASP 031C, GASP 041A, GASP 055B, GASP 060, GASP 076A, HIST 055, SPAN 050, SPAN 060

- **Social Science, Arts and Humanities** – Take any approved social science, arts and humanities course found on your Audit or Catalog (https://catalog.ucmerced.edu/preview_program.php?catoid=20&poid=2289)

Subject to availability and updating, always check your Audit.