



CSUSM /MSJC/ MVUSD Software Engineering Pathway



Jackie Trischman, Ph.D., Dean, CSTEM
Ricardo D. Fierro, Ph.D., Associate Dean & PD, CSTEM
Jeffrey Morales, Engineering Pathways Advisor, CSTEM
Aaron Guy, Associate Dean, Extended Learning
Erika Ervin, Director, Credit Programs, Extended Learning

Dr. Marilyn Harvey, Dean of Career Education
Sonia Verduzco, Career Education Counselor
Christine Abriam, Administrative Associate III
Jenny Hughes, Director of K-12 Partnerships



Mary Walters, Asst. Superintendent, Ed Services
Jennifer Schriver, Exec. Director of Secondary Education
Valerie Backus, CTE Coordinator





Welcome!

Information Session for 3 Pathways to the Software Engineering degree at CSUSM



California State University
SAN MARCOS

- SE at CSUSM/SJSU/Cal Poly
- Jobs!
- High Salaries!
- Specialized Support
- Cohort Model
- 2 + 2 Program
- AP, DE, or CE Credit
- Cost

Welcome!

Information Session for 3 Pathways to the Software Engineering degree at CSUSM



California State University
SAN MARCOS

- SE at CSUSM
- Jobs!
- High Salaries!
- Specialized Support
- Cohort Model
- 2 + 2 Program
- AP, DE, or CE Credit
- Cost

Jobs! (High Demand Everywhere, Mobility, & Flexibility)



TOP 10 TECH OCCUPATIONS	MONTHLY JOB POSTINGS	MONTH-OVER % CHANGE
Software Developers and Software Quality Assurance Analysts	4,535	3%
Computer Occupations, All Other	1,991	9%
Network and Computer Systems Administrators	1,118	5%
Computer User Support Specialists	1,112	-4%
Computer Systems Analysts	922	3%
Web Developers and Digital Interface Designers	716	4%
Information Security Analysts	667	4%
Computer Programmers	267	10%
Computer and Information Research Scientists	224	6%
Database Administrators and Architects	173	14%

<https://www.sdnedc.org/tech-talent-pulse-report/>



- SE at CSUSM
- **Jobs!**
- High Salaries!
- Specialized Support
- Cohort Model
- 2 + 2 Program
- AP, DE, or CE Credit
- Cost

High Salaries!



TOP 10 JOB TITLES	UNIQUE POSTINGS
Software Engineers	279
Senior Software Engineers	243
Systems Engineers	136
DevOps Engineers	102
Systems Administrators	93
Embedded Software Engineers	91
Business Systems Analysts	80
Firmware Engineers	80
Software Developers	78
Network Engineers	77

TOP 10 CERTIFICATIONS	UNIQUE POSTINGS
CompTIA Security+	418
Certified Information Systems Security Professional	323
IAT Level II Certification	280
Project Management Professional Certification	269
Cisco Certified Network Associate	256
Microsoft Certified Systems Engineer	179
Microsoft Certified Systems Administrator (MCSA)	172
Cisco Certified Network Professional	137
GIAC Certifications	130
Master Of Business Administration (MBA)	120

JOBS WITH MEDIAN ADVERTISED SALARIES	ADVERTISED
Computer Science	\$104,320
Python (Programming Language)	\$120,192
Software Engineering	\$122,240
Agile Methodology	\$115,456
Integration	\$111,360
Leadership	\$102,144
Software Development	\$114,432
Operations	\$91,008
Java (Programming Language)	\$121,600
SQL (Programming Language)	\$109,440

<https://www.sdnedc.org/tech-talent-pulse-report/>



- SE at CSUSM
- Jobs!
- **High Salaries!**
- Specialized Support
- Cohort Model
- 2 + 2 Program
- AP, DE, or CE Credit
- Cost

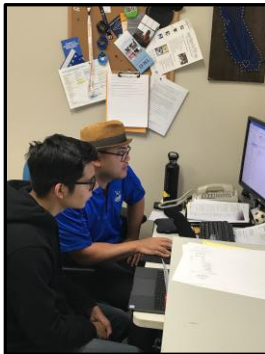
Specialized Support!



California State University
SAN MARCOS

- SE at CSUSM
- Jobs!
- High Salaries!
- **Specialized Support**
- Cohort Model
- 2 + 2 Program
- AP, DE, or CE Credit
- Cost

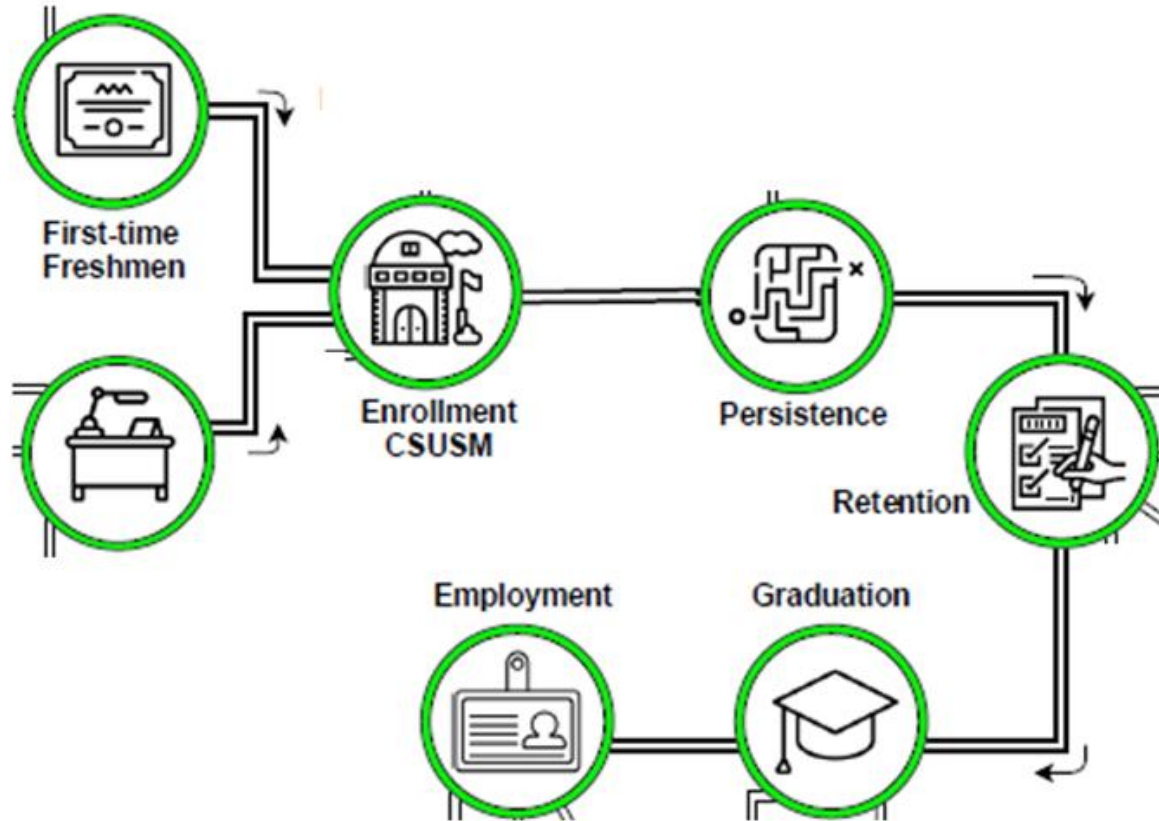
Specialized Support!



California State University
SAN MARCOS

- SE at CSUSM
- Jobs!
- High Salaries!
- **Specialized Support**
- Cohort Model
- 2 + 2 Program
- AP, DE, or CE Credit
- Cost

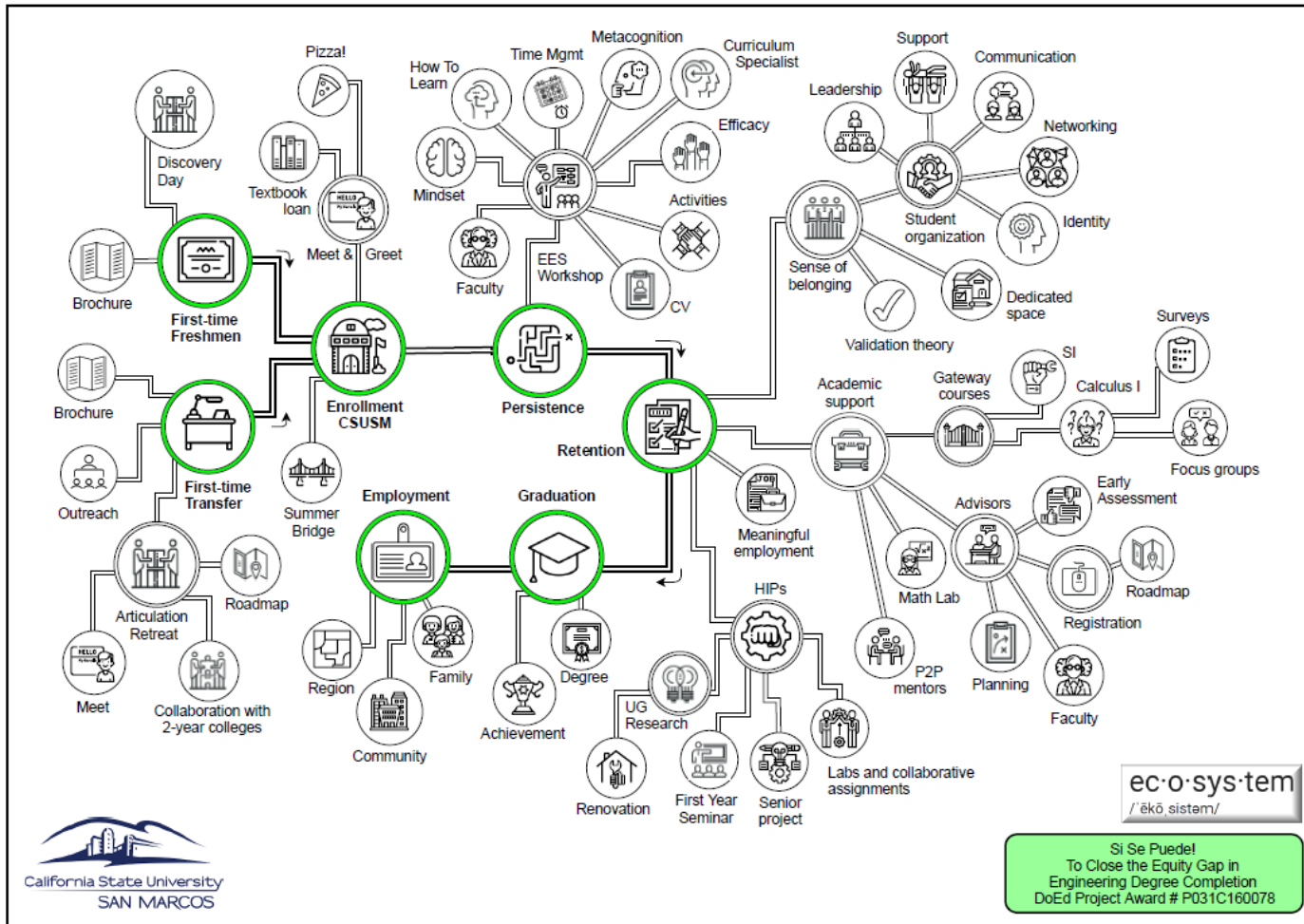
Specialized Support Ecosystem!



California State University
SAN MARCOS

- SE at CSUSM
- Jobs!
- High Salaries!
- **Specialized Support**
- Cohort Model
- 2 + 2 Program
- AP, DE, or CE Credit
- Cost

Specialized Support Ecosystem!



California State University
SAN MARCOS

- SE at CSUSM
- Jobs!
- High Salaries!
- **Specialized Support**
- Cohort Model
- 2 + 2 Program
- AP, DE, or CE Credit
- Cost



Traditional A-G Graduation Plan

College Calculus 1 Ready

3 course sequence: Biology, Chemistry, Physics

Roadmap for Software Engineering Majors at MSJC to CSUSM

Semester 1 – MSJC Fall

CSIS 113A C++ Programming 1	3
MATH 211 Analytic Geometry & Calc I (GE Area B4)	4
GE (A2) Written Communication (ENGL 101)	4
GE (E) Lifelong Learning (CSCR 100)	3
GE (C1) Arts (Art 100)	3
Total	17

Semester 2 – MSJC Spring

CSIS 123A C++ Programming 2	3
MATH 212 Analytic Geometry & Calculus II	4
CSIS 211 Intro to Data Struct and Algos (<i>pending</i>)	3
GE (A1) Oral Comm (COMM 100)	3
GE (A3) Critical Thinking (ENGL 103)	3
Total Units	16

Semester 3 – MSJC Fall

CSIS 118B Comp Organiz. & Assembly Lang (<i>pending</i>)	3
MATH 218 Linear Algebra	3
PHYS 101 Intro to Physics I (GE Area B1)	4
GE (D #1) Social Science (PSYC 101)	3
GE (C2) Humanities (PHIL 101)	3
GE (D #2): Social Science (HIST 111 or HIST 112)	3
Total Units	19

Semester 4 – MSJC Spring

CSIS 213 Discrete Structures	3
MATH 140 Statistics (<i>pending</i>)	3
PHYS 102 Intro to Physics II	4
GE (C3) Language Course	3
GE (B2/B3) BIOL 100 or BIOL 150	4
Total Units	17



- Cohort Model
- 2 + 2 Program
- AP, DE, or CE Credit
- Cost



California State University
SAN MARCOS

Accelerated A-G Plus Plan

Leveraging All MVUSD Opportunities
(AP/IB/DE/CE/Annex)

MVUSD Accelerated Coursework for the Software Engineering Majors MSJC / CSUSM

MVUSD Coursework Accelerated			
11th Grade - Semester 1		11th Grade - Semester 2	
AP English Language or Equivalent	5	AP English Language or Equivalent	5
AP US History / DE US History 111	5	AP US History / DE US History 112	5
Physics / AP Physics	5	Physics / AP Physics	5
World Language	5	World Language	5
CTE Pathway or Elective	5	CTE Pathway or Elective	5
College Prep Elective	5	College Prep Elective	5
IB Math Analysis / DE College Algebra 105 / AP Calc AB	5	IB Math Analysis / DE College Precalc 110 / AP Calc AB	5
Total Units	35	Total Units	35
12th Grade - Semester 1		12th Grade - Semester 2	
AP English Literature or Equivalent	5	AP English Literature or Equivalent	5
AP Government or AP Economics or Equivalent	5	AP Government or AP Economics or Equivalent	5
AP Physics / AP Biology	5	AP Physics / AP Biology	5
AP Calculus BC / IB Math Analysis	5	AP Calculus BC / IB Math Analysis	5
World Language	5	World Language	5
CTE Pathway or Elective	5	CTE Pathway or Elective	5
College Prep Elective	5	College Prep Elective	5
Total Units	35	Total Units	35



- Cohort Model
- 2 + 2 Program
- AP, DE, or CE Credit
- Cost

Accelerated Roadmap for Software Engineering Majors at MSJC/CSUSM – 4 Semesters

Semester 1 – MSJC Fall

*CSIS 113A C++ Programming 1 (Annex)	3
*MATH 211 Analytic Geometry & Calc I (GE Area B4)	4
*GE (A2) Written Communication (ENGL 101)	4
*GE (E) Lifelong Learning (CSCR 100) (Annex)	3
*GE (C1) Arts (Art 100) (Annex or DE)	3
Total	17

Semester 2 – MSJC Spring

*CSIS 123A C++ Programming 2 (Annex)	3
*MATH 212 Analytic Geometry & Calculus II	4
CSIS 211 Intro to Data Struct and Algos (<i>pending</i>)	3
GE (A1) Oral Comm (COMM 100 103)	3
*GE (A3) Critical Thinking (ENGL 103) (Annex or DE)	3
Total Units	16

Semester 3 – MSJC Fall

CSIS 118B Comp Organiz & Assembly Lang (<i>pending</i>)	3
MATH 218 Linear Algebra	3
*PHYS 101 Intro to Physics I (GE Area B1)	4
*GE (D #1) Social Science (PSYC 101/Soc 101) (Annex or DE)	3
*GE (C2) Humanities (PHIL 101)	3
*GE (D #2) Social Science (HIST 111 or HIST 112)	3
Total Units	19

Semester 4 – MSJC Spring

CSIS 213 Discrete Structures	3
*MATH 140 Statistics (<i>pending</i>)	3
PHYS 102 Intro to Physics II	4
*GE (C3) Language Course	3
*GE (B2/B3) BIOL 100 or BIOL 150	4
Total Units	17

*Fulfilled by AP/IB Exams or Dual Enrollment/Articulated Courses



- Cohort Model
- 2 + 2 Program
- AP, DE, or CE Credit
- Cost

Accelerated Roadmap for Software Engineering Majors at MSJC/CSUSM – 2 Semesters

*MSJC Courses Fulfilled in High School

GE (A2) Written Communication (ENGL 101)	4
GE (B1) PHYS 101 Intro to Physics I	4
GE (C2) Humanities (PHIL 101)	3
GE (D #2) Soc Science (HIST 111 or HIST 112)	3
MATH 211 (B4) Analytic Geometry & Calc I	4
Total Units	18

*MSJC Courses Fulfilled in High School

MATH 140 Statistics (<i>pending</i>)	3
MATH 212 Analytic Geometry & Calculus II	4
GE (C3) Language Course	3
GE (B2/B3) BIOL 100 or BIOL 150	4
Total Units	14

Semester 1 – MSJC Fall

*CSIS 113A C++ Programming 1 (Annex)	3
CSIS 118B Comp Organiz. & Assembly Lang (<i>pending</i>)	3
MATH 218 Linear Algebra	3
*GE (E) Lifelong Learning (CSCR 100) (Annex)	3
*GE (C1) Arts (Art 100) (Annex or DE)	3
*GE (D #1) Social Science (PSYC 101/Soc 101) (Annex or DE)	3
Total	18

Semester 2 – MSJC Spring

*CSIS 123A C++ Programming 2 (Annex)	3
CSIS 213 Discrete Structures	3
CSIS 211 Intro to Data Struct and Algos (<i>pending</i>)	3
GE (A1) Oral Comm (COMM 100 103)	3
*GE (A3) Critical Thinking (ENGL 103) (Annex or DE)	3
PHYS 102 Intro to Physics II	4
Total Units	19

*Fulfilled by AP/IB Exams or Dual Enrollment/Articulated Courses



- Cohort Model
- 2 + 2 Program
- AP, DE, or CE Credit
- Cost

Roadmap for Software Engineering Majors at MSJC/CSUSM

Semester 5 – CSUSM Fall	
SE 370 Software Principles	3
SE 451 Software Reqmts and Design	3
CS 331 Computer Architecture	3
CS 351 Programming Languages	3
Total Units	12

Semester 6 - CSUSM Spring	
SE 461 Software Testing & Quality	3
SE 471 Software Architecture	3
CS 433 Operating Systems	3
SE UD Elective (CS 443 Database)	3
Total Units	12

Semester 7 - CSUSM Fall	
SE 481 Softw Project Planning & Mgmt	3
SE 490 Capstone I	3
SE UD Elective (CS 446 Cloud Comput)	3
PHIL 348 Ethics (UDGE CC)	3
GE Lower Division D	3
Total Units	15

Semester 8 - CSUSM Spring	
SE 491 Capstone II	3
CS 435 Embedded Systems	3
GE (F Ethnic Studies)	3
GE Upper Division DD	3
Total Units	12



- SE at CSUSM
- Jobs!
- High Salaries!
- Specialized Support
- Cohort Model
- 2 + 2 Program
- AP, DE, or CE Credit
- Cost

Projected COST for the 3 Pathways

(w/o room, meals, and personal expenses; subject to change)

	HS to CSUSM San Marcos (4 to 5 years)	MSJC/CSUSM 2 + (2 to 3 years) Transfer	MSJC/CSUSM 2 + 2 EL (Temecula) 4 years
Tuition	\$22,968 to \$28,710	\$3,174 + \$11,484	\$3,174 + \$22,500
Fees	\$7,880 to \$9,850	\$52 + \$3,940	\$52 + 3,940
Transp. & Parking	\$8,572 to \$10,715	\$938 + \$4,286	\$938
Total Cost	\$39,420 to \$49,275	\$23,874 to \$31,729	\$30,604

Cohort model			✓
Guaranteed Seating			✓
Short commute			✓
CSUSM degree	✓	✓	✓
Duration	4 to 5 years	4 to 5 years	4 years

https://www.msjc.edu/financialaid/documents/2020-2021_Award_Guide.pdf

<https://www.csusm.edu/finaid/costofattendance/index.html>



- SE at CSUSM
- Jobs!
- High Salaries!
- Specialized Support

- Cohort Model
- 2 + 2 Program
- AP, DE, or CE Credit
- Cost

Projected COST for the 3 Pathways

(w/o room, meals, and personal expenses; subject to change)

	MSJC/CSUSM 2 + (2 to 3 yrs) Transfer	MSJC/CSUSM 2 + 2 EL (Temecula)	HS to CSUSM San Marcos (4 to 5 yrs)
Tuition	\$3,174 + 11,484	\$3,174 + 22,500	22,968 – 28,710
Fees	\$52 + 3,940	\$52 + 3,940	7,880 – 9,850
Transp. & Parking	\$938 + 4,286	\$938	8,572 – 10,715
Total Cost	\$23,874 – \$31,729	\$30,604	\$39,420 – \$49,275

Cohort model		✓	
Short commute		✓	
CSUSM degree	✓	✓	✓
Duration	4 to 5 years	4 years	4 to 5 years

https://www.msjc.edu/financialaid/documents/2020-2021_Award_Guide.pdf

<https://www.csusm.edu/finaid/costofattendance/index.html>



California State University
SAN MARCOS

- SE at CSUSM
- Jobs!
- High Salaries!
- Specialized Support
- Cohort Model
- 2 + 2 Program
- AP, DE, or CE Credit
- **Cost**



California State University
SAN MARCOS

INTERESTED IN THE 2+2 SOFTWARE ENGINEERING PROGRAM?

Please complete the following form:

<http://bit.ly/CSUSMEngineeringProgram>





California State University
SAN MARCOS

QUESTIONS

For More Information:

Email your High School Counselor

Or Contact:

MSJC: careereducation@msjc.edu

CSUSM: cstem@csusm.edu

