



# Computer Science and Engineering

Freshmen and Transfers





# Who To Contact When



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# Who to contact when

- Unless all other methods have been exhausted, students (and their families) should not directly contact the Dean's office to resolve issues. Respecting this boundary is very important.
- All messages are sent back to the departments.

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# Who to contact when

- If you have concerns or conflicts regarding your classes, please contact the instructor first.
- Teaching assistants are excellent resources, but they do not have primary responsibility for courses or issues within.
- The Department Head or Associate Department Head of the *respective department* should only be contacted when all other outlets have been exhausted.

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# Who to contact when

- If you would like to discuss decisions regarding your curriculum (degree planning, dropping classes or changing your schedule, etc.), you should first contact your department's advising team.
- All advisors within a department will give the same responses, so only one meeting will be sufficient.
- If you need greater resolution, please contact your Academic Advising Coordinator.



# Advising Expectations



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# Advising Expectations

- The purpose of your NSC is just to get the semester started, to get students acquainted with their degree and programs at a basic level.
- We will have group meetings starting a few weeks after classes begin.

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# Advising Expectations

- Attend a group meeting by mid-semester
- Be aware of the university's calendar and all relevant deadlines
- Be aware of the university, college, and department rules for scholastic probation
- Check their university email on a daily basis
- Adhere to the Aggie Honor Code
- Be aware of and adhere to the university's Student Rules
- Follow all course policies and meet prerequisites
- Make satisfactory degree progress every semester
- Come prepared to each advising appointment
- Be aware of and use available advising resources



# Degree Overview



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# Who are we?

We are the Department of Computer Science and Engineering (CSCE)

- We are one of many departments within the College of Engineering (like civil, mechanical, etc.)
- We have three majors/degrees
  - BS in Computer Science (BS-CPSC)
  - BS in Computer Engineering (BS-CPEN)
  - BA in Computer Science (BA-CPSC)

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# Degree plans

- BS-CPSC: 126 credits
- BS-CPEN-CS: 128 degrees
- BA-CPSC: 120 credits
  
- Note: student rule 14.5 allows a transfer student to remain on the catalog that corresponds to when the student first enrolled in the institution from which the student transferred.

# BS-CPSC degree (sample)

Texas A&M University -- College of Engineering -- Department of Computer Science and Engineering																																																																																																																																		
Degree Plan for the Bachelor of Science in Computer Science (BS-CPSC)																																																																																																																																		
Valid for the Fall 2023 Catalog #146 (126 Credit Hours)																																																																																																																																		
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- ❖ Courses in blue require a C or better for completion.
- ❖ Courses in green box can overlap with an ICD or a CD credit.
- ❖ Visit your advising Canvas page for
  - ❖ Science Options
  - ❖ Supporting/emphasis area
  - ❖ Technical electives

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# BS-CPSC Technical Electives

## Track 1: Algorithms and Theory

- **CSCE411: Analysis of Algorithms**
- CSCE433: Formal Languages and Automata
- CSCE440: Quantum Algorithms
- CSCE442: Scientific Programming

*Although it is called an elective, CSCE411 is a firm degree requirement and a prerequisite for CSCE482 (senior capstone).*

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# BS-CPSC Technical Electives

## Track 2: Systems

- CSCE410: Operating Systems
- CSCE412: Cloud Computing
- CSCE416: Hardware Design and Verification
- CSCE426: Security of Embedded Systems
- CSCE456: Real-time Computing
- CSCE461: Embedded Systems for Medical Applications
- CSCE462: Microcomputer Systems
- CSCE463: Networks and Distributed Systems
- CSCE464: Wireless and Mobile Systems
- CSCE465: Computer and Network Security
- CSCE469: Advanced Computer Architecture

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# BS-CPSC Technical Electives

## Track 3: Software

- CSCE429: Software Development, Globalization, and Culture Abroad
- CSCE430: Problem Solving Design
- CSCE431: Software Engineering
- CSCE434: Compiler Design
- CSCE435: Parallel Computing
- CSCE438: Distributed Object Programming
- CSCE451: Software Reverse Engineering

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# BS-CPSC Technical Electives

## Track 4: Information and Intelligence Systems

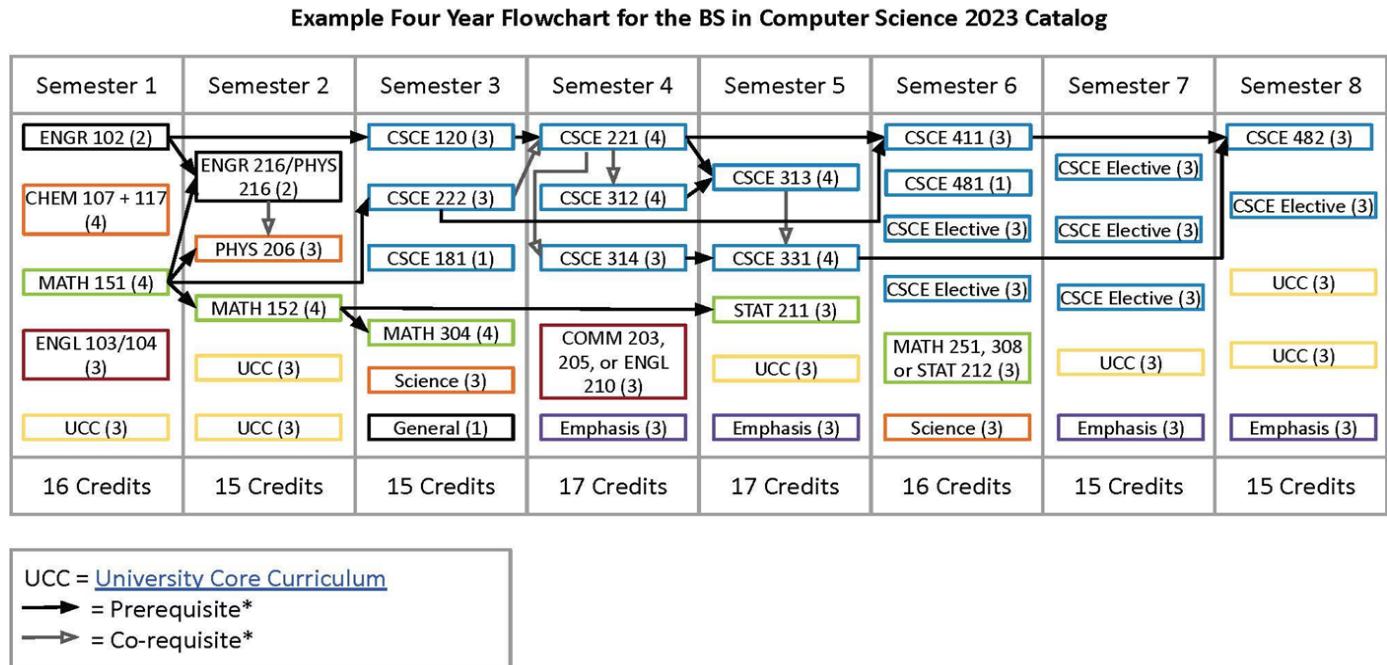
- CSCE305: Computational Data Science
- CSCE310: Database Systems
- CSCE320: Principles of Data Science
- CSCE420: Artificial Intelligence
- CSCE421: Machine Learning
- CSCE432: Accessible Computing
- CSCE436: Computer-Human Interaction
- CSCE439: Data Analytics for Cybersecurity
- CSCE441: Computer Graphics
- CSCE443: Game Development

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# BS-CPSC Technical Electives, continued

- CSCE444: Structures of Interactive Information
- CSCE445: Computers and New Media
- CSCE446: Virtual Reality
- CSCE447: Data Visualization
- CSCE448: Computational Photography
- CSCE449: Applied Cryptography
- CSCE450: Computer Animation
- CSCE452: Robotics and Spatial Intelligence
- CSCE470: Information Storage and Retrieval

# BS-CPSC 4-year flowchart



\* Always consult the [University Catalog](#) for current course prerequisites, co-requisites, and restrictions.

Note on CSCE Seminar Timing (CSCE 181/481):

- Students are encouraged to take CSCE 181 early in the plan to better understand the degree program and get exposure to different areas in computing for later selection of Prescribed electives.
- Students are encouraged to take CSCE 481 during their junior year to prepare for internship and job interviews as well understand different career options after the baccalaureate degree.

The most important thing to note with this degree plan flow is the order of course prerequisites. When planning your classes each semester, and for your whole degree, you need to make sure that all prerequisites are being met. Course prerequisites can be found in the course catalog, and in the details on Howdy.

# BS-CPEN degree (sample)

CSCE (18 + 6*)	ECEN (22 +9*)	MATH & STAT (20)	Science (10)	Core Curriculum (21)
120 <sup>1</sup> (3)	248 <sup>1</sup> (4)	151 <sup>1</sup> (4)	CHEM 107 <sup>1</sup> (3)	Lang, Phil & Cult: _____ (3)
222 <sup>1</sup> (3)	214 <sup>1</sup> (4)	152 <sup>1</sup> (4)	CHEM 117 <sup>1</sup> (1)	Creative Arts: _____ (3)
221 <sup>1</sup> (4)	314 <sup>1</sup> (3)	251 <sup>1</sup> (3)	PHYS 206 <sup>1</sup> (3)	Soc & Behav Sci: _____ (3)
313 <sup>1</sup> (3)	350 <sup>1</sup> (4)	308 <sup>1</sup> (3)	PHYS 207 <sup>1</sup> (3)	American History _____ (3)
331 <sup>1,2</sup> (4)	325 <sup>1</sup> (4)	311 <sup>1</sup> (3)		_____ (3)
481 <sup>1</sup> (1)	454 <sup>1</sup> (3)	STAT 211 <sup>1</sup> (3) or ECEN 303 <sup>1</sup> (3)		
462 <sup>1</sup> (3) or 483 <sup>1,2</sup> (3)	449 <sup>1</sup> (3) or 403 <sup>1,2</sup> (3) + 404 <sup>1</sup> (3)			Communication (6) Govt/Political Science POLS 206 (3) POLS 207 (3)
<b>High Impact Experience (0)</b>		102 <sup>1</sup> (2)	ENGL 103 <sup>1</sup> (3) or 104 <sup>1</sup> (3) ENGL 210 <sup>1</sup> (3) or COMM 205 <sup>1</sup> or COMM 243 <sup>1</sup> (3)	
399 (0) or Area Electives (12 or 15)		216 <sup>1</sup> (2)		
Area I: _____ (3)	_____ (3)	217 <sup>1</sup> (2)		ICD/CD <sup>+</sup>
Area I: _____ (3)	_____ (3)* (only if taking CSCE 483)			ICD _____ (3) CD _____ (3)
Total Hours: 128 (not including ICD/CD)				

\*Depends on which courses are selected from (CSCE 462 or ECEN 449) and (CSCE 483 or ECEN 403+404).

<sup>1</sup>ICD/CD courses can simultaneously be used to fulfill other core curriculum requirements.

<sup>1</sup> A grade of C or better is required.

<sup>2</sup> UCRT/UWRT courses; CSCE 331 and (CSCE 483 or ECEN 403) must be completed.

- Indicated courses require a C or better, along with technical electives
- Courses in green box can overlap with ICD/CD; please visit this link for full list of core classes: <https://core.tamu.edu/>
- Visit your advising canvas page for details on
  - Area electives
  - Engineering elective

# BS-CPEN Technical Electives

- Communications and networks
  - CSCE463: Networks and Distributed Processing
  - CSCE464: Wireless and Mobile Systems
  - CSCE465: Computer and Network Security
  - ECEN423: Computer and Wireless Networks
  - ECEN424: Fundamentals of Networking
  - ECEN434: Optimization for ECE Applications
  - ECEN455: Digital Communications
  - ECEN461: Electronic Noise
  - ECEN/CYBR466: Unconditionally Secure Electronics
  - ECEN478: Wireless Communications
  - MATH470: Communications and Cryptography

# BS-CPEN Technical Electives, continued

- Data Science, Artificial Intelligence, and Machine Learning
  - CSCE305/ECEN360/STAT315: Computational Data Science
  - CSCE310: Database Systems
  - CSCE320/STAT335: Principles of Data Science
  - CSCE420: Artificial Intelligence
  - CSCE421/ECEN427/STAT421: Machine Learning
  - CSCE436: Computer Human Interaction
  - CSCE439: Data Analytics for Cybersecurity
  - CSCE447/VIST476: Data Visualization
  - CSCE470: Information Storage and Retrieval
  - ECEN434: Optimization for ECEN
  - ECEN446: Information Theory, Inference, and Learning Algorithms
  - ECEN455: Digital Communications

# BS-CPEN Technical Electives, continued

- Signals and Systems, Graphics, and Robotics
  - CSCE441: Computer Graphics
  - CSCE443: Game Development
  - CSCE446/VIST477: Virtual Reality
  - CSCE448: Computational Photography
  - CSCE450: Computer Animation
  - CSCE452: Robotics and Spatial Intelligence
  - ECEN419: Genomic Signal Processing
  - ECEN420: Linear Control Systems
  - ECEN422: Control Engineering and Design Methodology
  - ECEN442: DSP Based Electromechanical Motion Control
  - ECEN444: Digital Signal Processing
  - ECEN447: Digital Image Processing
  - ECEN448: Real Time Digital Signal Processing

# BS-CPEN Technical Electives, continued

- Software and Systems
  - CSCE314: Programming Languages
  - CSCE410: Operating Systems
  - CSCE411: Design and Analysis of Algorithms
  - CSCE412: Cloud Computing
  - CSCE413: Software Security
  - CSCE429: Software Development, Globalization and Culture Abroad
  - CSCE430: Problem Solving Programming Strategies
  - CSCE431: Software Engineering
  - CSCE432: Accessible Computing
  - CSCE434: Compiler Design
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  - CSCE438: Distributed Systems
  - CSCE440: Quantum Algorithms
  - CSCE442: Scientific Programming
  - CSCE451: Software Reverse Engineering

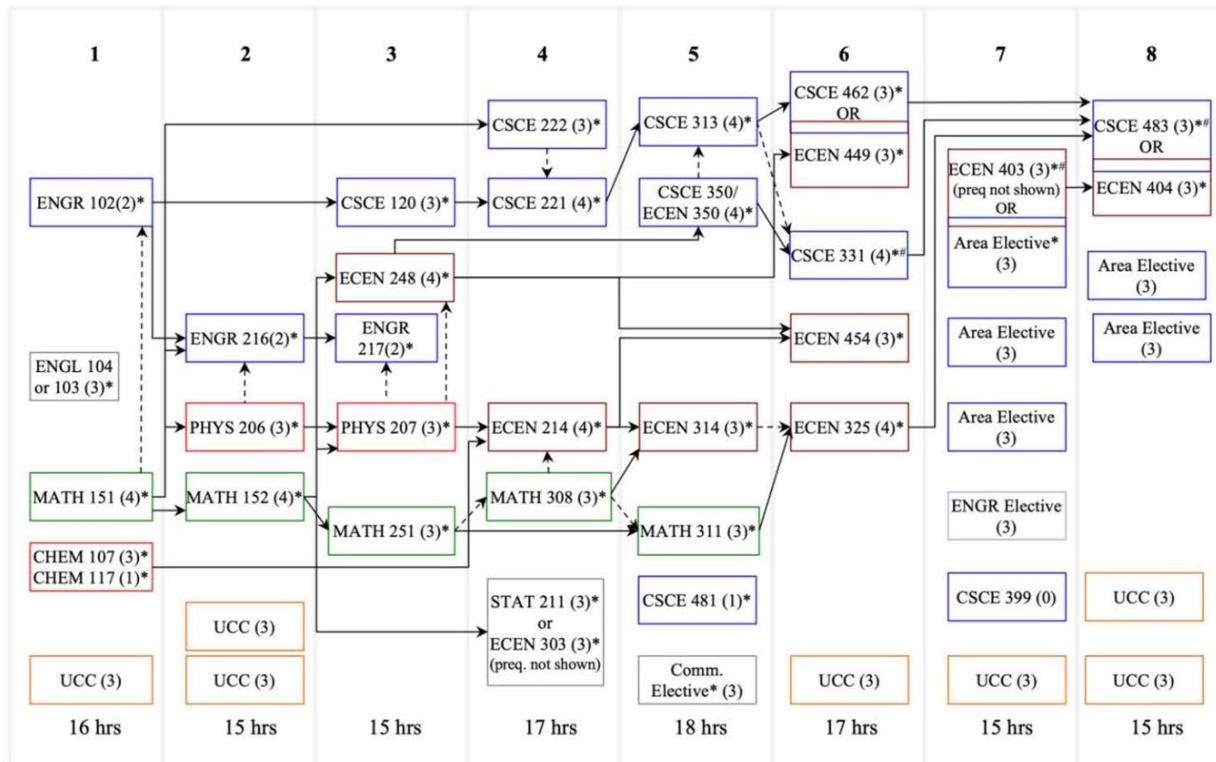
# BS-CPEN Technical Electives, continued

- VLSI and Hardware Systems
  - CSCE/ECEN416: Hardware Design Verification
  - CSCE461/BMEN428: Embedded Systems for Medical Applications
  - CSCE462: Microcomputer Systems
  - CSCE/ECEN469: Advanced Computer Architecture
  - ECEN326: Electronic Circuits
  - ECEN428: Field Programmable Gate Arrays Information Processing Systems
  - ECEN449: Microprocessor System Design
  - ECEN468: Advanced Digital System Design
  - ECEN474: VLSI Circuit Design
  - ECEN475: Introduction to VLSI Systems Design

# BS-CPEN Technical Electives, continued

- Security
  - CSCE413: Software Security
  - CSCE439: Data Analytics for Cybersecurity
  - CSCE449: Applied Cryptography
  - CSCE451: Software Reverse Engineering
  - CSCE465: Computer and Network Security
  - CSCE/ECEN426: Security of Embedded Systems
  - ECEN/CYBR466: Unconditionally Secure Electronics
  - MATH470: Communications and Cryptography

# BS-CPEN 4 year flowchart



The most important thing to note with this degree plan flow is the order of course prerequisites. When planning your classes each semester, and for your whole degree, you need to make sure that all prerequisites are being met. Course prerequisites can be found in the course catalog, and in the details on Howdy.

# BA-CPSC degree (sample)

Texas A&M University – College of Engineering – Department of Computer Science and Engineering  
Degree Plan for the Bachelor of Arts in **Computing (BA-COMP)**  
Valid for the Fall 2021 Catalog #144 (120 Credit Hours)

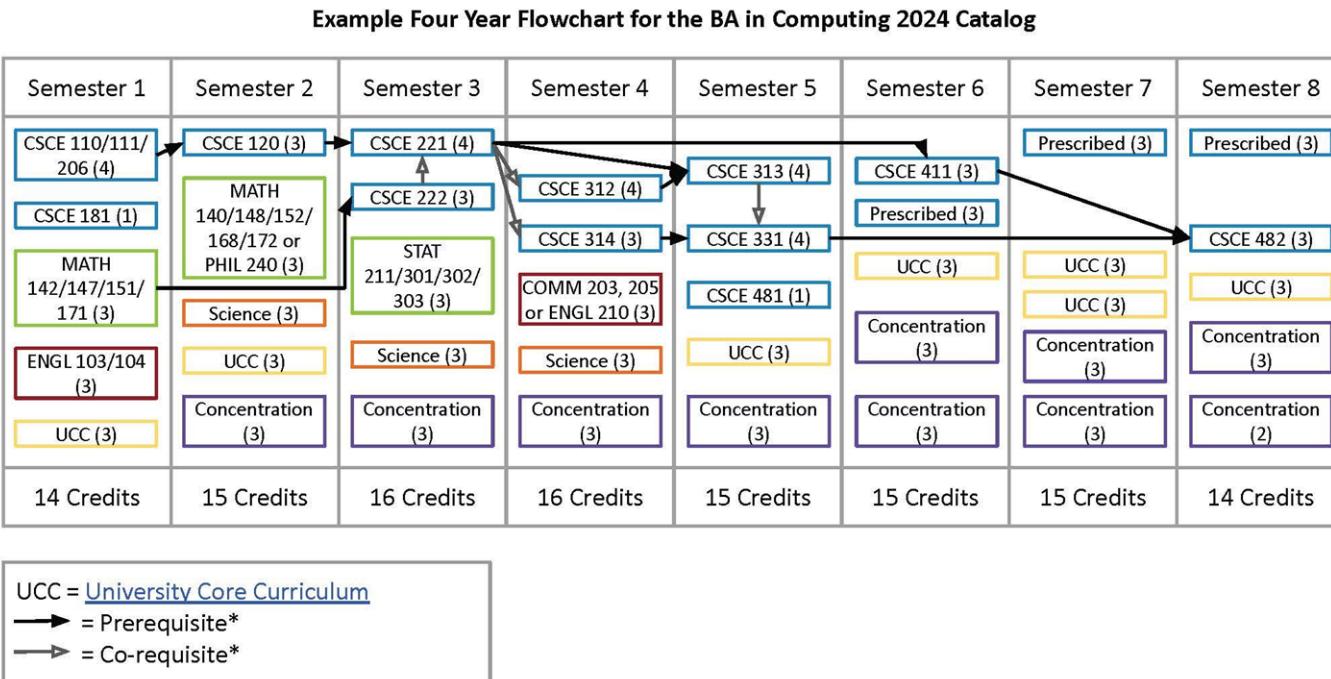
Major Coursework – 34 Credit Hours			Life and Physical Sciences – 9 Credit Hours		
Course	Hrs.	Notes	Course	Hrs.	Notes
CSCE 110, 111, or 206	4		CORE Science	3	
CSCE 181	1		CORE Science	3	see core.tamu.edu
CSCE 120	3	Can replace with CSCE 121	CORE Science	3	
CSCE 221	4				
CSCE 222	3				
CSCE 312	4		CORE Lang. Phil. & Culture *	3	see core.tamu.edu
CSCE 313	4		Creative Arts – 3 Credit Hours	3	see core.tamu.edu
CSCE 314	3				
CSCE 331	4	University Writing Requirement	Social Behavioral Sciences – 3 Credit Hours	3	see core.tamu.edu
CSCE 481	1		CORE Social Science *	3	see core.tamu.edu
STAT 211, 301, 302, or 303	3		Citizenship – 12 Credit Hours	3	see core.tamu.edu
Supporting Coursework – 41 Credit Hours			CORE History	3	see core.tamu.edu
CSCE 482	3	University Writing Requirement	CORE History	3	
CSCE Technical Prescribed Elective	3		POLS 207	3	
CSCE Technical Prescribed Elective	3	9 credit hours total from 300 and 400 CSCE courses (see list in full packet)			
CSCE Technical Prescribed Elective	3				
Concentration Elective	3		Foreign Language – 0 Credit Hours	2	2 years high school or 2 terms college
Concentration Elective	3				
Concentration Elective	3		International & Culture Diversity/ Cultural Discourse		
Concentration Elective	3	29 credit hours total; Must be approved by an advisor and in a single cohesive area (see details in full packet)	ICD	(3)	try to link with LPC, CA or SBS
Concentration Elective	3		CD	(3)	
Concentration Elective	3				
Concentration Elective	3		Notes:		
Concentration Elective	3		Disclaimer: This is a planning tool only!		
Concentration Elective	3		Use NAVIGATE to make advising appointments and talk to your advisor		
Concentration Elective	3		Degree Planner due each year between March 1st - September 30th		
Concentration Elective	3		Find more detailed notes in the full packet		
Concentration Elective	3		<b>BOLD and shaded background = C or higher grade required</b>		
Concentration Elective	3		Prerequisites must be completed before taking courses, corequisite must be completed before or taken concurrently, see catalog.tamu.edu for listing		
Concentration Elective	2				
Communication – 9 Credit Hours					
ENGL 103 or 104	3				
COMM 203, 205, or 243	3				
ENGL 203, 210, or 241	3				
Mathematics – 6 Credit Hours					
MATH 142, 147, 151, or 171	4				
MATH 140, 148, 152, 168, 172 or PHIL 240	4				

- Courses requiring a C or better are in blue boxes
- Green box core curriculum courses can overlap with ICD/CD requirements; please visit this link for core curriculum: <https://core.tamu.edu/>
- Visit your advising canvas page for details on
  - Supporting/emphasis area
  - Technical electives

# BA-CPSC Technical Electives

- The options for BA-CPSC technical electives should be the same as those for the BS-CPSC degree. However, all elective choices must be made in consultation with your faculty advisor.

# BA-CPSC 4 year flowchart



\* Always consult the [University Catalog](#) for current course prerequisites, co-requisites, and restrictions.

Note on CSCE Seminar Timing (CSCE 181/481):

- Students are encouraged to take CSCE 181 early in the plan to better understand the degree program and get exposure to different areas in computing for later selection of Prescribed electives.
- Students are encouraged to take CSCE 481 during their junior year to prepare for internship and job interviews as well understand different career options after the baccalaureate degree.

The most important thing to note with this degree plan flow is the order of course prerequisites. When planning your classes each semester, and for your whole degree, you need to make sure that all prerequisites are being met. Course prerequisites can be found in the course catalog, and in the details on Howdy.

# CPSC degrees: BA vs. BS

- No common freshman engineering first-year programming for BA students
- Identical foundational courses at 100, 200, and 300 level, with the addition; ENGR102 for BS students, CSCE110/111/206 for BA students
- Fewer 300-400 level CSCE electives required for BA students
- 29 credits of concentration electives for BA students vs. 12 credits of emphasis area electives for BS students
  - BA students should be used to develop a secondary specialty
- Fewer math credits required for BA students, more choices
- Fewer science credits required for BA students, more choices
- One additional communication requirement for BA students
- Students in the BA program will submit a supplementary degree plan for supporting area approval

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# Enhancing your degree: ENGR[x]\*

Examples of the HIE include:

- Study Abroad
- Engineering Honors program or CSCE honors classes
- Research with a professor
- Internships/co-ops
- Graduate CSCE courses (and ECEN, for CPEN)
- STEM to Stocks
- Significant leadership activities in service of the department; these must be individually approved
- \*BA-CPSC students are not required to complete ENGR[x], but we still encourage participation in high-impact experiences



# Useful Information



# Academic Deficiency

- Scholastic deficiency: acquiring term GPA < 2.0 or cumulative GPA < 2.0 (other situations possible)
- Student must remove deficiency within 1-3 semesters to avoid being dismissed from the Department or the College
- To view the College of Engineering's policy on probation and dismissal, please visit  
<https://engineering.tamu.edu/academics/resources/probation.html>

# Repeating courses

- Student rule 10 indicates that a student is not allowed to take a class more than three times without permission from the department AND college.
- After attempting a course twice, students will be placed on probation, and they must meet with an advisor by the end of the 2nd week of the new semester.
- After attempting a course three times, students will be dismissed from the department. Students are allowed to appeal to the department and college, but appeals are not guaranteed.



# Degree evaluations and degree planners



# Undergraduate Degree Planners

- Students are required to get their degree plan approved by the fall following their entry (or they will be blocked from registration in the following spring)
- Student guide available on Howdy
- Template with courses available as a starting point, along with material on our Canvas page.
- Tips
  - Prerequisite Check tab: check prerequisites are met
  - Degree Evaluation tab: check that you have courses planned for every degree requirement
  - Include comments explaining any unmet requirements
    - E.g., planner not recognizing approved course
    - Some electives (BA-CPSC/BS-CPEN/BS-CPSC) and supporting area coursework may not be recognized by the planner, but they may still be used.

# Degree evaluations

- You will frequently find it useful to run a degree evaluation to determine what classes are credited and which remain
  - This is what your graduation is based on, not your planner.
  - Select degree evaluation in Howdy
  - Select your catalog year
  - Select your upper division major: “BS CPSC” or “BS CPEN” or “BA CPSC”
  - Follow the links through to generate the request
  - Select “Detail Requirements”
  - Note that items requiring decisions by our office won’t be shown until we are able to submit a manual request. These include courses transferred “by title,” supporting area electives, etc. These courses will be shown in the “Work Not Applied” until adjustments are submitted.



# Registration to-do list



# Aggie Schedule Builder



## Understanding Registration

*Melyssa-Anne Stricklin*

*AGLS Advising Center 2 – AGEC, ALEC, RPTS*

AGLS  
Advising  
Center 2  
AGEC • ALEC • RPTS

# Registration to-do list

Registration will proceed much faster if you:

- Decide on courses you want to take
- Find Sections on Howdy with available seats that fit your schedule
- Pay attention to all times and days listed
- Pay attention to all section restrictions and details

# Registration, continued

- We will provide you with a list of specific classes (or types of classes) to take, based on what we see on your incoming transcript.
- We are not able to guarantee seats in other departments.
- We know that this will be a frustrating process, and we share your frustration. We promise future registration sessions will be easier!

# Clear your holds

- Tuition Rate Selection: select tuition rate code from “My Finances” tab on howdy
- Bacterial Meningitis Immunization: Contact ADMI at 979-845-1060
- Check-In at ISS:
  - Phone: 979-845-1151
- Tuberculosis Screening: Student Health 979-458-8310
- Engl. Proficiency Not Verified: let us know!

# Thanks & Gig 'em!

## Contact Us



471 Houston St.



979.845.5826



979.256.1311



nsfp@tamu.edu

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