Discovering YOUR MAJOR

COMPUTER SECURITY



RIT Email address

Check your RIT Email frequently

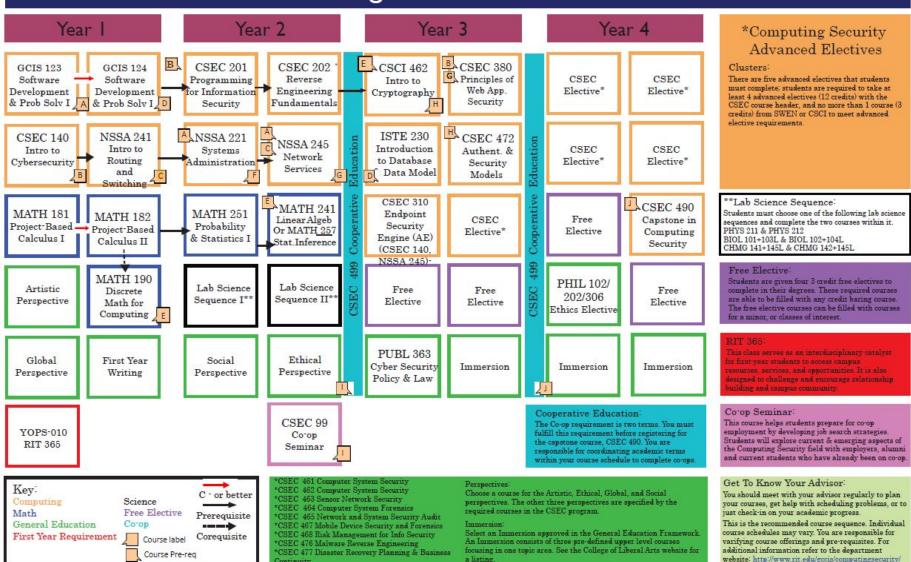
or

Connect it to your mobile phones

Why?

- 1. Used for all communication
- 2. Important announcements
- 3. Easier to identify and assist you (also, try to add your UID as an email signature too).

Department of Computing Security Undergraduate Curriculum



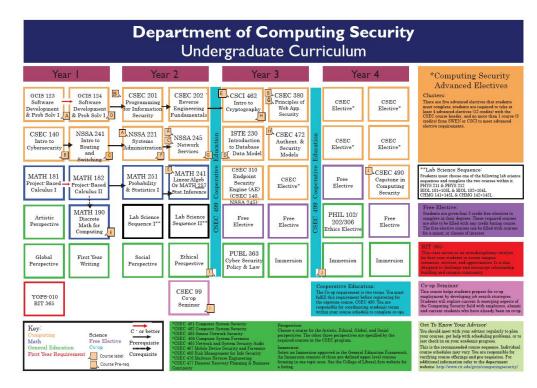
How to Read Your Flowchart

Prerequisite = A requirement that must be met/completed first *before* you can take a course

- Types of Prerequisites
 - Course (eg. The *prerequisite* for Beginning French II is Beginning French I (you just need to pass with a D))
 - Year-Level (eg. The *prerequisite* for Organizational Behavior is 2nd Year Standing)
 - **A Grade in a course** (eg. The *prerequisite* for Calculus II is a C- in Calculus I)

Corequisite = A course that must either be taken *at the same time as or* completed before another course **choose from**

- Eg.: The corequisite for Physics I is Calculus II
 - Corequisites only work in one direction, so you could take Calculus II by itself



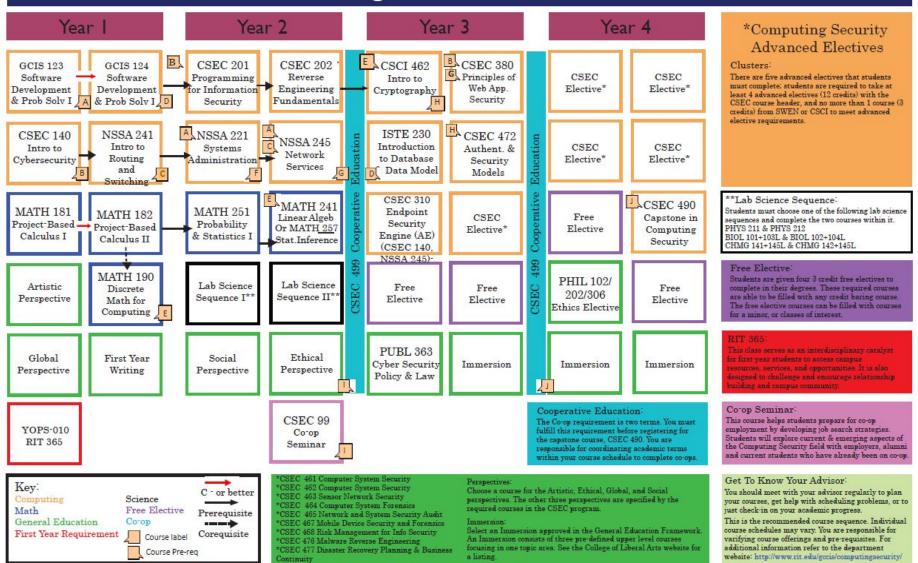
How to Read Your Flowchart

Requirements for a course are designated in 2 ways:

Requirement Type	Pre-req Course To Take	Pre-req A Label Pre-req required
Prerequisite	→	A
Corequisite		A
Prerequisite and must pass with a C-*		A

^{*}The full list of courses that require C- or C is on the Academic Services website!

Department of Computing Security Undergraduate Curriculum



Terminology of Course Types

- **"Core Courses"** = required courses
- **"Electives"** = requirements that can be fulfilled by a selection of courses that you can choose from
 - ☐ It is still a requirement you need to fulfill you must choose *something*
 - ☐ Depending on the type of elective, you will have a different set of options (e.g. Math elective, Major elective, Science Elective, Free elective etc.)

-3 main categories of classes-

General

Education (GE)

Math & Science

Liberal Arts

Foundations

Perspectives

Immersion



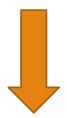
Major Courses

Core Courses

Major Electives

Free Electives

(Almost) anything!



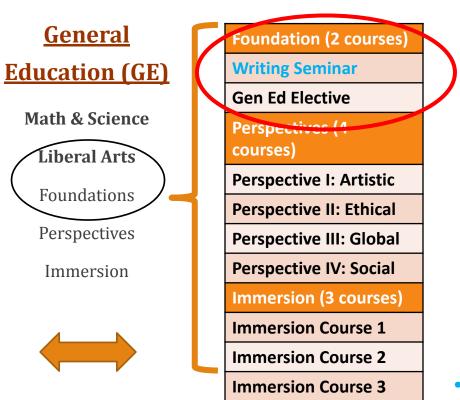


General Education – MATH & SCIENCE

CSEC

- MATH 181 Calculus I
- MATH 182 Calculus II
- MATH 190 Discrete Math for Computing
- MATH 251 Probability & Statistics I
- MATH 241 Linear Algebra OR STAT 257 Statistical Inference
- Choose 1 Lab Science Sequence (4 cr. Per course):
- o PHYS 211 / PHYS 212
- o CHMG 141+145 / 142+146
- o BIOL 101+103 / 102+104

- Required
- Can choose



Writing Seminar (1 course)

- Required course for ALL RIT Dubai students
- Recommended to take this within first year

Gen Ed Elective (1 course)

- Can be any liberal arts, math, or science course as well as a few others.
- Islamic culture course may need to go here if it doesn't fulfil any perspective or your immersion
- Required
- Can choose

General Education - LIBERAL ARTS

Additional Requirements

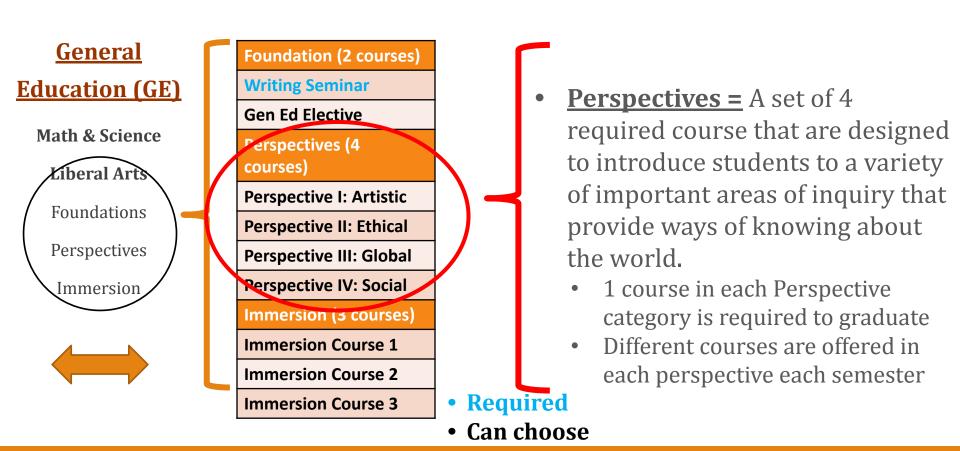
□ 1 <u>Islamic</u> Culture course (required if you graduate from RIT Dubai only)

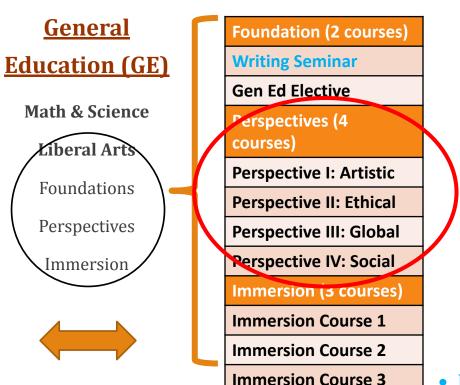
Choose from:

- ANTH 275 **Global Islam:** (Global Pers/Immersion: Religious Studies / Cultural Anth)
- ANTH 365 Culture and Politics in ME: (Immersion: Arabic / Religious Studies / Cultural Anth)
- HIST 402 **Islamic History:** (Immersion: History)
- **1 extra Writing Intensive ("WI") course** (designated in the course description □ can be a perspective, immersion, or free elective)

Choices include:

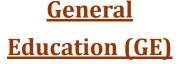
- COMM 253 Communication
- ENGL 210 Literary and Cultural Studies
- ENGL 211 Intro to Creative writing
- ENGL 215 Text and Code
- ENGL 302 The Short Story
- ENGL 305 Auto/biographical Literature
- ENGL 360 Written Argument





Perspectives (4 courses)

- These course categories are designed to introduce students to a variety of important areas of inquiry that provide ways of knowing about the world.
 - Global
 - Social
 - Artistic
 - Ethical
- 1 course in each category is required to graduate
- Different courses are offered in each perspective each semester
- Some courses fulfil more than one perspective, but you can only use it once
- Required
- Can choose



Math & Science

Liberal Arts

Foundations

Perspectives

Immersion



Writing Seminar

Gen Ed Elective

Perspectives (4 courses)

Perspective I: Artistic

Perspective II: Ethical

Perspective III: Global

Perspective IV: Social

Immersion (3 courses)

Immersion Course 1

Immersion Course 2

Immersion Course 3

• <u>Immersion =</u> a series of three related general education courses supporting deeper learning within a focus area

- Required
- Can choose



General
Education (GE)
Math & Science

Liberal Arts

Foundations

Perspectives

Immersion



Foundation (2 courses)

Writing Seminar

Gen Ed Elective

Perspectives (4 courses)

Perspective I: Artistic

Perspective II: Ethical

Perspective III: Global

Perspective IV: Social

Immersion (3 courses)

Immersion Course 1

Immersion Course 2

Immersion Course 3

- The current approved list of immersions for RIT Dubai is:
 - Creative Writing
 - Cultural Anthropology
 - Digital Literature & Comparative Media
 - Economics
 - English
 - History
 - Arabic
 - French
 - Psychology
 - Religious Studies
- Click <u>here</u> to see the list of courses that can fulfill each immersion
- Required
- Can choose

General Education – LIBERAL ARTS (Immersions)

Immersions Special Notes:

- Psychology Immersion: Intro Psych does not count in the immersion,
 - but is a prerequisite and counts as a Social Perspective
- **Economics Immersion:** Microeconomics does *not* count in the immersion,
 - but is a prerequisite and counts as a Social or Global Perspective

General Education – LIBERAL ARTS

- ☐ Some Liberal Arts courses fulfill more than one category, but they cannot double count! You must eventually choose which requirement it will fulfill.
- ☐ You *can* take a minor and an immersion in the same subject (e.g. Psychology). A minor will then only require 2 additional courses.

Links to Immersions and Minors

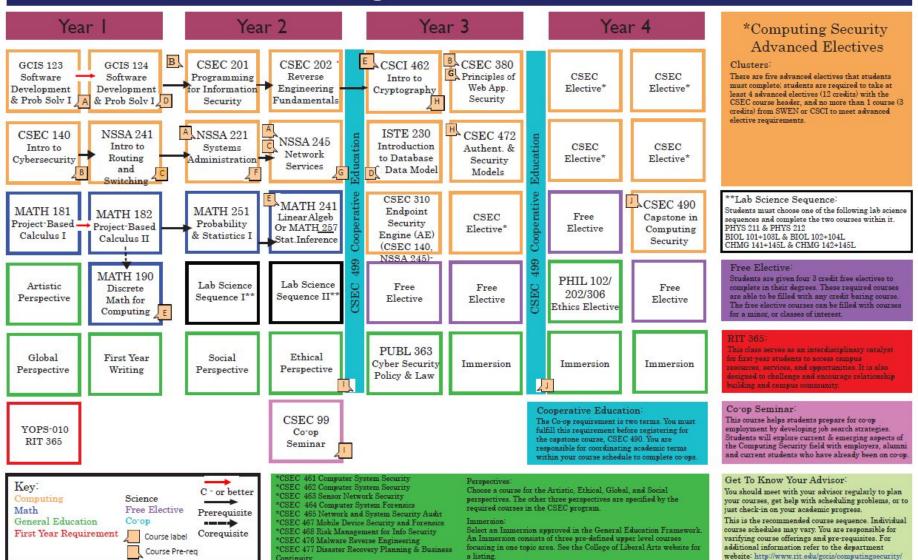
Immersions = Mandatory

https://www.rit.edu/dubai/programs/immersions

Minors = OPTIONAL

https://www.rit.edu/dubai/programs/minors

Department of Computing Security Undergraduate Curriculum



-3 main categories of classes-

General Education (GE)

Math & Science

Liberal Arts

Foundations

Perspectives

Immersion

Major Courses

Core Courses

Major Electives



Free Electives

(Almost) anything!

CSEC Major Electives

Choose a cluster:

Take 4 required courses from CSEC cluster

+

any other 1 advanced courses from either SWEN or CSCI

CSEC Major Electives

RIT Dubai is offering advanced courses from **System and Network Security and Forensics**. Examples of the advanced courses include:

- ☐ CSCI-532 Introduction to Intelligent Security Systems
- ☐ CSEC-461 Computer System Security
- ☐ CSEC-462 Network Security and Forensics
- ☐ CSEC-465 Network & System Security Audit
- ☐ CSEC-468 Risk Management for Information Security
- ☐ CSEC-471 Penetration Testing Frameworks and Methodologies

Network and System Security:

*CSEC 461 Computer System Security

*CSEC 462 Network Security and Forensics

CSEC 465 Network & System Security Audit

CSEC 469 Wireless Security

CSEC 471 Penetration Testing Frameworks & Methodologies

CSEC 473 Cyber Defense Techniques

Forensics & Malware:

*CSEC 464 Computer Systems Forensics

*CSEC 466 Introduction to Malware

CSEC 476 Malware Reverse Engineering

CSEC 462 Network Security and Forensics

CSEC 465 Network & System Security Audit

CSEC 467 Mobile Device Security and Forensics

CSEC 470 Covert Communications

Software Security:

*SWEN 261 Introduction to Software Engineering

*SWEN 331 Engineering Secure Software

CSEC 467 Mobile Device Security and Forensics

CSEC 468 Risk Management for Information Security

CSEC 731 Web Server and Application Security Audits (Graduate

CSCI 622 Data Security and Privacy (Graduate course)

CSCI 642 Secure Coding (Graduate course)

SWEN 567 Hardware Software Co-Design for Cryptographic Applie

Security Management and Evaluation:

*CSEC 468 Risk Management for Information Security

*CSEC 477 Disaster Recovery Planning and Business Continuity

CSEC 465 Network & System Security Audit

CSEC 471 Penetration Testing Frameworks & Methodologies

CSCI 531 Introduction to Security Measurement

CSCI 532 Introduction to Intelligent Security Systems

Electives:

CSCI 455 Principles of Computer Security

CSCI 464 Xtreme Theory

CSCI 531 Introduction to Security Measurement

CSCI 532 Introduction to Intelligent Security Systems

CSCI 622 Data Security and Privacy (Graduate course)

CSCI 642 Secure Coding (Graduate course)

CSCI 762 Advanced Cryptography (Graduate course)

CSEC 461 Computer System Security

CSEC 462 Network Security and Forensics

CSEC 464 Computer Systems Forensics

CSEC 465 Network & System Security Audit

CSEC 466 Introduction to Malware

CSEC 467 Mobile Device Security and Forensics

CSEC 468 Risk Management for Information Security

CSEC 469 Wireless Security

CSEC 471 Penetration Testing Frameworks & Methodologies

CSEC 473 Cyber Defense Techniques

CSEC 470 Covert Communications

CSEC 476 Malware Reverse Engineering

CSEC 477 Disaster Recovery Planning and Business Continuity

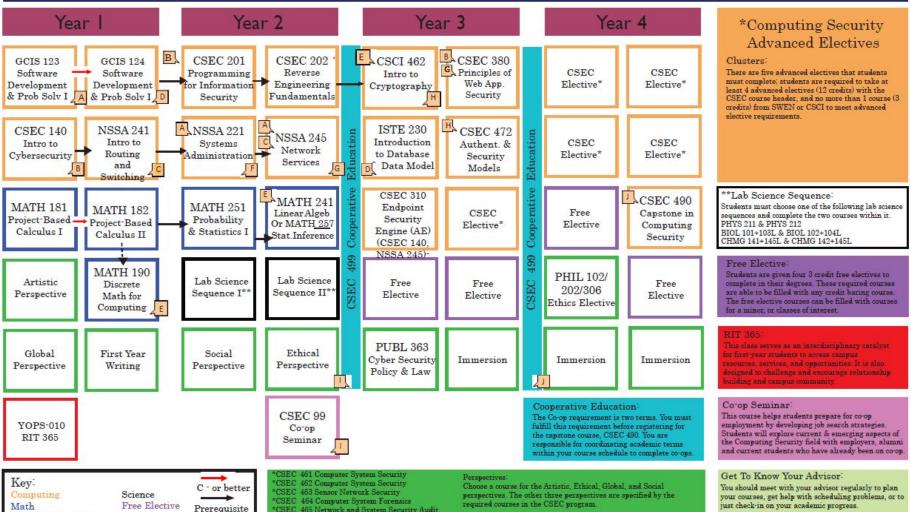
CSEC 731 Web Server and Application Security Audits (Graduate course)

SWEN 261 Introduction to Software Engineering

SWEN 331 Engineering Secure Software

SWEN 567 Hardware Software Co-Design for Cryptographic Applications

Department of Computing Security Undergraduate Curriculum



General Education

First Year Requirement

Corop

Course label

Course Pre-rea

--->

Corequisite

*CSEC 465 Network and System Security Audit

*CSEC 467 Mobile Device Security and Forensics *CSEC 468 Risk Management for Info Security

*CSEC 476 Malware Reverse Engineering *CSEC 477 Disaster Recovery Planning & Business required courses in the CSEC program.

Select an Immersion approved in the General Education Framework. An Immersion consists of three pre-defined upper level courses focusing in one topic area. See the College of Liberal Arts website for

just check-in on your academic progress.

This is the recommended course sequence. Individual course schedules may vary. You are responsible for varifying course offerings and pre-requisites. For additional information refer to the department website: http://www.rit.edu/gccis/computingsecurity/

-3 main categories of classes-

General Education (GE)

Liberal Arts

Math & Science

Major Courses

Core Courses

Major Electives

Free Electives

(Almost) anything!



Free Electives

Make the most of them!

- An extra course from your major
- An additional general education class
- A course from a different program
- A course towards a minor

Cannot take an **easier** course (e.g. Pre-calc if you've already taken Calc I), a course with unfulfilled **pre-reqs**, or a course that's too similar to another (e.g. Applied Statistics & probability & Stats)

Co-op

- "Co-op" = Cooperative Education
 - Opportunity to gain meaningful work experience before graduation
 - Full-time, paid employment directly related to your field of study
 - Usually begun in your 2nd year summer

Co-op

2 summers = 24 weeks

- An individual co-op must be a minimum of 10 weeks
- 2 different coops are recommended
- Must be in Good Standing (at least 2.0 cGPA)
- Must first complete <u>Co-op Prep</u> (CSEC99)
- Not permitted to graduate on a co-op

Co-op Pre-requisites

CSEC

- CSEC 99 Coop Prep
- Second year CSEC courses (preferred)
 CSEC 202 Concepts of Comp Systems
 NSSA 221 Systems Admin I
 MATH 182 Calculus II

Confused?

Don't worry. You will make an individualized, personal Graduation Plan with your advisor (during your mandatory advising session) that will include all of these requirements so you can keep track.

This will be emailed to you after your mandatory advising session, so keep it and refer to it often!

	•					•						
Name:							Entry Term:	UID:				
Y e sr 1												
Course#	Course Name	Term	Grade	Credits	Cr. Earned	Cour se #	Course Name	Term	Grade	Credits	Cr. Earn ed	
GCIS 123	Software Development I	2221		4	0.00	GCIS 124	Software Development II	2225		4	0.00	Yesi
CSEC 140	Intro to Cybersecurity	2221		3	0.00	MATH 182	Project-Based Calcli (P-78)	2225		4	0.00	
MATH 181	Project-Based Calcl (P-7A)	2221		4	0.00	PSYC 101	LA Perspective 1 - Social	2225		3	0.00	
ANTH 365	Free Elective I (WI)	2221		3	0.00	NSSA 241	Introto Routing and Switching	2225		3	0.00	Year
RIT365	Freshman seminar	2221		0	0.00	UWRT150	First Year Wirting	2225		3	0.00	
						Year 2						Year
Course#	Course Name	Term	Grade	Credits	Cr. Earned	Course#	Course Name	Term	Grade	Credits	Cr. Earn ed	
CSEC 201	Programming for Info Security	2231		3	0.00	CSEC 202	Reverse Engineering Fundamentals	2235		3	0.00	
NSSA 221	Systems Administration I	2231		3	0.00	MATH 241/ 252	Linear Alg/ Prob & Stat II	2235		3	0.00	Year
STAT 145	Free Elective 2	2231		3	0.00	NSSA 245	Network Services	2235		3	0.00	
PHYS 211	Lab Science I *	2231		4	0.00		Lab Science II *	2235		4	0.00	
MATH 190	Discrete Math for Computing	2231		З	0.00		LA Perspective 2 - Ethical	2235		3	0.00	
						CSEC 99	Co-op Seminar	2235		0	0	
						Year 3						
Course#	Course# Course Name Term Grade Credits Cr. Earned Course# Course Name Term Grade Credits Cr. Ear								Cr. Eaml e d			
CSCI 462	Introto Cryptography	2241		3	0.00	CSEC 380	Principles of Web App Security	2245		3	0.00	
ISTE 230	Introto DB & Data Modeling	2241		3	0.00	CSEC 47.2	Auth & Security Models	2245		3	0.00	
	Advanced Option 1	2241		3	0.00		Advanced Option 2	2245		3	0.00	
	LA Perspective 3 - Global	2241		3	0.00	MATH 251	Probability and Statistics	2245		3	0.00	
PUBL 363	Cyber Security Policy & Law	2241		3	0.00		LA Immersion 1	2245		3	0.00	
	LA Perspective 4- Artistic (Writing	2241		3	0.00	- 6						
Year4												
Course#	Course Name	Term	Grade	Credits	Cr. Earned	Course#	Course Name	Term	Grade	Credits	Cr. Eamled	
	Advanced Option 3	2251		3	0.00		Advanced Option 5	2255		3	0.00	
	Advanced Option 4	2251		3	0.00		Advanced Option 6	2255		3	0.00	
PHL102/202/30	Ethics Elective (GenEd-E4)	2251		3	0.00	CSEC 490	Capstone in Computing Security 2255		3	0.00		
TXFR 100	Free Elective 3	2251		3	0.00	TXFR 100	Free Elective 4	2255		3	0.00	
	LA Immersion 2	2251		3	0.00		LA Immersion 3	2255		3	0.00	

		Entry Term:	UID:							# of	# of
Y ear 1								courses	credits		
	Соцг яе #	Cour se Name	Term	Grade	Credits	Cr. Eam e d		Code:		per/term	per/term
	GCIS 124	Software Development II	2225		4	0.00	Year1	2221	2022 Fa	5	14
	MATH 182	Project-Based Calcil (P-78)	2225		4	0.00		2225	2023 Sp	5	17
	PSYC 101	LA Perspective 1 - Social	2225		3	0.00		2228	2023 Su	0	0
	NSSA 241	Intro to Routing and Switching	2225		3	0.00	Year 2	2231	2023 Fa	5	16
	UWRT150	First Year Wirting	2225		3	0.00		2235	2024 Sp	6	16
								2238	2024 Su	1	0
Yesr 2						Year3	2241	2024 Fa	6	18	
	Course#	Course Name	Term	Grade	Credits	Cr. Eam e d		2245	2025 Sp	5	15
	CSEC 202	Reverse Engineering Fundamentals	2235		3	0.00		2248	2025 Su	1	0
	MATH 241/ 252	Linear Alg/ Prob & Stat II	2235		3	0.00	Year4	2251	2025 Fa	5	15
	NSSA 245	Network Services	2235		3	0.00		2255	2026 Sp	5	15
		Lab Science II *	2235		4	0.00		2258	2026 Su	0	0
		LA Perspective 2 - Ethical	2235		3	0.00					
	CSEC 99	Co-op Seminar	2235		0	0					
Year 3											
	Course#	Course Name	Term	Grade	Credits	Cr. Eaml e d					
	CSEC 380	Principles of Wieb App Security	2245		3	0.00					
	CSEC 472	Auth & Security Models	2245		3	0.00					
		Advanced Option 2	2245		3	0.00					
	MATH 251	Probability and Statistical	2245		3	0.00					
	-	LA Immersion 1	2245		3	0.00					
٧e	/ear4										
	Course#	Course Name	Term	Grade	Credits	Cr. Eamled					
		Advanced Option 5	2255		3	0.00					
			aass		-	0.00					

Academic Advising Resources

https://www.rit.edu/dubai/ -> Campus Life -> Academic Advising

- 1. Introduction and Schedules
- 2. Forms
- 3. Advising Resources
- 4. Program Requirements
- 5. Transfer and Study Abroad

Now What?

Make your Advising Appointment!

- 1. Access Starfish through SIS or MyCourses
- 2. Click on the menu icon and go to your Profile to CHANGE YOUR TIME ZONE
 - o ✓ "Display all time zones" and find "(GMT+04:00) Dubai"
 - Click "Submit"
- 3. Go to "My Success Network"
- 4. Choose your Academic Advisor to schedule an appointment

Any Questions?