

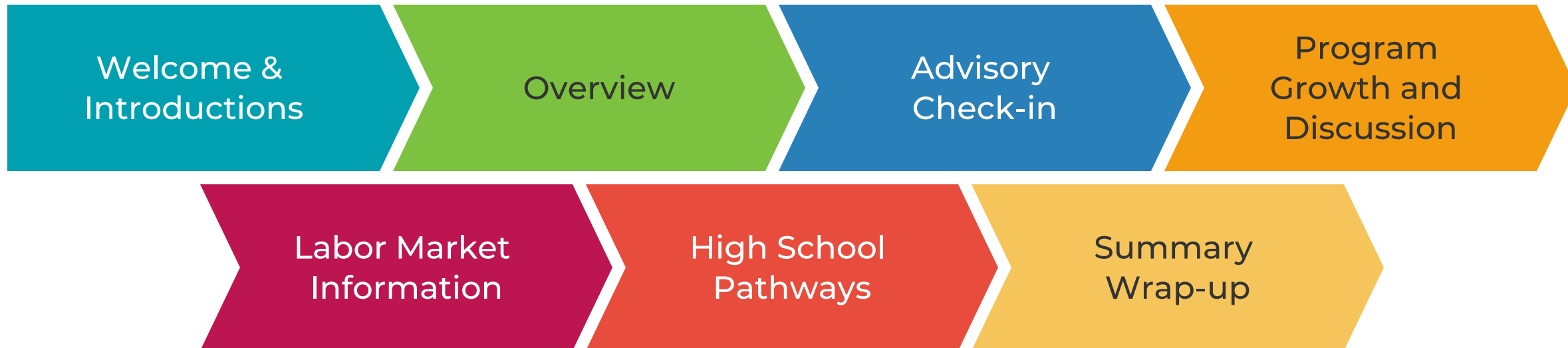


Computer Information Systems

Advisory Committee Meeting

Tuesday, April 25, 2022

AGENDA





Welcome!

and

Introductions

We'd like to learn a little about you...



Overview

Alina Varona

Dean of Career Education and Workforce Development

Overview of Career Education

About Computer Information Systems

What does Revitalization mean?

Overview of Career Education and Workforce Development

Prepare students with skills for 21st century jobs, careers, and the future of work

Degrees and Certificates

- **Create Pathways & Support Momentum**

Short Term Training and Workforce Development

- **Respond In-Time to Labor Market Needs and Connect to Employment**

Non Credit Education

- **Ladder and Bridge to Basic Skills, Work, and Credit**

2.1 million students at **116** colleges

[HTTPS://WWW.CCCCO.EDU/ABOUT-US/CHANCELLORS-OFFICE/DIVISIONS/WORKFORCE-AND-ECONOMIC-DEVELOPMENT](https://www.cccco.edu/about-us/chancellors-office/divisions/workforce-and-economic-development)

Career Education: Programs

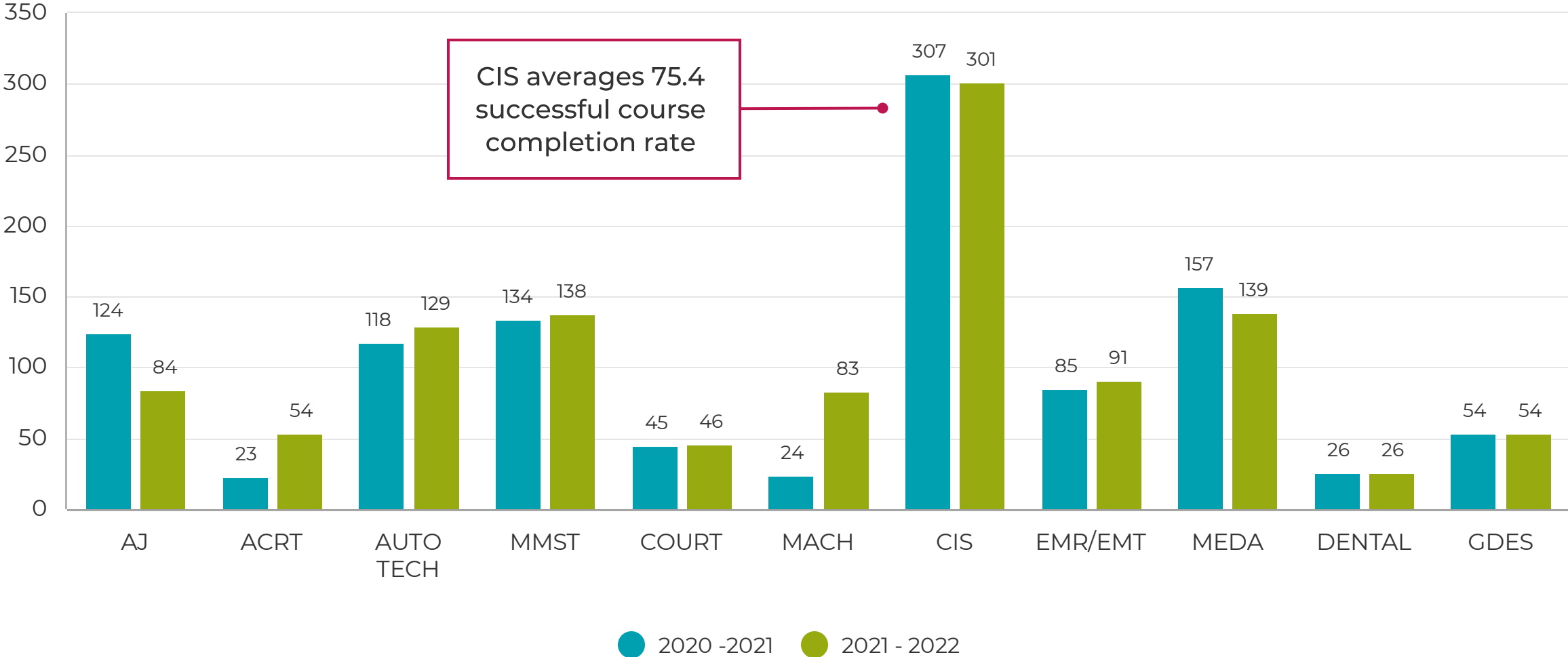
cte.marin.edu



- Administration of Justice
- Auto & Industrial
 - Auto Collision Repair; Auto Technology; Electronics; Machine & Metals
- Computers & Multimedia
 - Computer Information Systems;** Graphic Design; 3D, Video, Game Dev; Web Design and Development; MS Office Specialist Certification
- Court Reporting
- Health Sciences
 - Dental Assisting; Emergency Medical Technician Training; Medical Assisting, Public Safety Degree; FIRE Foundry Program; CNA/CHHA
- Organic Farming
- Education to Career (E2C)
 - Construction Program
 - CNA/CHHA - coming soon
 - Bus Coach Operator Apprenticeship - coming soon
- Summer Career Academies
 - High School Academies
- Short-Term Career Training Programs (12 Weeks)
 - Business Start-Up: online selling, accounting, office applications, social media marketing

Enrollments by Program

unduplicated headcount by program x 2 academic years

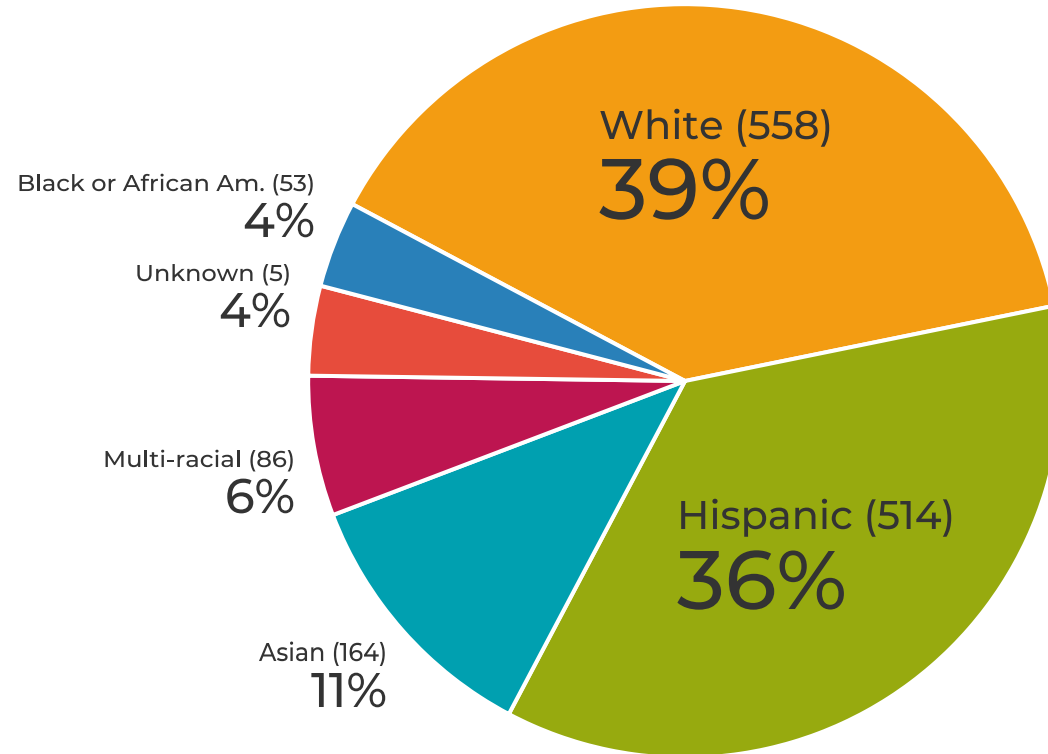


Average Student Demographics

Computer Information Systems

2019 - 2022

56% Female students
42% Male students
2% Unknown



COLLEGE OF MARIN CREDIT STUDENT CHARACTERISTICS

Gender: Male 39% Female 60%;

Median Age: 23

Race/Ethnicity:

Asian: 487 (7%)

Black/African American: 207 (3%)

Hispanic: 1,985 (30%)

Multi-racial: 408 (6%)

Native American: 14 (0.2%)

Native Hawaiian/Pacific Islander: 13 (0.2%)

White: 3,211 (48%)



Advisory Check-in

PRIORITIES AND CURRENT LANDSCAPE

Advisory Member Share Outs & Discussion

What has this last year looked like for your field?



Staffing and Recruiting

- What are your current priorities and needs for hiring?



Community Partnership & Impacts

- How should we best prepare our students to be qualified and competitive?



Other Key Items?

- What should we be aware of to support our future students?
- Potential technology, training, or emerging sectors?



Training & Professional Development

- Does your team need additional training?
- Are there professional development options needed for your industry?



About Revitalization and Computer Information Systems

AP 4022: PROGRAM REVITALIZATION

- * Identify the program's strengths, weaknesses, opportunities, and challenges Identify the program's strengths, weaknesses, opportunities, and challenges
- * Make specific recommendations for improvement
- * Include a list of measurable actions

Benefits of Program Revitalization

Redesigning a program to benefit students most!

- Provides a mechanism for comprehensive focus on curriculum and offerings.
- Centers on prolonged, meaningful inquiry that supports refined delivery model and student centered improvements.
- Creates opportunities to update offerings or build new degrees/certificates/courses.
- Allows us to understand who is served and who might be served better.
- Involves peers and experts to support how we enhance, reimagine, and grow programs.





Current CIS Program Assessment

STRENGTHS

- Courses are online
- Flexible offerings - onsite and online
- Increase in student enrollment for online offerings
- Dedicated faculty

WEAKNESSES

- Incongruous offerings
- Redundancy and replication across related disciplines
- Very low student enrollment in some areas
- Out of date curriculum

OPPORTUNITIES

- Updating curriculum to align with industry standards
- Stackable certificates
- Connections with other programs
- Online demand

CHALLENGES

- One discipline with multiple disciplines
- Inherited organizational structure
- RE-imagining a new model
- Alignment of curriculum

CIS/Information Technology

Current CIS Degree and Certificate of Achievement Offerings:

- Associate's of Science in Computer Information Systems (60 units total, 21 units concentrated)
- Certificate Achievement in Computer Information Systems (21 units total)

Potentially NEW Degree Offerings:

- **Cyber Security** AS Degree (22 - 23 units) - combining:
 - Network and System Administrator Certificate (14 units)
 - Web Software and Information Security Analyst (14 units)
- **Data Analytics** AS-T Degree (22 - 23 units)

CIS Degree

A.S. in Computer Information Systems (Total 21)

Complete all of the following

1. Required Core Courses (Total 13.5)

Complete the following number of credits: 13.5

CIS102 - Beginning MS Word 1.5

CIS103 - Intermediate MS Word 1.5

CIS110 - Introduction to Computer Information Systems 3

CIS113 - MS PowerPoint Presentations and Publications 1.5

CIS117 - Introduction to MS Access Database Design 1.5

CIS118 - Introduction to MS Excel Spreadsheet Design 1.5

CIS127 - Intermediate MS Access Database Design 1.5

CIS128 - Intermediate MS Excel Spreadsheet Design 1.5

2. Electives (select a minimum of 7.5 units) (Total 7.5)

Complete the following number of credits: 7.5

CIS100 - Computer Keyboarding 1

CIS101 - Introduction to Personal Computers and Operating Systems 1.5

CIS111 - Google Apps for Business and Personal Use 2

CIS120 - IT Essentials 2

CIS126 - Introduction to Windows 1.5

CIS137 - Advanced Database Design 1.5

CIS141 - Introduction to HTML Programming 1.5

CIS142 - Intermediate HTML and Scripting 1.5

CIS155A - Systems and Network Administration 1.5

CIS215 - Visual BASIC Programming 3.5

CIS237 - Introduction to SQL Programming 1.5

CIS275 - Networking Fundamentals and Practices 3



Program Growth

Manny Kang

Doctor of Information Technology and Instructor

CIS Certificates/Degrees

What is Computer Information Systems (CIS)?

Today's Focus: Technical and Networking

- Courses provide “hands-on” computer use that emphasizes the development of the skills necessary for employment and personal use of computers.
- Current curriculum touches upon:

Languages/Applications	Courses also cover:
JAVA	Cascading Screen Style (CSS)
JavaScript	Content Management Systems
HTML	Integrated Drive Electronics
PYTHON	SEO
SQL	Security
BASIC	
WordPress	

Building a New Program

2 IT/Cyber Security Certificates

Combine to
create a 3rd
certificate
offering?
25 units

Network and System Administrator (14 units total)

- CIS 110 - Information Systems, Computer Information (3 units) (articulated)
- CIS 126 - Introduction to Windows (2 units)
- CIS 155 - Systems and Network Administration (3 units)
- CIS 275 - Networking Fundamentals and Practices (3 units)
- NEW - Unix System Admin. (3 units) - to be developed

Web Software and Information Security Analyst (14 units total)

- CIS 110 - Information Systems, Computer Information (3 units) (articulated)
- COMP 138 - Introduction to Programming - Python (4 units)
- CIS 120 - IT Essentials: PC Hardware and Software (4 units)
- CIS 160 - Introduction to Information Systems Security (3 units)

New Program Possibility

CIS/Information Technology-

Cyber Security Stackable Certificates -->AS Degree

Required Core Courses (14 units):

- **CIS 110 - Business Information Systems, Computer Information (3 units) (articulated)**
- CIS 126 - Introduction to Windows (2 units)
- CIS 155 - Systems and Network Administration (3 units)
- CIS 275 - Computer Network Fundamentals (3 units)
- NEW - Unix System Admin. (3 units) - to be developed

OR Required Core Courses (14 units)

- **CIS 110 - Information Systems, Computer Information (3 units) (articulated)**
- COMP 138 - Introduction to Programming - Python (4 units)
- CIS 120 - IT Essentials: PC Hardware and Software (4 units)
- CIS 160 - Introduction to Information Systems Security (3 units)

PLUS - Select 6 units or 2 courses:

- NEW - Introduction to Systems Analysis and Design (3 units)
- NEW - Introduction to Cybersecurity: Ethical Hacking (3 units)
- NEW - Cloud Computing and Virtualization (3 units)
- CIS 237 - Intro to Data base Management Systems (3 units) - *To Be Updated*

Discussion

- Many of the classes for this degree do not articulate to transfer to a 4-year university. Should we explore an A.S. Cyber Security Degree?
- Are students employable with an Associate's degree or Certificate in IT Cyber Security?
- What jobs can students pursue once completing a Cyber Security certificate or degree?
- What skills and key courses are vital for a Cyber Security career?
- What recommendations or edits do you suggest?
- Do you approve the addition of this Cyber Security stackable certificate?

5-year
plan

New Program Upon Approval

CIS/Information Technology-

Data Analytics AS-T Degree (22 - 23 units)

Required Core Courses (15 units):

- NEW - Foundations of Data Analytics (3 units)
- NEW - Intro to SQL Databases and NoSQL (3 units)
- CIS 110 - Introduction to CIS (3 units)
- CIS 138 - Intro to Python Programming Concepts and Methodologies (3 units)
- NEW - Data Visualization (3 units)

AND Select 6 units or 2 courses:

- CIS 118 - Intermediate Excel (2 units)
- NEW - Introduction to Unix/Linux (3 units)
- New - Machine Learning (3 units)
- New - Big Data Analytics and Management (3 units)
- New - Privacy, Security, Ethics (3 units)
- CIS 160 - Information Security (3 units)

AND Select 3 - 4 units or 1 course:

- STAT 115 - Introduction to Statistics (3 units)
- Math 114 - Finite Mathematics (3 units)
- Math 121 - Business Calculus (3 units)
- Math 123 - Single Variable Calculus I Early Transcendentals (4 units)



Labor Market Information

Heather Rahman

Program Coordinator, Career Education

Regional Counties:
Marin, Napa, Sonoma,
Solano, San Francisco
and San Mateo

Regional Labor Market Information

Sources: labormarketinfo.edd.ca.gov
and O*Net Online

Occupations (Typical Educational Requirements)	Alternative Job Titles	Occupational Growth	Average Annual Earnings	Annual Job Openings projected through 2028
Computer Systems Analysts (Bachelor's degree)	Applications Analyst, Business Systems Analyst, ISA, IT Analyst, Systems Analyst	11%	\$109,696	1,438
Information Security Analysts (Bachelor's degree)	Information Security Officer, ISSO, IT Specialist	8 - 10%	\$125,091	235
Computer and Information Systems Managers (Bachelor's degree)	Data Processing Manager, Information Systems Manager (IS Manager), Information Systems Supervisor (IS Supervisor), Information	11%	\$176,310	1,955

Data Analytics Related Occupations

Descriptions

- **Data Scientists**

Design, model, or implement corporate data warehousing activities. Program and configure warehouses of database information and provide support to warehouse users.

- **Business Intelligence Analyst**

In 76% of job postings a Bachelor's degree is required. Produce financial and market intelligence by querying data repositories and generating periodic reports. Devise methods for identifying data patterns and trends in available information sources.

- **Data Warehousing Specialists**

In 78% of job postings a Bachelor's degree is required. Design, model, or implement corporate data warehousing activities. Program and configure warehouses of database information and provide support to warehouse users.

Data Analytics - **Regional** Labor Market

Source: EMSI

Occupations	Alternative Job Titles	Occupational Growth	Average Annual Earnings Regionally	Annual Job Openings projected
Data Scientists	Principal Data Scientist, Product Data Scientist, Applied Data Scientist, Data Analytics Specialist	32%	\$151,000	1,103
Business Intelligence Analyst	Business Intelligence Analyst, Competitive Intelligence Analyst, Data Analyst, Intelligence Analyst, Market Intelligence Analyst, Market Intelligence Consultant, Strategic Business and Technology Intelligence Consultant, Strategist	32%	\$151,000	1,103
Data Warehousing Specialist	Data Warehouse Analyst, Data Warehouse Solution Architect	18%	\$175,000	278

What is the Supply in our Region?



Average # completions with a degree or certificate in related educational sector:

- **116** - Office Technology/Applications at Napa, Santa Rosa and Solano
- **29** - Information Technology, General at Santa Rosa on average
- **2** - Computer Information Systems at COM
- **12** Computer Networking (SRJC CISCO Networking)
- **16** - Other Information Technology at SRJC

Total of **175 students** on average complete in our area. None are data analytics nor cyber security concentrated programs.



High School Connections

Building Pathways

Currently working with local high schools to bridge their classes to College of Marin

San Marin High School:

- **CISCO** - IT Essentials, Networks, Switching and Routing
 - **Articulation by Exam courses**
 - CIS 120 - Information Tecnology Essentials
 - CIS 160 - Intro to Information Systems Security
 - CIS 275 - Networking Fundamentals and Practices
 - College of Marin counseling embedded at the local high schools
- A pathway map to be develop after revitalization for CIS

**Career
Education**

COLLEGE OF
MARIN

Computer Information Systems

CAREERS / ANNUAL AVERAGE INCOME

- Network and Computer Systems Administration - \$95,442
- Information Security Analysts - \$107,250
- Business Operations Specialists - \$63,000
- Database Administrators - \$79,329
- Executive Administration Assistants - \$68,315

PROGRAM OFFERINGS

- Associate in Science Degree in Computer Information Systems (60.0 Units)
- Certificate of Achievement, Computer Information Systems (13.5 Units)
- Skills Certificate, Microsoft Office (10.5 units)
- Skills Certificate, Microsoft Office Database Specialist (6.0 Units)

FALL CORE CLASSES

- CIS103 - Intermediate MS Word (1.5 units, CSU)
- CIS110 - Intro to Computer Information Systems (3 units, CSU/UC)
- CIS113 - MS PowerPoint Presentations and Publications (1.5 units, CSU)
- CIS118 - Intro to MS Excel Spreadsheet Design (1.5 units, CSU)
- CIS 128 - Intermediate MS Excel Spreadsheet Design (1.5 units, CSU)

SPRING CORE CLASSES

- CIS102 - Beginning MS Word (1.5 units, CSU)
- CIS117 - Intro to MS Access Database Design (1.5 units, CSU)
- CIS127 - Intermediate MS Access Database Design (1.5 units, CSU)
- + additional 7.5 units from a selected list

* Course scheduling is subject to change. Please check with a counselor to determine your educational plan. Classes are located at IVC, KTD and online.

TO GET STARTED

Course Scheduling www1.marin.edu/schedule

Enrollment Services, Financial Aid and Registration es.marin.edu

High School student programs and enrollment information www1.marin.edu/high-school-programs

PROGRAM CONTACT

Manny Kang
MaKang@marin.edu
(415) 457-8811 x8200

PROGRAM ONLINE

academics.marin.edu/program/mach

COUNSELING

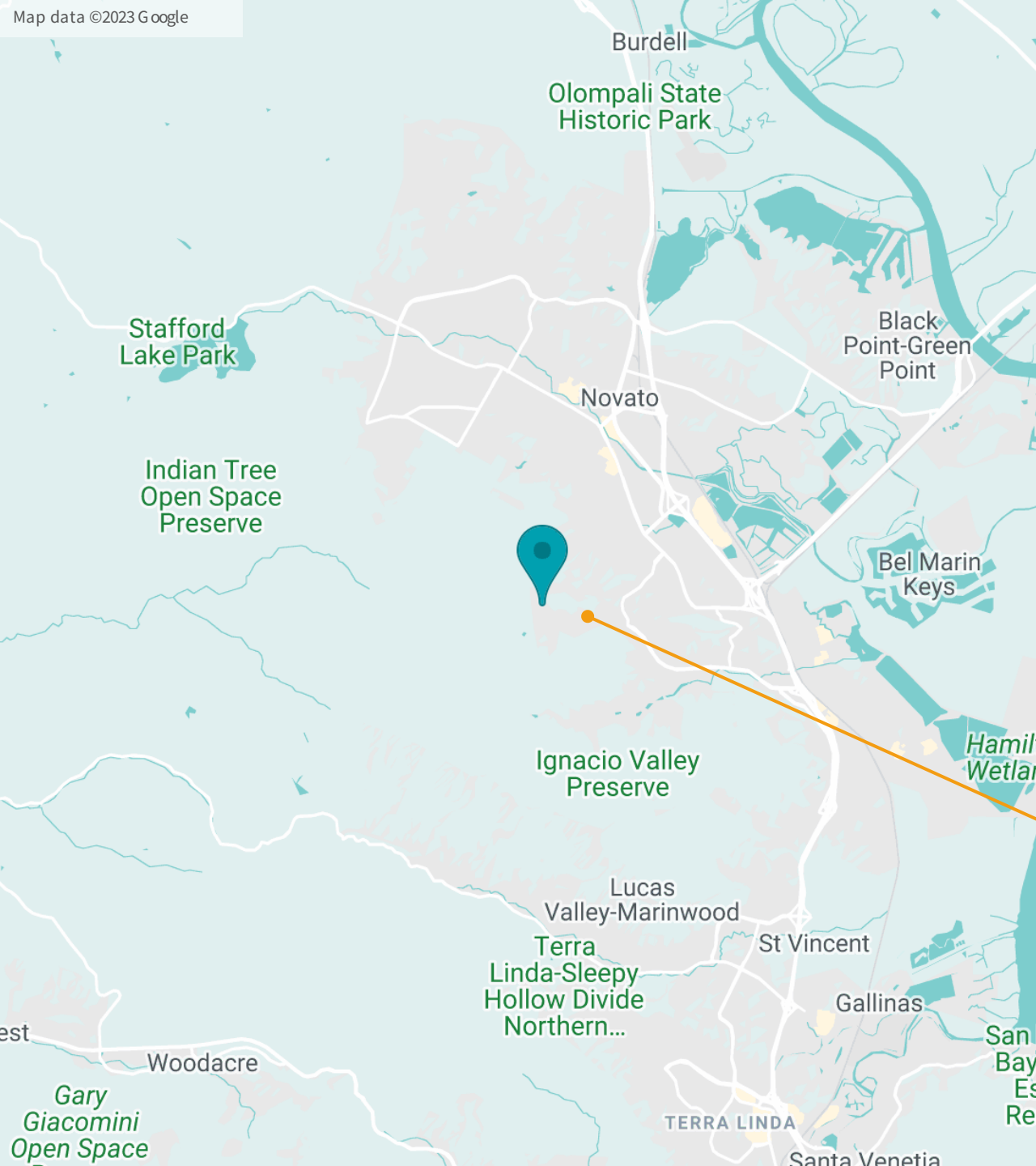
(415) 485-9432
ss.marin.edu/counseling



Summary/Wrap-up

Thoughts? **Questions?**

NEXT STEPS



Thank You!

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College of Marin, Indian Valley Campus