

MAIN CAMPUS: TUCSON | *Pre-requisites do NOT count as electives*

Title (Choose 4)	Course	Units	Pre-Requisites
Introduction to Biomedical Informatics	SIE 477	3	ECE 175
INSuRE	SIE 472	3	SIE 471
Systems Cyber Security Engineering	SIE 471	3	None
Model Based Systems Engineering	SIE 458	3	SIE 454A
The Systems Engineering Process	SIE 454A	3	None
Fund of Data Science for Engineers	SIE 433	3	SIE 305 or equivalent
Simulation Modeling & Analysis	SIE 431	3	SIE 305
Engineering Stats	SIE 430	3	SIE 305
Technical Sales & Marketing	SIE 415	3	None
Embedded Computer Systems	SIE 370	4	None
Cloud Native (temporarily SIE 496)	SFWE 410	3	SFWE 302
Principles of Cloud Computing	SFWE 409	3	ECE 369A or CSC 252
Directed Research	SFWE 492	3	None
Software for Industrial Control Systems	SFWE 411	3	ECE 275
Computational Linguistics	LING 438	3	None
Advanced Game Development	ISTA 452	3	
Artificial Intelligence	ISTA 450	3	MATH 243 or consent of instructor
Data Warehousing and Analytics in the Cloud	ISTA 431	3	None
Algorithms for Games	ISTA 425	3	
Intro to Machine Learning	ISTA 421	3	(ESOC 214 or ISTA 116 or DATA 363) a
Introduction to Web Design & Development	ISTA 329	3	None
Data Engineering	ISTA 322	3	ECE 175 or ISTA 130 or CSC 110
Data Mining and Discovery	ISTA 321	3	ISTA 116, ESOC 214, or equivalent; or c
Applied Data Visualization	ISTA 320	3	ISTA 116, ESOC 214, or equivalent; or c
Game Artificial Intelligence	GAME 426	3	ISTA 350 or ECE 373 or CSC 210 or inst
Introduction to Game Development with Unity	GAME 351	3	ECE 175 or ISTA 130 or CSC 110
Disruptive Technologies	ESOC 318	3	None
Tech Ventures	ENTR 400 (3	3	Recommended: ENTR 296
Artificial Intelligence	ECE 479	3	ECE 373 or SIE 277
Fund of Computer Networks	ECE 478	3	ECE 275 & ECE 310
Computer Aided Logic	ECE 474A	3	ECE 274A & ECE 275
Fund Info Theory & Ntwk Security	ECE 471	3	None
Knowledge System Engineering	ECE 466	3	None
Computer Architecture & Design	ECE 462	3	ECE 369A
Digital Signal Processing	ECE 429	3	Majors; ECE 340A
Web Development & the IoT	ECE 413	3	ECE 275
Microprocessor Organization	ECE 372A	4	ECE 274A & (ECE 207 or 220) & *ECE 2
Computational Techniques	ECE 330B	3	Majors; MATH 223, MATH 254, PHYS 1
Applications of Engineering Math	ECE 310*	4	MATH 254 & (ECE 207 or 220) & ECE 2
Cyber Threat Intelligence	CYBV 435	3	None
Active Cyber Defense	CYBV 400	3	None
Introduction to Cyber Operations	CYBV 385	3	None
Comparative Programming Languages	CSC(V) 372	3	CS Major; CSC 210
Intro to Computer Vision	CSC 477	3	CS Major; CSC 252, CSC 335, CSC 345,

Database Design	CSC 460	3	CS Major; CSC 335 & CSC 345
Compilers and Systems Software	CSC 453	3	CS Major; CSC 252, 345, 352. CSC 372
Prin Operating Systems	CSC 452	3	CS Major; CSC 252, CSC 345 & CSC 352
Data Visualization	CSC 444	3	CS Major; CSC 335 & CSC 345
Software Engineering	CSC 436	3	CS Major; CSC 252, CSC 335, CSC 345, ,
Computer Graphics	CSC 433	3	CS Major; CSC 252, 335, 345, 352, and
Comparitive Programming Languages	CSC 372	3	CS Major; CSC 210
Systems Programming and Unix	CSC 352	3	CS Major; CSC 252, 335, 345, 352, and
Cloud Computing	CSC 346	3	CSC 120
Web Programming	CSC 337	3	ECE 175 or ISTA 130 or CSC 110

*SFWE Major allows for double dipping, but requires at least 1 unique technical elective to the major.

**Semester offerings are subject to change regularly.

Enrollment Restrictions	Main Offering	AMP?	AI	Algorithms
Adv. Standing	F	Yes		
Adv. Standing	SP	Yes		
Adv. Standing	F	Yes		
Adv. Standing	F	Yes		
Adv. Standing	F	Yes		
Adv. Standing	SP	Yes	X	
Adv. Standing	F/SP	Yes	X	X
Adv. Standing	F	Yes	X	
Adv. Standing	F/SP	Yes		
Adv. Standing	SP	No		
Adv. Standing	Coming soon	Yes		
Adv. Standing	Coming soon	Yes		
Department Consent	F/SP/SU	Yes		
Adv. Standing	F	No		
N/A	F	No		
N/A	Coming soon	No		
N/A	F/SP	No	X	
N/A	F/SP/SU	No		
N/A	Coming soon	No		X
N/A	F/SP	No	X	
None	F/SP	No		
N/A	F/SP	No		
N/A	F/SP/SU	No		
N/A	F	No		
N/A	SP	No	X	
N/A	F/SP/SU	No		
N/A	F/SP/SU	No		
N/A	SP	No		
Adv. Standing	SP	Yes	X	
Adv. Standing	F	Yes		
Adv. Standing	F	Yes		
Adv. Standing	SP	Yes		
Adv. Standing	SP	Yes		
Adv. Standing	SP	Yes		
Adv. Standing	F/SP	Yes		X
Adv. Standing	F	Yes		
Adv. Standing	F/SP	No		
Adv. Standing	SP	No		X
Adv. Standing	F/SP	No		
N/A	See Advisor	No		
N/A	See Advisor	No		
N/A	See Advisor	No		
N/A	F/SP	No		
CS Majors	SP	No	X	

CS Majors	F/SP	No		
CS Majors	F/SP	No		
CS Majors	SP	No		
CS Majors	F/SP	No		
CS Majors	F	No		
CS Majors	F/SP	No		
CS Majors	SP	No		
CS Majors	F/SP	No		
CS Majors	F	No		
N/A	F/SP	No		

See "Tech Elective Tracks" Tab

Cloud	Cyber	Data	Embedded	Mobile
		X		
	X			
	X			
			X	
			X	
		X		
		X		
			X	
X				
X				
			X	
		X		
		X		
		X		
		X		
		X		
	X			X
			X	
	X			
			X	
			X	
				X
			X	
	X			
	X			
	X			

			X	
X				
				X

ONLINE CAMPUS | *Pre-requisites do NOT count as electives*

Title (Choose 4)	Course	Units	Pre-Requisites
INSuRE	SIE 472	3	SIE 471
Cloud Native (temporarily SIE 496)	SFWE 410	3	SFWE 302
Principles of Cloud Computing	SFWE 409	3	ECE 369A or CSC 252
Software for Industrial Control Systems	SFWE 411	3	ECE 275
Directed Research	SFWE 492	3	None
Data Warehousing and Analytics in the Cloud	ISTA 431	3	None
Introduction to Web Design & Development	ISTA 329	3	None
Data Engineering	ISTA 322	3	ECE 175 or ISTA 130 or CSC 110
Data Mining and Discovery	ISTA 321	3	ISTA 116, ESOC 214, or equivalent
Applied Data Visualization	ISTA 320	3	ISTA 116, ESOC 214, or equivalent
Introduction to Game Development with Unity	GAME 351	3	ECE 175 or ISTA 130 or CSC 110
Disruptive Technologies	ESOC 318	3	None
Digital Signal Processing	ECE 429	3	Majors; ECE 340A
Microprocessor Organization	ECE 372A	4	ECE 274A & (ECE 207 or 220) & *E
Applications of Engineering Math	ECE 310*	4	MATH 254 & (ECE 207 or 220) & E
Cyber Warfare	CYBV 480	3	CYBV 326 and CYBV 385 or conser
Advanced Analytics for Security Operations	CYBV 474	3	None
Violent Python	CYBV 473	3	None
Malware Threats & Analysis	CYBV 454	3	None
Cyber Threat Intelligence	CYBV 435	3	None
Active Cyber Defense	CYBV 400	3	None
Introduction to Cyber Operations	CYBV 385	3	None
Introduction to Securtiy Scripting	CYBV 312	3	None
Windows Security Essentials	CYBV 303	3	None
Linux Security Essentials	CYBV 302	3	None
Artificial Intelligence	CSC(V) 471	3	CSC 355 or 345
Comparitive Programming Languages	CSC(V) 372	3	CS Major; CSC 210
Database Design	CSC 460	3	CS Major; CSC 335 & CSC 345
Prin Operating Systems	CSC 452	3	CS Major; CSC 252, CSC 345 & CSC

*SFWE Major allows for double dipping, but requires at least 1 unique technical elective to the major.

**Semester offerings are subject to change regularly.

			See "Tech"		
rollment Restriction	Online Offering	AMP?	AI	Algorithms	Cloud
Adv. Standing	SP	Yes			
Adv. Standing	Coming soon	Yes			X
Adv. Standing	Coming soon	Yes			X
Adv. Standing	F	No			
Department Consent	F/SP/SU	Yes			
N/A	F	No			
None	F/SP	No			
N/A	F/SP	No			
N/A	F/SP/SU	No			
N/A	F/SP	No			
N/A	F/SP/SU	No			
N/A	F/SP/SU	No			
Adv. Standing	F	Yes		X	
Adv. Standing	SP	No			
Adv. Standing	F	No			
N/A	F/SP	No			
N/A	F/SP	No			
N/A	F/SP	No			
N/A	F/SP	No			
N/A	F/SP/SU	No			
N/A	F/SP	No			
N/A	F/SP/SU	No			
N/A	F/SP/SU	No			
N/A	F	No			
N/A	F	No			
N/A	F	No	X		
N/A	F	No			
CS Majors	SP/SU	No			
CS Majors	SP	No			

ch Elective Tracks" Tab			
Cyber	Data	Embedded	Mobile
X			
		X	
	X		
	X		
	X		
	X		
		X	
		X	
X			
X			
X			
X			
X			
X			
X			
X			
X			
X			
		X	

YUMA CAMPUS | *Pre-requisites do NOT count as electives*

Title (Choose 4)	Course	Units	Pre-Requisites
INSuRE	SIE 472	3	SIE 471
Systems Cyber Security Engineering	SIE 471	3	None
Model Based Systems Engineering	SIE 458	3	SIE 454A
The Systems Engineering Process	SIE 454A	3	None
Fund of Data Science for Engineers	SIE 433	3	SIE 305 or equivalent
Simulation Modeling & Analysis	SIE 431	3	SIE 305
Engineering Stats	SIE 430	3	SIE 305
Technical Sales & Marketing	SIE 415	3	None
Cloud Native (temporarily SIE 496)	SFWE 410	3	SFWE 302
Principles of Cloud Computing	SFWE 409	3	ECE 369A or CSC 252
Software for Industrial Control Systems	SFWE 411	3	ECE 275
Directed Research	SFWE 492	3	None
Disruptive Technologies	ESOC 318	3	None
Cyber Warfare	CYBV 480	3	CYBV 326 and CYBV 385 or conse
Advanced Analytics for Security Operations	CYBV 474	3	None
Violent Python	CYBV 473	3	None
Malware Threats & Analysis	CYBV 454	3	None
Cyber Threat Intelligence	CYBV 435	3	None
Active Cyber Defense	CYBV 400	3	None
Introduction to Cyber Operations	CYBV 385	3	None
Introduction to Securtiy Scripting	CYBV 312	3	None
Windows Security Essentials	CYBV 303	3	None
Linux Security Essentials	CYBV 302	3	None
Artificial Intelligence	CSC(V) 471	3	CSC 355 or 345
Comparitive Programming Languages	CSC(V) 372	3	CS Major; CSC 210
Database Design	CSC 460	3	CS Major; CSC 335 & CSC 345
Prin Operating Systems	CSC 452	3	CS Major; CSC 252, CSC 345 & CSC

*SFWE Major allows for double dipping, but requires at least 1 unique technical elective to the major.

**Semester offerings are subject to change regularly.

		See "Tech"		
Enrollment Restrictions	Yuma Offering	AI	Algorithms	Cloud
Adv. Standing	SP			
Adv. Standing	F			
Adv. Standing	SP			
Adv. Standing	F/SP			
Adv. Standing	SP	X		
Adv. Standing	F/SP/SU	X	X	
Adv. Standing	F	X		
Adv. Standing	F/SP			
Adv. Standing	Coming soon			X
Adv. Standing	Coming soon			X
Adv. Standing	F			
Department Consent	F/SP/SU			
N/A	SP			
N/A	F/SP			
N/A	F/SP			
N/A	F/SP			
N/A	F/SP			
N/A	F/SP/SU			
N/A	F/SP			
N/A	F/SP/SU			
N/A	F/SP/SU			
N/A	F			
N/A	F			
N/A	F	X		
N/A	F			
CS Majors	SP			
CS Majors	SP			

ch Elective Tracks" Tab

Cyber	Data	Embedded	Mobile
X			
X			
		X	
		X	
	X		
	X		
		X	
X			
X			
X			
X			
X			
X			
X			
X			
X			
X			
		X	

MASTER LIST (All Campuses)

Title (Choose 4)	Course	Units	Pre-Requis
Introduction to Biomedical Informatics	SIE 477	3	ECE 175
Designing Cyber Resilient Systems	SIE 473	3	SIE 471
INSuRE	SIE 472	3	SIE 471
Systems Cyber Security Engineering	SIE 471	3	None
Model Based Systems Engineering	SIE 458	3	SIE 454A
The Systems Engineering Process	SIE 454A	3	None
Fund of Data Science for Engineers	SIE 433	3	SIE 305 or e
Simulation Modeling & Analysis	SIE 431	3	SIE 305
Engineering Stats	SIE 430	3	SIE 305
Technical Sales & Marketing	SIE 415	3	None
Embedded Computer Systems	SIE 370	4	None
Directed Research	SFWE 492	3	None
Cloud Native (temporarily SIE 496)	SFWE 410	3	SFWE 302
Principles of Cloud Computing	SFWE 409	3	ECE 369A d
Software for Industrial Control Systems	SFWE 411	3	ECE 275
Computational Linguistics	LING 438		None
Advanced Game Development	ISTA 452	3	
Artificial Intelligence	ISTA 450	3	MATH 243
Data Warehousing and Analytics in the Cloud	ISTA 431	3	None
Algorithms for Games	ISTA 425	3	
Intro to Machine Learning	ISTA 421	3	(ESOC 214
Introduction to Web Design & Development	ISTA 329	3	None
Data Engineering	ISTA 322	3	ECE 175 or
Data Mining and Discovery	ISTA 321	3	ISTA 116, E
Game Artificial Intelligence	GAME 426	3	ISTA 350 or
Introduction to Game Development with Unity	GAME 351	3	ECE 175 or
Disruptive Technologies	ESOC 318	3	None
Tech Ventures	ENTR 400 (3	3	Recommen
Artificial Intelligence	ECE 479	3	ECE 373 or
Fund of Computer Networks	ECE 478	3	ECE 275 &
Computer Aided Logic	ECE 474A	3	ECE 274A &
Fund Info Theory & Ntwk Security	ECE 471	3	None
Knowledge System Engineering	ECE 466	3	None
Computer Architecture & Design	ECE 462	3	ECE 369A
Digital Signal Processing	ECE 429	3	Majors; EC
Web Development & the IoT	ECE 413	3	ECE 275
Microprocessor Organization	ECE 372A	4	ECE 274A &
Computational Techniques	ECE 330B	3	Majors; MA
Applications of Engineering Math	ECE 310*	4	MATH 254
Cyber Warfare	CYBV 480	3	CYBV 326 a
Advanced Analytics for Security Operations	CYBV 474	3	None
Violent Python	CYBV 473	3	None
Malware Threats & Analysis	CYBV 454	3	None
Cyber Threat Intelligence	CYBV 435	3	None

Active Cyber Defense	CYBV 400	3	None
Introduction to Cyber Operations	CYBV 385	3	None
Introduction to Security Scripting	CYBV 312	3	None
Windows Security Essentials	CYBV 303	3	None
Linux Security Essentials	CYBV 302	3	None
Artificial Intelligence	CSC(V) 471	3	CSC 355 or
Comparative Programming Languages	CSC(V) 372	3	CS Major; C
Intro to Computer Vision	CSC 477	3	CS Major; C
Database Design	CSC 460	3	CS Major; C
Compilers and Systems Software	CSC 453	3	CS Major; C
Principles of Operating Systems	CSC 452	3	CS Major; C
Data Visualization	CSC 444	3	CS Major; C
Software Engineering	CSC 436	3	CS Major; C
Computer Graphics	CSC 433	3	CS Major; C
Comparative Programming Languages	CSC 372	3	CS Major; C
Systems Programming and Unix	CSC 352	3	CS Major; C
Cloud Computing	CSC 346	3	CSC 120
Web Programming	CSC 337	3	ECE 175 or

*SFWE Major allows for double dipping, but requires at least 1 unique technical elective

**Semester offerings are subject to change regularly.

Enrollment Restrictions	Main Offering	Online Offering	Yuma Offering	AMP?
Adv. Standing	F	Not Offered	Not Offered	Yes
Adv. Standing	On hold	Not Offered	Not Offered	Yes
Adv. Standing	SP	SP	SP	Yes
Adv. Standing	F	Not Offered	F	Yes
Adv. Standing	F	Not Offered	SP	Yes
Adv. Standing	F	Not Offered	F/SP	Yes
Adv. Standing	SP	Not Offered	F	Yes
Adv. Standing	F/SP	Not Offered	F/SP/SU	Yes
Adv. Standing	F	Not Offered	F	Yes
Adv. Standing	F/SP	Not Offered	F/SP	Yes
Adv. Standing	SP	Not Offered	Not Offered	No
Department Consent	F/SP/SU	F/SP/SU	F/SP/SU	Yes
Adv. Standing	Coming soon	Coming soon	Coming soon	Yes
Adv. Standing	Coming soon	Coming soon	Coming soon	Yes
Adv. Standing	F	F	F	No
N/A	F	Not Offered	Not Offered	No
N/A	Coming soon	Not Offered	Not Offered	No
N/A	F/SP	Not Offered	Not Offered	No
N/A	F/SP/SU	F	Not Offered	No
N/A	Coming soon	Not Offered	Not Offered	No
N/A	F/SP	Not Offered	Not Offered	No
None	F/SP	F/SP	Not Offered	No
N/A	F/SP	F/SP	Not Offered	No
N/A	F/SP/SU	F/SP/SU	Not Offered	No
N/A	SP	Not Offered	Not Offered	No
N/A	F/SP/SU	F/SP/SU	Not Offered	No
N/A	F/SP/SU	F/SP/SU	SP	No
N/A	SP	Not Offered	Not Offered	No
Adv. Standing	SP	Not Offered	Not Offered	Yes
Adv. Standing	F	Not Offered	Not Offered	Yes
Adv. Standing	F	Not Offered	Not Offered	Yes
Adv. Standing	SP	Not Offered	Not Offered	Yes
Adv. Standing	SP	Not Offered	Not Offered	Yes
Adv. Standing	SP	Not Offered	Not Offered	Yes
Adv. Standing	F/SP	F	Not Offered	Yes
Adv. Standing	F	Not Offered	Not Offered	Yes
Adv. Standing	F/SP	SP	Not Offered	No
Adv. Standing	SP	Not Offered	Not Offered	No
Adv. Standing	F/SP	F	Not Offered	No
N/A	Not Offered	F/SP	F/SP	No
N/A	Not Offered	F/SP	F/SP	No
N/A	Not Offered	F/SP	F/SP	No
N/A	Not Offered	F/SP	F/SP	No
N/A	See Advisor	F/SP/SU	F/SP/SU	No

N/A	See Advisor	F/SP	F/SP	No
N/A	See Advisor	F/SP/SU	F/SP/SU	No
N/A	Not Offered	F/SP/SU	F/SP/SU	No
N/A	Not Offered	F	F	No
N/A	Not Offered	F	F	No
N/A	Not Offered	F	F	No
N/A	F/SP	F	F	No
CS Majors	SP	Not Offered	Not Offered	No
CS Majors	F/SP	SP/SU	SP	No
CS Majors	F/SP	Not Offered	Not Offered	No
CS Majors	SP	SP	SP	No
CS Majors	F/SP	Not Offered	Not Offered	No
CS Majors	F	Not Offered	Not Offered	No
CS Majors	F/SP	Not Offered	Not Offered	No
CS Majors	SP	Not Offered	Not Offered	No
CS Majors	F/SP	Not Offered	Not Offered	No
CS Majors	F	Not Offered	Not Offered	No
N/A	F/SP	Not Offered	Not Offered	No

æ to the major.

			X			
			X			
			X			
			X			
			X			
X						
X						
					X	
		X				
						X

Technical Elective Tracks (Optional: to be used as a guide)

Note: You cannot take classes from a campus you are not admitted to. Consult your advisor for more details of these courses on your specific campus track.

AI/Machine Learning	Course	Units
Fund of Data Science for Engineers	SIE 433	3
Simulation Modeling & Analysis	SIE 431	3
Engineering Stats	SIE 430	3
Game Artificial Intelligence	GAME 426	3
Artificial Intelligence	ECE 479	3
Artificial Intelligence	CSC(V) 471	3
Intro to Computer Vision	CSC 477	3

Algorithms	Course	
Simulation Modeling & Analysis	SIE 431	3
Digital Signal Processing	ECE 429	3
Computational Techniques	ECE 330B	3

Cloud Computing	Course	
Cloud Native (temporarily SIE 496)	SFWE 410	3
Principles of Cloud Computing	SFWE 409	3

Cybersecurity	Course	
INSuRE	SIE 472	3
Systems Cyber Security Engineering	SIE 471	3
Fund of Computer Networks	ECE 478	3
Fund Info Theory & Ntwk Security	ECE 471	3
Cyber Warfare	CYBV 480	3
Advanced Analytics for Security Operations	CYBV 474	3
Violent Python	CYBV 473	3
Malware Threats & Analysis	CYBV 454	3
Cyber Threat Intelligence	CYBV 435	3
Active Cyber Defense	CYBV 400	3
Introduction to Cyber Operations	CYBV 385	3
Introduction to Security Scripting	CYBV 312	3
Windows Security Essentials	CYBV 303	3
Linux Security Essentials	CYBV 302	3

Data	Course	Units
Fund of Data Science for Engineers	SIE 433	3
Artificial Intelligence	ECE 479	3
Introduction to Biomedical Informatics	SIE 477	3
Technical Sales & Marketing	SIE 415	3
Data Warehousing and Analytics in the Cloud	ISTA 431	3
Data Engineering	ISTA 322	3
Data Mining and Discovery	ISTA 321	3
Applied Data Visualization	ISTA 320	3

Embedded Systems	Course	Units
Digital Signal Processing	ECE 429	3
Model Based Systems Engineering	SIE 458	3
The Systems Engineering Process	SIE 454A	3
Embedded Computer Systems	SIE 370	4
Software for Industrial Control Systems	SFWE 411	3
Computer Aided Logic	ECE 474A	3
Computer Architecture & Design	ECE 462	3
Microprocessor Organization	ECE 372A	4
Prin Operating Systems	CSC 452	3

Mobile	Course	Units
Fund of Computer Networks	ECE 478	3
Web Development & the IoT	ECE 413	3
Web Programming	CSC 337	3

Coming Soon: Cloud Computing!

Guide for selecting courses)
<i>campus offering is different from modality. See tab at the bottom of Excel.</i>
Campus Offered
Main, Yuma
Main
Main, Online
Main, Yuma
Main
Online, Yuma
Main

Campus Offered
Main; Yuma
Main; Online
Main

Campus Offered
Main, Online, Yuma
Main, Online, Yuma

Campus Offered
Main
Main, Online, Yuma
Main, Yuma
Main
Online, Yuma
Online, Yuma
Online, Yuma
Online, Yuma
Main, Online, Yuma
Main, Online, Yuma
Main, Online, Yuma
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Campus Offered
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Campus Offered
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Main, Online, Yuma
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Main, Online
Main, Online, Yuma

Campus Offered
Main
Main
Main