BC Business Computing
CIS Computer Information Systems
CST Computer Service Technology
CYBR Cybersecurity
ICS Information & Computer Sciences

Technology Advisory Board Meeting Minutes 05/19/23

Department Chair
Professor Tobi West, CISSP, GCFE

The purpose of the meeting is to gain feedback from industry, government, and academic professionals working in the areas of computer information systems, computer service technology, and cybersecurity with emphasis on computer networking, data analytics, cybersecurity, and other related professions.

Meeting Attendees	
Tobi West, CISSP	Professor, Computer Information Systems, Coastline College
Brandon Brown	Associate Professor, Computer Service Technology, Coastline College
Andrea Barrios	Assistant Professor, Cybersecurity
Abby Deras	Cybersecurity Engineer, Qualcomm
Aeron Zentner	Dean of Research, Planning, Effectiveness, & Grants, Coastline College
Anand Rao	IT Director, City of Garden Grove
Andy Cuberly	Chief Technology Officer
Andy Giron	Cybersecurity Researcher, Incident Response
Brian Hagerty	Executive Director, P3 Innovation Center for "People, Planet and Prosperity"
Chris Simpson	Program Director, Cybersecurity, National University
Christine Kirkpatrick	Division Director, Research Data Services, San Diego Supercomputer Center, UCSD
Doina Bein	Professor, Computer Science, California State University, Fullerton
Eric Crutchlow	Red Team Manager, WRCCDC
Gora Datta	Chair, IEEE Southern California Council (co-Chair HL7 Mobile Health; Convenor ISO/TC215 Traditional Medicines, Chair IEEE Healthcare: Blockchain & AI Virtual Series)
Gustavo Chamorro	Community College Senior Advisor, CEO Leadership Alliance, Orange County
K Singh	Incident Responder, CrowdStrike
Laura Chappell	Founder of Chappell University, Wireshark University, & WCNA Certification program
Malia Mason	CEO & Co-Founder, CyberDEI
Myra Clarke	Director Career Technical Education, Garden Grove Unified School District
Ramon Garo	Cybersecurity and Incident Response Manager, IBM
Ron Pike	Professor, Business Administration and Cybersecurity, Cal Poly Pomona
Terry Ginsburg	Cybercrime Specialist & Digital Forensic Examiner, Supervisor, Cyber Investigations Unit

PROGRAM OVERVIEW

Student demographics, resources, and job placement rates
Coastline organizational model
LMI/Program enrollment and completions
ACE Institute/Pakistan Program
Curriculum Review
Student Club & Competitions
Articulation agreements with Cal Poly Pomona, National University, and Norwich University

CURRICULUM / REVIEW OF PROGRAMS

Degree Offerings [effective Fall 2022]

CIS - Associate of Science – Data Analytics
CST - Associate of Science – Cloud Computing (AWS)
CST - Associate of Science – Information Technology
CYBR - Associate of Science – Cybersecurity
CYBR - Associate of Science – Digital Forensics & Incident Response

Dept	Name	Type	Effective
CIS	**Data Analytics**	**Associate of Science**	**Fall 2022**
CIS	Data Analytics	Certificate of Specialization	Fall 2022
CIS	Data Analytics	Certificate of Achievement	Fall 2022
CIS	Data Science	Certificate of Achievement	Fall 2021
CIS	Introduction to Programming	Certificate of Accomplishment	Fall 2019
CST	**Cloud Computing**	**Associate of Science**	**Fall 2022**
CST	Cloud Computing	Certificate of Achievement	Fall 2022
CST	Amazon Web Services Associate	Certificate of Accomplishment	Fall 2020
CST	**Information Technology**	**Associate of Science**	**Fall 2022**
CST	Information Technology	Certificate of Achievement	Fall 2022
CST	IT Foundation	Certificate of Achievement	Fall 2022
CST	IT Support Specialist	Certificate of Accomplishment	Fall 2022
CST	Cisco Certified Networking Administrator (CCNA)	Certificate of Achievement	Fall 2022
CST	Red Hat Linux Administration	Certificate of Accomplishment	Spring 2022
CYBR	**Cybersecurity**	**Associate of Science**	**Fall 2022**
CYBR	Cybersecurity	Certificate of Achievement	Fall 2022
CYBR	Cybersecurity Analyst	Certificate of Achievement	Fall 2022
CYBR	Cybersecurity Fundamentals	Certificate of Accomplishment	Fall 2022
CYBR	Cybersecurity and Computer Networking	Certificate of Accomplishment	Fall 2022
CYBR	Offensive Security	Certificate of Achievement	Fall 2022
CYBR	**Digital Forensics and Incident Response**	**Associate of Science**	**Fall 2022**
CYBR	Digital Forensics and Incident Response	Certificate of Achievement	Fall 2022

Proposed Curriculum

SUBJECT CODE CHANGES

CST -> Information Technology (IT)
Health Information Technology (HIT)

NEW PROGRAMS

Computer Information Systems (AS degree & cert)
Data Science (AS degree & cert)
CST (enhanced non credit)

Cybersecurity (Bachelor's degree)
Information and Computer Sciences (AS degree & cert)
Rename AWS to Cloud Operations

NEW COURSES AND MODULES

Technical Project Manager
Cyber Threat Intelligence OSINT
Threat Hunting & Advanced Pentesting
Cryptocurrency Security & NFT
DevOps
Cloud Systems Ops
Cyber Metrics
Cyber Analytics
Cyber Detection
Cybersecurity Program Management

Automotive Security & Forensics
Interplanetary Internet Security
Docker/Kubernetes/Containerization
IoT Security
Policy and Procedures
Smartphone Forensics
Blockchain
Data Privacy
Misinformation & Disinformation

Bachelor's Degree (AB 927)
- Cyber Defense
- Cyber Operations
- Cybercrime Investigator
- Cyber Incident Response
- Offensive Security
- Cloud Security

PROJECT & INNOVATION UPDATES
- STORM Cyber Innovation Lab
- CompTIA voucher project (successes + plans)
- CyberTech Girls, college and high school students
- CA Cybersecurity Apprenticeship Program (CCAP)
- Develop pathways (dual/concurrent enrollment programs)
- WRCCDC, college and university students
- CyberPatriot, high school students
- Hacker Camp, high school students
- Diversity Building Workshops (future plans)
- Regional Project Proposals submitted
  - Cybersecurity Teacher Camp
  - Student Security Operations Center
  - Women in Cybersecurity events and activities

FEEDBACK/RECOMMENDATIONS
New programs/courses (see list above and comments below)
Meeting industry needs and demands for skilled professionals
Emerging trends
- Jobs
- Skills gaps
- Certifications
- Technology
- Employment opportunities

Additional recommendations

BOARD MEMBER COMMENTS

Abby Deras	▪ We'd like to see more students with more knowledge of the security frameworks ▪ Frameworks and compliance are important skills and emerging requirements ▪ IoT Security and Forensics
Aeron Zentner	▪ Consider developing new outreach events for Data Analytics ▪ Continue student club activities for Data Analytics & Cybersecurity ▪ Look at using student coaches for student retention and persistence opportunities ▪ Offer exam vouchers for CompTIA's Data+ certification ▪ Build out the AS degree for Data Science ▪ Consider establishing a Computer Science department
Anand Rao	▪ Policy & Procedures ▪ Entry-level jobs rarely require only entry-level skills and often look for at least 2 years of experience ▪ Glad to see the potential for a bachelor's in cybersecurity
Andy Cuberly	▪ New employees lack knowledge of the basics ▪ Students need to learn the basics to prepare for the workforce ▪ Industry recognized certifications are very important
Andy Giron	▪ I like the Threat Intelligence, I think OSINT can be included in an overall CTI course
Brian Hagerty	▪ Employers care most about the skills
Chris Simpson	▪ A student that can talk frameworks well in an interview is probably a step above others

	- Cyber Threat Hunting - Cyber Analytics - Cloud Systems Operations - National University is looking at doing a grad specialization in Threat Hunting - https://shrm.org/foundation/about/Documents/The%20Rise%20Of%20Alternative%20Credentials%20In%20Hiring.pdf?utm_campaign=The%20Job&utm_medium=email&utm_source=Revue%20newsletter - These skills are perishable too, students need to practice after they learn… - Can share NU curriculum for Data Analytics and Data Science
Christine Kirkpatrick	- Business + security combos - Many students work while going to school so build it into the program through internships and apprenticeships - Consider creating a video about the program - Many students could benefit from the coaching and opportunities that WiCyS offers, not only women - Focus on connecting to job requirements or transfer needs. This could also be a place you focus on your strength in cyber and make this focused on analyzing cyber logs, trends, etc. CK
Doina Bein	AI is cutting jobs: https://aibusiness.com/nlp/bt-to-cut-up-to-55-000-jobs-due-to-ai-automation
Eric Crutchlow	- Wi-fi satellite cellular - Students need skills for public speaking and presentation to management
Gora Datta	- Full certificate program PHIT https://www.healthit.gov/topic/interoperability/investments/public-health-informatics-technology-phit-workforce-development - Supports move for Medical Coding and Medical Specialist to Health Information Technology
Gustavo Chamorro	- Moving the Medical Coding and Specialist programs to Health IT would be best - Generalizable AI - Develop Computer Science program - Consider ways to connect students with employers for job shadowing, internships, and apprenticeships - Meet with employers to share program information - Collaborate with regional partners to specialize curriculum and reduce duplication at other institutions
K Singh	Hands-on labs are critical to help students prepare for work
Laura Chappell	- We did a ChatGPT Murder Mystery to teach investigative techniques using AI - Has a contact to share that does AI for incident response - Acting as an advisor on an NSF project working with mega corporations looking at jobs for the next 50+ years https://nationalctc.nationalctcwiki.org/_media/seven_it_trends_-_summer_2021.pdf - Cyber metrics and reporting - Automotive Security and Forensics - see Berla Forensics - IoT Security - Soft Skills - Consulting Essentials, Customer Interactions, Reporting - Remote access security - Contact for smartphone forensics: Amber Schroeder of Paraben Corporation (Founder) - see paraben.com (great presenter, too) - OSINT! Yes!!!! - Interplanetary Internet Security IPNSIG.org - Sign me up for a training workshop, speaking/panel (protocols, Wireshark, space comms, soft skills of consulting, etc.) - Badging, micro-skills - Badges are used for today's social media-based resumes

	▪ Basics: frames, packets, switching, routing, IP addressing, infrastructure elements, ARP, DNS, DHCP, UDP, TCP, HTTP/HTTPS, client/server computing basics... essential command line tools, essential commands
Malia Mason	▪ Students need skills for developing RFP's, executive reporting, metrics gathering and presentation ▪ Cyber metrics and reporting is so essential and frankly missing. ▪ Consider covering docker and kubernetes as well ▪ Container security ▪ Emerging job needs - CMMC compliance ▪ Emerging job needs - crypto and blockchain experience ▪ Security automation ▪ AppSec is still big
Myra Clarke	▪ Continue building relationships with K-12 teachers ▪ STEM events for girls are in demand
Ramon Garo	▪ Building diversity in the workforce is important to IBM ▪ Content related to containerization technology, Kubernetes ▪ Threat Hunting and SOAR ▪ Advanced penetration testing course; an idea to consider would be to have the students in this course break VMs/applications that then students in the digital forensics course have to analyze. The same idea could also be applied to the student SOC and the IR class, for examples, with a free platform like Velociraptor. ▪ Data Analytics for digital forensics; Data analytics methodology, e.g., baselining normal activity and anomaly detection, is a really useful skill for DFIR and would be a great topic to include somewhere in the overall program. ▪ How about Incident Response Analysis, Cyber Incident Response Analysis, or Cybersecurity Incident Response Analysis? ▪ Cyber Detection, Protection, Response ▪ Cyber Blue Team Operations ▪ Willing to help with a workshop or a talk ▪ Security focused development seems to be pretty big, along with Security Automation and DevSecOps
Ron Pike	▪ Automation and generalizable AI will end coding and recording tasks over time ▪ I love what you're doing around data analytics ▪ CPP advisory board members say they use generalizable AI. In fact, in most to all cases it was ChatGPT every day in their work ▪ Cal Poly Pomona has a BS and MS in data analytics and given the close integration of lower-division classes these may be an easy transition for Coastline students
Terry Ginsburg	▪ Blockchain technology from a cybercrime perspective ▪ Use and abuse of digital assets

/* Coastline College guides diverse populations of students toward the attainment of associate degrees and certificates leading to career advancement, personal empowerment, and transfer. */

—Mission Statement

755,743

TOTAL U.S. CYBERSECURITY JOB OPENINGS

www.cyberseek.org

Our Team

Brandon Brown, PhD
Director WRCCDC
AWS, Cisco

Professor Tobi West
Department Chair
CISSP, GCFE

Andrea Barrios
WRCCDC Coach
CISSP, GCFE

+13 Part-time Faculty
Bai, Bund, Clough, Crowley, Cuberly, Farhad, Giron, Khambatta,
Konefsky, Nguyen, Oberlin, Vidal, Zentner

Agenda

1 **Program Overview**
Demographics & LMI

2 **Curriculum**
Existing & Upcoming

3 **Projects**
Grants & Innovations

4 **Feedback**
Recommendations & Ideas

Program Overview

1

Student demographics &
Labor Market Information
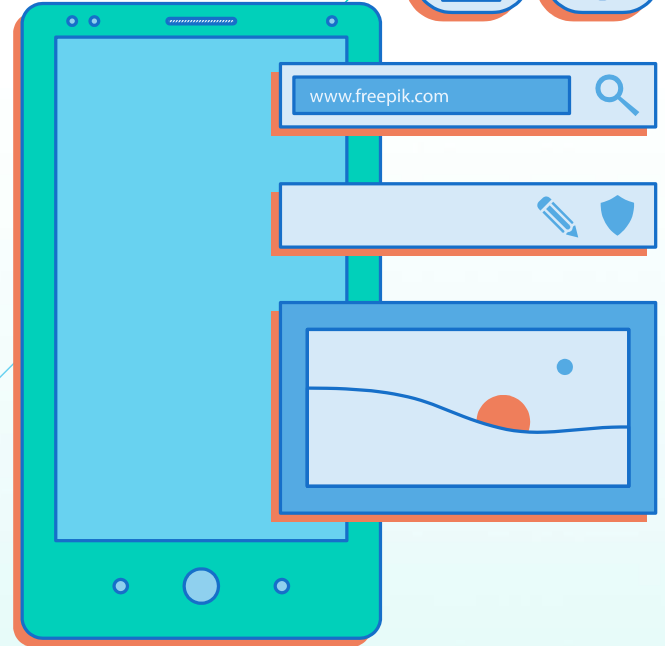
Enrollment Characteristics

2022-2023	Enrollment	Headcount	Female	HSI	AANAPISI	Under 25
College	39,010	16,420	46%	29%	24%	44%
BC	247	148	73%	31%	25%	8%
CIS	564	433	36%	27%	24%	34%
CST	615	419	23%	31%	27%	36%
CYBR	537	368	21%	25%	29%	40%

* Recently moved many CST courses to CYBR

No-Cost Student Resources

Remote Labs

NetLab
Cisco Academy
AWS Academy

Practice Tests

CyberVista
CCCure

Certification Vouchers

CompTIA
AWS
Cisco CCNA

Program Achievement

	2022-2023		2021-2022	
	Success	**Retention**	**Degrees**	**Certs**
College	77%	88.5%	1,426	562
BC	79.1%	87.8%	N/A	13
CIS	63%	73.4%	1	3
CST	71.4%	85.2%	9	14
CYBR	66.1%	83.1%	33	78

* Recently moved many CST courses to CYBR

Labor Market Information

	2020 Jobs	2025 Jobs	5 Year %	Annual	Entry-Level
Network Support	1,686	1,732	3%	132	$26.56
User Support	7,479	7,766	4%	607	$35.60
Network Architect	1,659	1,685	2%	105	$71.00
Systems Admin	3,220	3,277	2%	220	$56.03
Systems Analyst	5,814	5,993	3%	444	$64.01
Info Sec Analyst	988	1,153	17%	109	$66.17

* EDD shows Information Security Analyst projected growth 2018-2028 = 31.2%

Career Education Job Placement Rates

Program	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
Computer Infrastructure and Support (4-Digit TOP Code 0708) (CIP Code 11.1003)	60.3%	44.0%	43.6%	35.4%	49.2%	42.1%	56.3%	69.4%
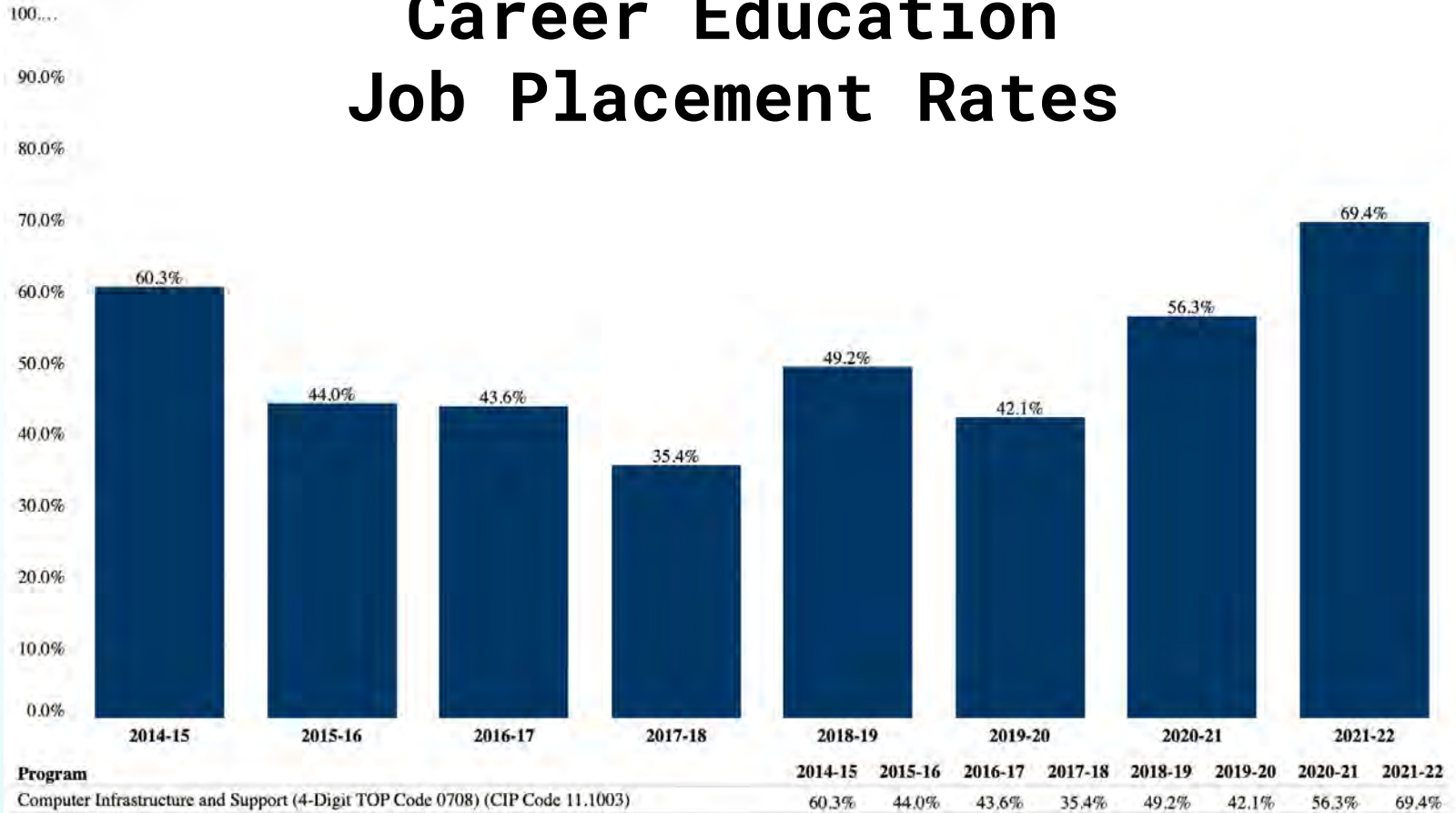
EDD Labor Market Information

2018-2028	Employment	Projected Empl.	Change	% Change	Growth Rate %
Information Security Analysts	770	1,010	240	31.2%	2.8%
Operations Research Analysts	1,380	1,780	400	29%	2.6%
Computer & Info Research Scientists	280	330	50	17.9%	1.7%
Computer & Info Systems Managers	5,390	6,080	690	12.8%	1.2%
Computer User Support Specialists	8,860	10,000	1,140	12.9%	1.2%
Computer Hardware Engineers	1,510	1,680	170	11.3%	1.1%
Computer Systems Analysts	5,190	5,750	560	10.8%	1%
Computer Network Architects	1,600	1,770	170	10.6%	1%
Computer Network Support Specialists	1,650	1,800	150	9.1%	0.5%
All Occupations	1,764,000	1,890,300	126,300	7.2%	0.7%

Curriculum

Existing & Suggested

Associate Degrees

1 — **Data Analytics** — CIS

2 — **Cloud Computing** — CST

3 — **Information Technology** — CST

4 — **Cybersecurity** — CYBR

5 — **Digital Forensics & Incident Response** — CYBR
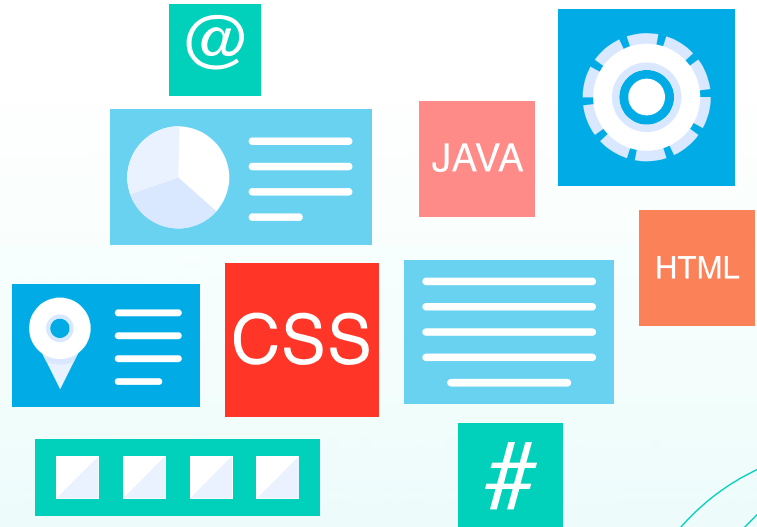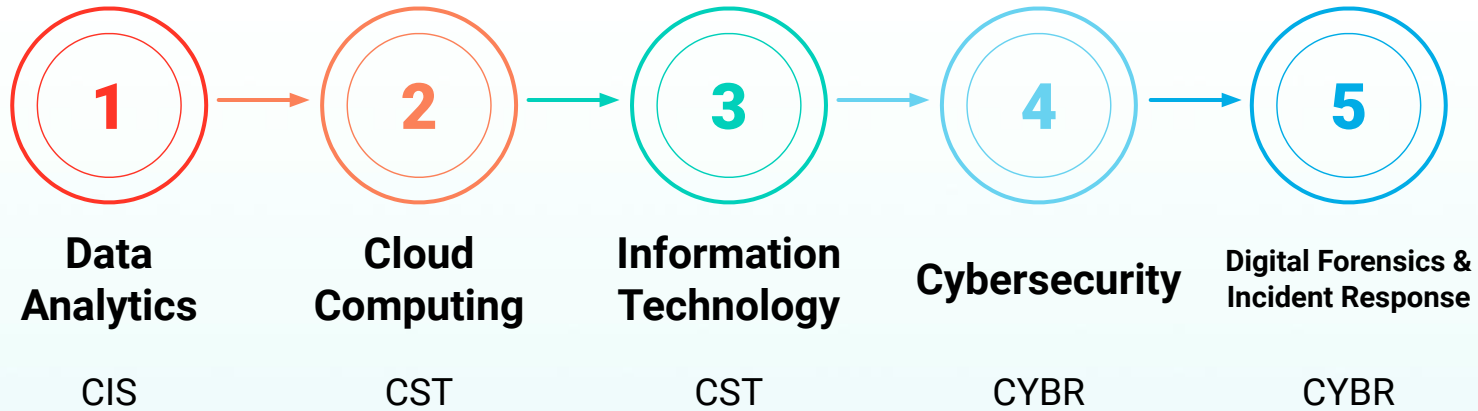
Certificates

CYBERSECURITY

- Cybersecurity
- Cybersecurity Analyst
- Cybersecurity Fundamentals
- Cybersecurity & Networking
- DFIR
- Offensive Security

COMPUTER SERVICE TECHNOLOGY

- Cisco Certified Networking Admin (CCNA)
- Cloud Computing
- IT Foundation
- IT Support Specialist
- Information Technology
- Amazon Web Services Associate
- Red Hat Linux Administration

COMPUTER INFORMATION SYSTEMS

- Data Analytics
- Data Science
- Intro to Programming

BUSINESS COMPUTING

- Medical Administrative Office
- Medical Coding
- (NC) Customer Service Technology

Customer Service Technology

Enhanced Non-Credit

Data Analytics & Cybersecurity
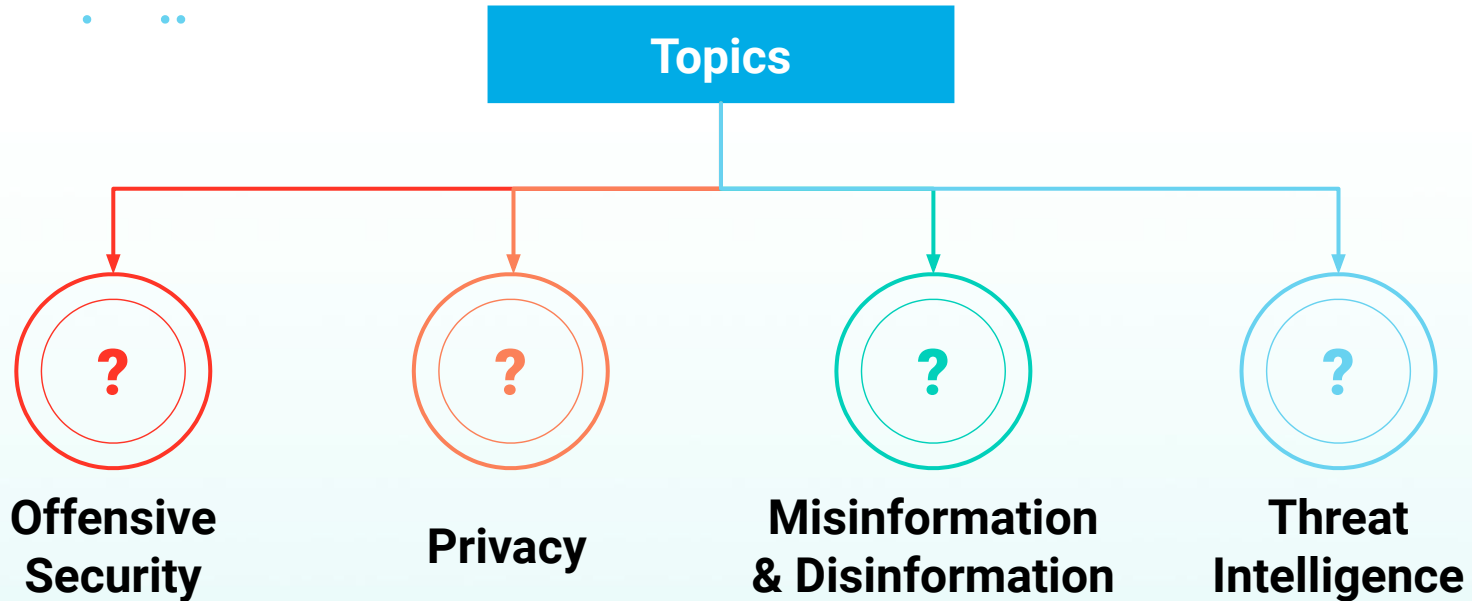
ACE Institute / Pakistan

Cisco

Temporarily Discontinued

Fall Programs

Proposed Bachelor's Degree

Unique

Does not match CSU/UC

Transfer

Move between Coastline & CSU/UC

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Accredited

ACCJC approval needed

Systems

Application and tracking
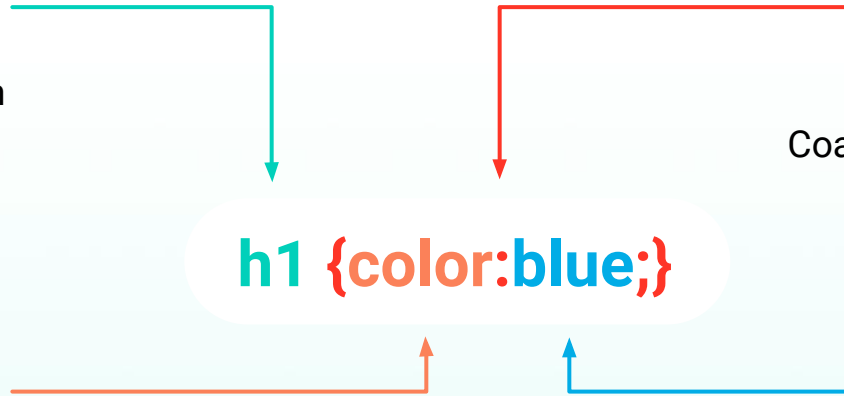
Program Suggestions

Do you have any curriculum recommendations?

3

Projects

Grants
& Innovations
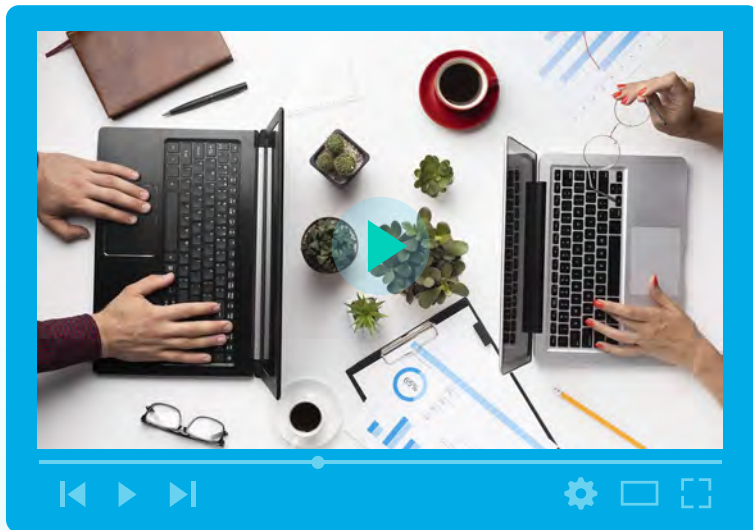
Ongoing Projects

CyberTech Girls

Diversity & Inclusion
Technology events for
MS/HS girls

Apprenticeship

Workforce Dev
Cybersecurity jobs
and edu

WRCCDC

Skills Dev
Competition for
2yr & 4yr students

CyberPatriot

Skills Dev
Competition for
MS/HS students

Dual Enrollment

Outreach Activities

CyberTech Girls

Computer Science
Summer Workshops
Fall Event

Hacker Camp

Pathway
High School Students

Regional Projects

Student SOC
Women in Cyber
Teacher Camp

Partnerships?

Commitment to hire interns or apprentices
Provide training workshop
Panel or speaker
Attend career fair or events

4

Feedback

Your Recommendations
& Suggestions

Emerging Trends

1. Jobs
2. Skills gaps
3. Certifications
4. Technology
5. Employment opportunities

Thank You

Keep in touch!
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Appendix

Additional program data
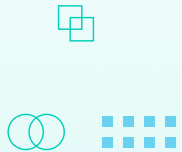
CIS Programs

Degree & Certificates

Associate of Science in Data Analytics

Data Analytics, Associate of Science			Units
Required	CIS C111	Information Systems, Programming, and Database Management	3
Required	CIS C157	Introduction to Python Programming	3
Required	CIS C240	SQL Database Development	3
Required	CIS C250	Introduction to Data Analytics	3
Required	CIS C260	Systems Analysis and Design	3
Required	CIS C275	Data Mining and Analytics (Data+)	3
		Choose one elective	3
Required	CIS C280	Data Visualization	
Required	CIS C270	Applied Predictive Analytics	
Required	CIS C190	Introduction to GIS and Techniques with Lab	
		General Education	39
		Total	*60*

Certificate of Achievement in Data Analytics

Data Analytics, Certificate of Achievement			Units
Required	CIS C111	Information Systems, Programming, and Database Management	3
Required	CIS C157	Introduction to Python Programming	3
Required	CIS C240	SQL Database Development	3
Required	CIS C250	Introduction to Data Analytics	3
Required	CIS C260	Systems Analysis and Design	3
Required	CIS C275	Data Mining and Analytics (Data+)	3
		Choose one elective	3
Required	CIS C280	Data Visualization	
Required	CIS C270	Applied Predictive Analytics	
Required	CIS C190	Introduction to GIS and Techniques with Lab	
		Total	21

Certificate of Specialization in Data Analytics

Data Analytics, Certificate of Specialization			Units
Required	CIS C240	SQL Database Development	3
Required	CIS C250	Introduction to Data Analytics	3
Required	CIS C280	Data Visualization	3
		Total	9

CST Programs

Degrees & Certificates

Certificate of Accomplishment in Amazon Web Services Associate

Amazon Web Services Associate, Certificate of Accomplishment			Units
Required	CST C198	Amazon Web Services (AWS) Cloud Foundations	3
Required	CST C295	Amazon Web Services Architect Associate	3
Required	CST C296	Amazon Web Services Cloud Operations Associate	3
Required	CST C297	Amazon Web Services Cloud Developer	3
		Total	12

Certificate of Achievement in Cisco Certified Networking Administrator (CCNA)

Cisco Certified Networking Administrator (CCNA), Cert of Achievement (3_CE_CCNA)			Units
Required	CST C110	Computer Hardware and Software (A+ Essentials)	4
Required	CST C198	Amazon Web Services (AWS) Cloud Foundations	3
Required	CST C201D	CCNA 1: Introduction to Networks (ITN)	3
Required	CST C202D	CCNA 2: Switching, Routing, and Wireless Essentials	3
Required	CST C203D	CCNA 3: Enterprise Networking, Security, and Automation	3
		Total	**16**

Associate of Science
in Cloud Computing

Cloud Computing, Associate of Science			Units
Required	CST C104	IT Fundamentals	3
Required	CST C128	Computer Networking Principles (Network+)	3
Required	CST C158	Contemporary Operating Systems (Server+)	3
Required	CYBR C101	Introduction to Cybersecurity	3
Required	CST C198	Amazon Web Services (AWS) Cloud Foundations	3
Required	CST C295	Amazon Web Services Architect Associate	3
Required	CST C296	Amazon Web Services Cloud Operations Associate	3
Required	CST C297	Amazon Web Services Cloud Developer	3
General Education			36
Total			*60*

Certificate of Achievement in Cloud Computing

Cloud Computing, Certificate of Achievement			Units
Required	CST C104	IT Fundamentals	3
Required	CST C128	Computer Networking Principles (Network+)	3
Required	CST C158	Contemporary Operating Systems (Server+)	3
Required	CYBR C101	Introduction to Cybersecurity	3
Required	CST C198	Amazon Web Services (AWS) Cloud Foundations	3
Required	CST C295	Amazon Web Services Architect Associate	3
Required	CST C296	Amazon Web Services Cloud Operations Associate	3
Required	CST C297	Amazon Web Services Cloud Developer	3
		Total	24

AS in Information Technology

Information Technology, Associate of Science (3_AS_CNCIS)			Units
Required	CST C104	IT Fundamentals	3
Required	CST C110	Computer Hardware and Software (A+ Essentials)	4
Required	CST C128	Computer Networking Principles (Network+)	3
Required	CST C158	Server+ (Contemporary Operating Systems)	3
Required	CYBR C101	Introduction to Cybersecurity	3
Required	CIS C157	Introduction to Python Programming	3
		Choose 2 elective courses:	6
Elective	CIS C260	Systems Analysis and Design	
Elective	CST C172	SQL Server Design and Implementation	
Elective	CST C177A	MD-100: Windows 10	
Elective	CST C177B	Configuring Windows	
Elective	CST C191A	CompTIA Linux+	
Elective	CST C248B	Wireless Networking	
Elective	CST C264	Introduction to Red Hat Linux Administration	
Elective	CST C274	Red Hat System Administration 2	
Elective	CST C275	Red Hat System Administrator 3	
Elective	CST C198	Amazon Web Services (AWS) Cloud Foundations	
Elective	CST C295	Amazon Web Services Architect Associate	
Elective	CST C296	Amazon Web Services Cloud Operations Associate	
Elective	CST C297	Amazon Web Services Cloud Developer	
Elective	CST C201D	CCNA 1: Introduction to Networks (ITN)	
Elective	CST C202D	CCNA 2: Switching, Routing, and Wireless Essentials	
Elective	CST C203D	CCNA 3: Enterprise Networking, Security, and Automation	
		General Education	35
		Total	**60**

Certificate of Achievement in Information Technology

Information Technology, Certificate of Achievement (3_CN_CNCIS)			Units
Required	CST C104	IT Fundamentals	3
Required	CST C110	Computer Hardware and Software (A+ Essentials)	4
Required	CST C128	Computer Networking Principles (Network+)	3
Required	CST C158	Contemporary Operating Systems (Server+)	3
Required	CYBR C101	Introduction to Cybersecurity	3
Required	CIS C157	Introduction to Python Programming	3
		Choose 2 elective courses:	6
Elective	CIS C260	Systems Analysis and Design	
Elective	CST C172	SQL Server Design and Implementation	
Elective	CST C177A	MD-100: Windows 10	
Elective	CST C177B	Configuring Windows	
Elective	CST C191A	CompTIA Linux+	
Elective	CST C248B	Wireless Networking	
Elective	CST C264	Introduction to Red Hat Linux Administration	
Elective	CST C274	Red Hat System Administration 2	
Elective	CST C275	Red Hat System Administrator 3	
Elective	CST C198	Amazon Web Services (AWS) Cloud Foundations	
Elective	CST C295	Amazon Web Services Architect Associate	
Elective	CST C296	Amazon Web Services Cloud Operations Associate	
Elective	CST C297	Amazon Web Services Cloud Developer	
Elective	CST C201D	CCNA 1: Introduction to Networks (ITN)	
Elective	CST C202D	CCNA 2: Switching, Routing, and Wireless Essentials	
Elective	CST C203D	CCNA 3: Enterprise Networking, Security, and Automation	
		Total	25

Certificate of Achievement in IT Foundation

IT Foundation, Certificate of Accomplishment (3_CE_ITFOUN)			Units
Required	CST C104	IT Fundamentals	3
Required	CST C110	Computer Hardware and Software (A+ Essentials)	4
Required	CST C128	Computer Networking Principles (Network+)	3
Required	CST C198	Amazon Web Services (AWS) Cloud Foundations	3
Required	CYBR C101	Introduction to Cybersecurity	3
		Total	16

Certificate of Accomplishment in IT Support Specialist

IT Support Specialist, Certificate of Accomplishment (3_CE_ITSS)			Units
Required	CST C104	IT Fundamentals	3
Required	CST C110	Computer Hardware and Software (A+ Essentials)	4
Required	CST C128	Computer Networking Principles (Network+)	3
Required	CYBR C230	Network Security (Security+)	3
		Total	13

CYBR Programs

Degrees & Certificates

AS in Cybersecurity

Cybersecurity, Associate of Science (3_AS_CYBR2)			Units
Required	CYBR C101	Introduction to Cybersecurity	3
Required	CST C128	Computer Networking Principles (Network+)	3
Required	CST C158	Server+ (Contemporary Operating Systems)	3
Required	CIS C157	Introduction to Python Programming	3
		Choose 3 electives:	*9*
Elective	CYBR C132	Intro to Ethical Hacking	
Elective	CYBR C150	Introduction to Digital Forensics	
Elective	CYBR C160	Introduction to Incident Response	
Elective	CYBR C170	Cybercrime and CSIRT Coordination	
Elective	CYBR C225	Cybersecurity Governance, Risk, and Compliance	
Elective	CYBR C227	Cyber-Physical Security: Protecting Critical Infrastructure	
Elective	CYBR C230	Networking Security (Security+)	
Elective	CYBR C234	Web Application Security	
Elective	CYBR C242	Vulnerability Assessment (PenTest+)	
Elective	CYBR C250	Intermediate Digital Forensics	
Elective	CYBR C255	Cybersecurity Analyst (CySA+)	
Elective	CYBR C256	Mobile Device Forensics	
Elective	CYBR C260	Intermediate Incident Response	
Elective	CYBR C270	Certified Information Systems Security Professional	
Elective	CYBR C271	Become A Security Consultant	
Elective	CYBR C280	Advanced Digital Forensics & Incident Response Capstone	
Elective	CYBR C291	CompTIA Advanced Security Practitioner	
Elective	CST C191A	Linux Operating System Principles (Linux+)	
		General Education	39
		Total	**60**

Certificate of Achievement in Cybersecurity

Cybersecurity, Certificate of Achievement (3_CN_CYBR2)			Units
Required	CYBR C101	Introduction to Cybersecurity	3
Required	CST C128	Computer Networking Principles (Network+)	3
Required	CST C158	Server+ (Contemporary Operating Systems)	3
Required	CIS C157	Introduction to Python Programming	3
		Choose 3 electives:	9
Elective	CYBR C132	Intro to Ethical Hacking	
Elective	CYBR C150	Introduction to Digital Forensics	
Elective	CYBR C160	Introduction to Incident Response	
Elective	CYBR C170	Cybercrime and CSIRT Coordination	
Elective	CYBR C225	Cybersecurity Governance, Risk, and Compliance	
Elective	CYBR C227	Cyber-Physical Security: Protecting Critical Infrastructure	
Elective	CYBR C230	Networking Security (Security+)	
Elective	CYBR C234	Web Application Security	
Elective	CYBR C242	Vulnerability Assessment (PenTest+)	
Elective	CYBR C250	Intermediate Digital Forensics	
Elective	CYBR C255	Cybersecurity Analyst (CySA+)	
Elective	CYBR C256	Mobile Device Forensics	
Elective	CYBR C260	Intermediate Incident Response	
Elective	CYBR C270	Certified Information Systems Security Professional	
Elective	CYBR C271	Become A Security Consultant	
Elective	CYBR C280	Advanced Digital Forensics & Incident Response Capstone	
Elective	CYBR C291	CompTIA Advanced Security Practitioner	
Elective	CST C191A	Linux Operating System Principles (Linux+)	
		Total	21

Certificate of Achievement in Cybersecurity Analyst

Cybersecurity Analyst, Certificate of Accomplishment (3_CN_CYAN)			Units
Required	CYBR C101	Introduction to Cybersecurity	3
Required	CST C128	Computer Networking Principles (Network+)	3
Required	CST C158	Server+ (Contemporary Operating Systems)	3
Required	CIS C157	Introduction to Python Programming	3
		Choose 2 electives:	*6*
Elective	CST C191A	Linux Operating System Principles (Linux+)	
Elective	CYBR C132	Introduction to Ethical Hacking	
Elective	CYBR C150	Introduction to Digital Forensics	
Elective	CYBR C160	Introduction to Incident Response	
Elective	CYBR C230	Network Security (Security+)	
Elective	CYBR C242	Vulnerability Assessment (PenTest+)	
Elective	CYBR C255	Cybersecurity Analyst (CySA+)	
Elective	CYBR C270	Certified Information Systems Security Professional	
Elective	CYBR C291	CompTIA Advanced Security Practitioner	
		Total	*18*

Certificate of Accomplishment in Cybersecurity Fundamentals

Cybersecurity Fundamentals, Certificate of Accomplishment (3_CE_CYFUND)			Units
Required	CYBR C101	Introduction to Cybersecurity	3
Required	CST C128	Computer Networking Principles (Network+)	3
Required	CST C158	Server+ (Contemporary Operating Systems)	3
Required	CIS C157	Introduction to Python Programming	3
		Total	*12*

Certificate of Accomplishment in Cybersecurity & Computer Networking

Cybersecurity and Computer Networking, Cert of Accomplishment (3_CE_CYBR2)			Units
Required	CYBR C101	Introduction to Cybersecurity	3
Required	CST C128	Computer Networking Principles (Network+)	3
		Choose 2 electives:	**6**
Elective	CST C191A	Linux Operating System Principles (Linux+)	
Elective	CST C198	Amazon Web Services (AWS) Cloud Foundations	
Elective	CST C248B	Wireless Networking	
Elective	CYBR C170	Cybercrime and CSIRT Coordination	
Elective	CYBR C230	Network Security (Security+)	
Elective	CYBR C270	Certified Information Systems Security Professional	
		Total	**12**

Associate of Science in Digital Forensics & IR

Digital Forensics and Incident Response, Associate of Science (3_AS_DiF)			Units
Required	CYBR C101	Introduction to Cybersecurity	3
Required	CST C128	Computer Networking Principles (Network+)	3
Required	CST C158	Server+ (Contemporary Operating Systems)	3
Required	CIS C157	Introduction to Python Programming	3
Required	CYBR C150	Introduction to Digital Forensics	3
Required	CYBR C160	Introduction to Incident Response	3
Required	CYBR C170	Cybercrime and CSIRT Coordination	3
Required	CYBR C250	Intermediate Digital Forensics	3
Required	CYBR C260	Intermediate Incident Response	3
		General Education	33
		Total	*60*

Certificate of Achievement in Digital Forensics & IR

Digital Forensics and Incident Response, Certificate of Achievement (3_CN_DIF)			Units
Required	CYBR C101	Introduction to Cybersecurity	3
Required	CST C128	Computer Networking Principles (Network+)	3
Required	CST C158	Server+ (Contemporary Operating Systems)	3
Required	CIS C157	Introduction to Python Programming	3
Required	CYBR C150	Introduction to Digital Forensics	3
Required	CYBR C160	Introduction to Incident Response	3
Required	CYBR C170	Cybercrime and CSIRT Coordination	3
Required	CYBR C250	Intermediate Digital Forensics	3
Required	CYBR C260	Intermediate Incident Response	3
		Total	27

Certificate of Achievement in Offensive Security

Offensive Security, Certificate of Achievement (3_CE_PENTST)			Units
Required	CYBR C101	Introduction to Cybersecurity	3
Required	CST C191A	Linux Operating System Principles (Linux+)	3
Required	CYBR C132	Introduction to Ethical Hacking	3
Required	CYBR C170	Cybercrime and CSIRT Coordination	3
Required	CYBR C230	Network Security (Security+)	3
Elective	CYBR C234	Web Application Security	3
Required	CYBR C242	Vulnerability Assessment (PenTest+)	3
		Total	**21**

2023 Technology Advisory Board
Curriculum

Business Computing (BC)

Tobi West 4mo
Medical Admin Asst
Move to Health Information Technology
★★★★★ (3) Rate 💬 0
Add comment

Tobi West 4mo
Medical Coding Specialist
Move to Health Information Technology
★★★★★ (3) Rate 💬 0
Add comment

Computer Information Systems (CIS)

Tobi West 4mo
Non-Credit courses (skill builders)
- Basic Computer Skills
- Computer Essentials
- Internet Services & Tools
- Microsoft Office & Cloud Apps for Business Users
  - Word, PowerPoint, Excel, Teams, & Outlook
- Data Analytics Fundamentals
- Data Visualization Fundamentals

☆ Rate 💬 0
Add comment

Tobi West 4mo
AS in Computer Information Systems
- CIS C1## Business and Office Technology**
- BUS C100 Introduction to Business
- CIS C2## Principles of Information Systems**
- CIS C240 SQL Database Development
- ICS C2## Object-Oriented Programming*
- CIS C260 Systems Analysis and Design
- CIS C265 Artificial Intelligence*

☆ Rate 💬 2

Anonymous 4mo
Laura - I think AI needs to be sprinkled throughout many of the courses...

Anonymous 4mo
Eric C - There should be a course that gives an overview of AI without being too deep. I don't know what C265 covers, but need a class that helps people from various backgrounds gain knowledge so they can deal with it from there standpoint/function. I think right now we have too much mythology.

Add comment

Tobi West 4mo
Data Science
Any suggestions?
☆ Rate 💬 2

Anonymous 4mo
I'd start with the job requirements you're pathing someone into and work backwards. Or if preparing transfer students, the intro classes needed.

Christine Kirkpatrick 4mo
Above comment from CK

Add comment

Tobi West 4mo
Data Analytics
Any suggestions?
☆ Rate 💬 4

csimpson112 4mo
National University just started a BS in Data Analytics and would be happy to discuss a pathway

csimpson112 4mo
might be able to share curriculum too

Christine Kirkpatrick 4mo
Same as above in Data Science - focus on connecting to job requirements or transfer needs. This could also be a place you focus on your strength in cyber and make this focused on analyzing cyber logs, trends, etc. CK

Anonymous 4mo
Cal Poly Pomona has a BS and MS in data analytics and given the close integration of lower-division classes these may be an easy transition for Coastline students

Add comment

Computer Service Technology (CST)

Tobi West 4mo
Rename subject Computer Service Technology to Information Technology
Do you like this?
★★★★★ (3) Rate 💬 2

Anonymous 4mo
I like this change. AC

Anonymous 4mo
Laura - Yes - I like this.

Add comment

Tobi West 4mo
Non-Credit courses (skill builders)
CST C1##N Basic Computer & System Networking
★★★★★ (11) Rate 💬 0
Add comment

Tobi West 4mo
Cloud Operations
Rename Certificate of Accomplishment from AWS Associate
★★★★★ (2) Rate 💬 2

csimpson112 4mo
good idea, will you map to certs from the different cloud providers?

Anonymous 4mo
I think this is a good idea. AC

Add comment

Cybersecurity (CYBR)

Tobi West 4mo
Bachelor's degree
☆ Rate 💬 0
Add comment

Anonymous 4mo
Securing IoT and Control Systems
☆ Rate 💬 0
Add comment

Tobi West 4mo
New course ideas
Suggest topics
- Open-Source Intelligence (OSINT)
- Threat Intelligence
- Misinformation / Disinformation
- Privacy

★★★★⯨ (3) Rate 💬 4

Anonymous 4mo
I like the Threat Intelligence, I think OSINT can be included in an overall CTI course - Andy Giron

Terry Ginsburg 4mo
I second Andy's suggestion.

Anonymous 4mo
Cloud Security would be a good idea. - Andy Giron

ramongaro 4mo
Data analytics methodology, e.g. baselining normal activity and anomaly detection, is a really useful skill for DFIR and would be a great topic to include somewhere in the overall program.

Add comment

Tobi West 4mo
Advanced Penetration Testing
Add new course to Offensive Security
★★★★⯨ (5) Rate 💬 1

ramongaro 4mo
An idea to consider would be to have the students in this course break VMs/applications that then students in the digital forensics course have to analyze. The same idea could also be applied to the student SOC and the IR class, for examples, with a free platform like Velociraptor.

Add comment

Tobi West 4mo
Non-Credit courses (skill builders)
1. Personal Cyber Hygiene
2. Cybersecurity Fundamentals
3. Cybersecurity for Managers
4. Basic Cybersecurity for Networking

★★★★★ (1) Rate 💬 3

ramongaro 4mo
What is intended to be covered by the Cybersecurity for Managers class?

Anonymous 4mo
How advanced is Cyber Hygiene? Is it going to be accessible to all skill levels? And plus one to Ramon's question.

Anonymous 4mo
I think disinformation / misinformation can go in this section, I don't see it as a course. - Andy Giron

Add comment

Information & Computer Sciences (ICS)

Tobi West 4mo
AS in Information & Computer Sciences
- Create new programs with 7 courses (AS and Certificate of Achievement)
  - ICS C120 Intro to Programming*
  - ICS C123 Fundamental Data Structures
  - ICS C141 Concepts of Programming Languages I
  - CYBR C101 Intro to Cybersecurity
  - ICS C240 Computer Organization & Assembly Language*
  - ICS C2## Secure Design*
  - ICS C2## Object-Oriented Programming*
    - *OR* CIS C157 Introduction to Python Programming

★★★★★ (2) Rate 💬 2

csimpson112 4mo
How technical is this and is there a math requirement?

Anonymous 4mo
I am also interested in the depth of this program, will there be the same sort of math, assembly programming etc that exist in typical CS? - Ron Pike

Add comment