

COMPUTATIONAL AND APPLIED MATHEMATICAL SCIENCES (BS)

Education, Democracy, and Social Change

Computational and Applied Mathematical Sciences (CAMS) is an interdisciplinary mathematics program that emphasizes computer science, experimentation, and data collection. Mathematics provides students with methods and theory that live at the heart of problem solving and data analysis in the physical sciences, engineering, and innovative industries. Combining mathematics with computer science gives students the practical skills necessary to employ their theoretical mathematics knowledge and develop algorithms to address problems in the real world. Students in CAMS will also complete 16 to 23 credits in an enrichment option of their choice. The enrichment option gives students experience in a particular field where mathematics and computer science can be applied, and the background to properly implement their skills.

Degree Requirements

Course	Title	Credits
Major Requirements		
CS 2370	Introduction to Programming	4
CS 2381	Data Structures and Intermediate Programming	4
CS 3221	Algorithm Analysis	4
CS 3600	Database Management Systems	4
MA 2400	Introduction to Formal Mathematics	3
MA 2550	Calculus I (QRCO)	4
MA 2560	Calculus II (QRCO)	4
MA 2700	Logic, Proofs, and Axiomatic Systems (WRCO)	3
MA 3120	Linear Algebra	3
MA 3355	Introduction to Mathematical Modeling (TECO)	4
MA 3510	Differential Equations	3
MA 3540	Calculus III	4
MA 4510	Introduction to Analysis	3
Complete one course from the following:		3
MA 3280	Regression Analysis	
MA 3500	Probability and Statistics for Scientists	
Complete one course from the following:		3-4
CS 4520	CyberEthics (DICO,INCO,WRCO)	
CJ 3155	Society, Ethics, and the Law (DICO,INCO)	
General Education (https://coursecatalog.plymouth.edu/general-education)		27-36
Option Requirements		30-41
Complete one of the following required options:		
Biology		
Chemistry		
Criminal Justice		
Physical Meteorology		
Psychology		
Weather Analysis		
Total Credits		120

Biology Option of BS in Computational and Applied Mathematical Sciences

Through the CAMS major with the Biology option, students learn fundamental biology and chemistry, and then focus on genetics and conservation. This degree prepares students for a career or graduate study in computational bioinformatics, genomics, neurobiology, and other interdisciplinary biology and mathematics fields.

Course	Title	Credits
Option Requirements		
BI 1110	Biological Science I (TECO)	4
BI 1120	Biological Science II	4
BI 3060	Genetics	4
BI 3240	Conservation (DICO,GACO,INCO)	3
CH 2335	General Chemistry I (QRCO)	4
CH 2340	General Chemistry II	4
General Education (https://coursecatalog.plymouth.edu/general-education)		
EN 1400	Composition	4
IS 1115	Tackling a Wicked Problem	4
CTDI (https://coursecatalog.plymouth.edu/general-education/#CTDI)	Creative Thought Direction	3-4
PPDI (https://coursecatalog.plymouth.edu/general-education/#PPDI)	Past and Present Direction	3-4
SSDI (https://coursecatalog.plymouth.edu/general-education/#SSDI)	Self and Society Direction	3-4
Directions (choose from CTDI, PPDI, SIDI, SSDI)		3-4
WECO	Wellness Connection	3-4
Elective		14-17
Total Credits		60-68

Chemistry Option of BS in Computational and Applied Mathematical Sciences

Through the CAMS major with the Chemistry option, students learn general chemistry and organic chemistry. Students then can choose to further study organic chemistry or to instead focus on instrumentation or quantum mechanics. This degree prepares students for a career or graduate study in analytical chemistry, forensics, and other interdisciplinary chemistry and mathematics fields.

Course	Title	Credits
Option Requirements		
CH 1050	Laboratory Safety	1
CH 2335	General Chemistry I (QRCO)	4
CH 2250	Techniques in Laboratory Chemistry	2
CH 2340	General Chemistry II	4
CH 3370	Organic Chemistry I	4

Choose one course from the following:			4
CH 3400	Instrumental Analysis (TECO)		
CH 3380	Organic Chemistry II		
CH 3465	Physical Chemistry: Quantum Mechanics and Spectroscopy		
General Education (https://coursecatalog.plymouth.edu/general-education)			
EN 1400	Composition		4
IS 1115	Tackling a Wicked Problem		4
CTDI (https://coursecatalog.plymouth.edu/general-education/#CTDI)	Creative Thought Direction		3-4
PPDI (https://coursecatalog.plymouth.edu/general-education/#PPDI)	Past and Present Direction		3-4
SSDI (https://coursecatalog.plymouth.edu/general-education/#SSDI)	Self and Society Direction		3-4
Directions (choose from CTDI, PPDI, SSDI) ¹			4-8
GACO	Global Awareness Connection		3-4
WECO	Wellness Connection		3-4
Elective			15-18
Total Credits			61-73

¹ Directions should total 16-17 credits because SIDI is waived for BS Computational and Applied Mathematical Sciences, Chemistry Option.

Criminal Justice Option of BS in Computational and Applied Mathematical Sciences

Criminal Justice is an inherently interdisciplinary field, and the CAMS major with the Criminal Justice option prepares students for the analytical aspect of Criminal Justice. Students have a choice of electives that prepare them for a career in law, government agencies, and private industries. Future career possibilities include criminologist, criminal intelligence analyst, forensic scientist, and criminal investigator.

Course	Title	Credits
Option Requirements		
CJ 2090	Criminal Law	4
Choose three courses from the following:		
CJ 2080	Crime and Criminals	
CJ 3005	Criminal Investigation	
CJ 3015	Cybercrime	
CJ 3025	Forensic Science	
CJ 3055	The Law Enforcement Environment	
CJ 3405	Homeland Security	
General Education (https://coursecatalog.plymouth.edu/general-education)		

EN 1400	Composition	4
IS 1115	Tackling a Wicked Problem	4
CTDI (https://coursecatalog.plymouth.edu/general-education/#CTDI)	Creative Thought Direction	3-4
PPDI (https://coursecatalog.plymouth.edu/general-education/#PPDI)	Past and Present Direction	3-4
SIDI (https://coursecatalog.plymouth.edu/general-education/#SIDI)	Scientific Inquiry Direction	3-4
SSDI (https://coursecatalog.plymouth.edu/general-education/#SSDI)	Self and Society Direction	3-4
Directions (choose from CTDI, PPDI, SIDI, SSDI)		4-8
GACO	Global Awareness Connection	3-4
WECO	Wellness Connection	3-4
Elective		14-17
Total Credits		60-73

Physical Meteorology Option of BS in Computational and Applied Mathematical Sciences

Meteorology is an inherently interdisciplinary field. Through the CAMS major with the Physical Meteorology option, students learn fundamental physics and atmospheric science. Students choose an elective that focuses on the physics of either atmospheric motions or precipitation and solar radiation. This degree prepares students for a career or graduate study in meteorology, physical meteorology, and applied mathematics.

Course	Title	Credits
Option Requirements		
PH 2410	University Physics I	3
PH 2430	University Physics Laboratory I	1
PH 2420	University Physics II	3
PH 2440	University Physics Laboratory II	1
MT 2110	Introduction to Atmospheric Sciences	3
MT 2230	Introduction to Meteorological Analysis	1
MT 3230	Atmospheric Thermodynamics	3
Choose one course from the following:		
MT 4310	Dynamic Meteorology I	
MT 4410	Atmospheric Physics	
General Education (https://coursecatalog.plymouth.edu/general-education)		
EN 1400	Composition	4
IS 1115	Tackling a Wicked Problem	4

CTDI (https://coursecatalog.plymouth.edu/general-education/#CTDI)	Creative Thought Direction	3-4
PPDI (https://coursecatalog.plymouth.edu/general-education/#PPDI)	Past and Present Direction	3-4
SSDI (https://coursecatalog.plymouth.edu/general-education/#SSDI)	Self and Society Direction	3-4
Directions (choose from CTDI, PPDI, SSDI) ¹		4-8
GACO	Global Awareness Connection	3-4
WECO	Wellness Connection	3-4
Elective		16-19
Total Credits		61-73

¹ Directions should total 16-17 credits because SIDI is waived for BS Computational and Applied Mathematical Sciences, Meteorology Option.

Psychology Option of BS in Computational and Applied Mathematical Sciences

Through the CAMS major with the Psychology option, students learn general, cognitive, and learning psychology, and then focus on psychological measurement. This degree prepares students for a career or graduate study in psychology, quantitative psychology, neuroscience, market research, and other interdisciplinary psychology and mathematics fields.

Course	Title	Credits
Option Requirements		
PS 2010	Introduction to General Psychology	3
PS 3210 & PS 1110	Learning and Learning Laboratory	4
PS 3220 & PS 1120	Cognitive Psychology and Cognitive Psychology Laboratory	4
PS 4440	Psychological Measurement	3
General Education (https://coursecatalog.plymouth.edu/general-education)		
EN 1400	Composition	4
IS 1115	Tackling a Wicked Problem	4
CTDI (https://coursecatalog.plymouth.edu/general-education/#CTDI)	Creative Thought Direction	3-4
PPDI (https://coursecatalog.plymouth.edu/general-education/#PPDI)	Past and Present Direction	3-4

SIDI (https://coursecatalog.plymouth.edu/general-education/#SIDI)	Scientific Inquiry Direction	3-4
SSDI (https://coursecatalog.plymouth.edu/general-education/#SSDI)	Self and Society Direction	3-4
Directions (choose from CTDI, PPDI, SIDI, SSDI)		4-8
GACO	Global Awareness Connection	3-4
WECO	Wellness Connection	3-4
Elective		16-18
Total Credits		60-72

Weather Analysis Option of BS in Computational and Applied Mathematical Sciences

Meteorology is an inherently interdisciplinary field. Through the CAMS major with the Weather Analysis option, students learn fundamental physics and atmospheric science. Students then have a choice of electives that focus on weather and instrumentation. This degree prepares students for a career or graduate study in meteorology, weather analysis, insurance analysis, and other fields in meteorology and applied mathematics.

Course	Title	Credits
Option Requirements		
MT 2110	Introduction to Atmospheric Sciences	3
MT 2230	Introduction to Meteorological Analysis	1
MT 3230	Atmospheric Thermodynamics	3
PH 2410 & PH 2430	University Physics I and University Physics Laboratory I	4
Choose two courses from the following:		7-8
MT 2800	Climatology (GACO)	
MT 3300	Synoptic Meteorology I	
MT 3710	Meteorological Instruments and Observations (WRCO)	
General Education (https://coursecatalog.plymouth.edu/general-education)		
EN 1400	Composition	4
IS 1115	Tackling a Wicked Problem	4
CTDI (https://coursecatalog.plymouth.edu/general-education/#CTDI)	Creative Thought Direction	3-4
PPDI (https://coursecatalog.plymouth.edu/general-education/#PPDI)	Past and Present Direction	3-4
SSDI (https://coursecatalog.plymouth.edu/general-education/#SSDI)	Self and Society Direction	3-4

Directions (choose from CTDI, PPDl, SSDI) ¹	4-8
GACO Global Awareness Connection	3-4
WECO Wellness Connection	3-4
Elective	15-22
Total Credits	60-77

¹ Directions should total 16-17 credits because SIDI is waived for BS Computational and Applied Mathematical Sciences, Weather Analysis Option.

Recommended Course Sequence

Check all course descriptions for prerequisites before planning course schedule. Course sequence is suggested but not required.

To complete the bachelor's degree in 4 years, you must successfully complete a minimum of 15 credits each semester or have a plan to make up credits over the course of the 4 years. For example, if you take 14 credits one semester, you need to take 16 credits in another semester. Credits completed must count toward your program requirements (major, option, minor, certificate, general education or free electives).

Required Options in this Major

Complete One Option

Biology Option of BS in Computational and Applied Mathematical Sciences

Check all course descriptions for prerequisites before planning course schedule. Course sequence is suggested but not required.

Please use the following sequence for as an odd start year:

Course	Title	Credits
Year One		
Fall		
MA 2400	Introduction to Formal Mathematics	3
MA 2550	Calculus I (QRCO)	4
IS 1115	Tackling a Wicked Problem	4
EN 1400	Composition	4
Credits		15
Spring		
MA 2700	Logic, Proofs, and Axiomatic Systems (WRCO)	3
MA 2560	Calculus II (QRCO)	4
WECO	Wellness Connection	4
CTDI (https://coursecatalog.plymouth.edu/general-education/#CTDI)	Creative Thought Direction	4
Credits		15
Year Two		
Fall		
MA 3510	Differential Equations	3
CS 2370	Introduction to Programming	4
BI 1110	Biological Science I (TECO)	4
CH 2335	General Chemistry I (QRCO)	4
Credits		15

Spring		
MA 3540	Calculus III	4
CS 2381	Data Structures and Intermediate Programming	4
BI 1120	Biological Science II	4
CH 2340	General Chemistry II	4
Credits		16

Year Three

Fall		
MA 3355	Introduction to Mathematical Modeling (TECO)	4
CS 3600	Database Management Systems	4
BI 3060	Genetics	4
Directions (choose from CTDI, PPDl, SIDI, SSDI) (https://coursecatalog.plymouth.edu/general-education)		4
Credits		16

Spring

MA 3120	Linear Algebra	3
CS 3221	Algorithm Analysis	4
PPDI (https://coursecatalog.plymouth.edu/general-education/#PPDI)	Past and Present Direction	4
Elective		4
Credits		15

Year Four

Fall		
MA 4510	Introduction to Analysis	3
BI 3240	Conservation (DICO,GACO,INCO)	3
CS 4520 or CJ 3155	CyberEthics (DICO,INCO,WRCO) or Society, Ethics, and the Law (DICO,INCO)	3-4
SSDI (https://coursecatalog.plymouth.edu/general-education/#SSDI)	Self and Society Direction	3-4
Credits		12-14

Spring

MA 3280 or MA 3500	Regression Analysis or Probability and Statistics for Scientists	3
Elective		12
Credits		15
Total Credits		120

Biology Option of BS in Computational and Applied Mathematical Sciences

Check all course descriptions for prerequisites before planning course schedule. Course sequence is suggested but not required.

Please use the following sequence for an even star year:

Course	Title	Credits
Year One		
Fall		
MA 2400	Introduction to Formal Mathematics	3
MA 2550	Calculus I (QRCO)	4
IS 1115	Tackling a Wicked Problem	4
EN 1400	Composition	4
Credits		15
Spring		
MA 2700	Logic, Proofs, and Axiomatic Systems (WRCO)	3
MA 2560	Calculus II (QRCO)	4
SSDI (https://coursecatalog.plymouth.edu/general-education/#SSDI)	Self and Society Direction	4
CTDI (https://coursecatalog.plymouth.edu/general-education/#CTDI)	Creative Thought Direction	4
Credits		15
Year Two		
Fall		
MA 3510	Differential Equations	3
CS 2370	Introduction to Programming	4
BI 1110	Biological Science I (TECO)	4
CH 2335	General Chemistry I (QRCO)	4
Credits		15
Spring		
MA 3540	Calculus III	4
CS 2381	Data Structures and Intermediate Programming	4
BI 1120	Biological Science II	4
CH 2340	General Chemistry II	4
Credits		16
Year Three		
Fall		
MA 4510	Introduction to Analysis	3
CS 3600	Database Management Systems	4
BI 3060	Genetics	4
PPDI (https://coursecatalog.plymouth.edu/general-education/#PPDI)	Past and Present Direction	4
Credits		15
Spring		
MA 3120	Linear Algebra	3
CS 3221	Algorithm Analysis	4
MA 3280 or MA 3500	Regression Analysis or Probability and Statistics for Scientists	3
Elective		6
Credits		16

Course	Title	Credits
Year Four		
Fall		
MA 3355	Introduction to Mathematical Modeling (TECO)	4
BI 3240	Conservation (DICO,GACO,INCO)	3
CS 4520 or CJ 3155	CyberEthics (DICO,INCO,WRCO) or Society, Ethics, and the Law (DICO,INCO)	3-4
Elective		3-4
Credits		13-15
Spring		
WECO	Wellness Connection	4
Directions (choose from CTDI, PPDI, SIDI, SSDI)		4
Elective		6
Credits		14
Total Credits		120

Chemistry Option of BS in Computational and Applied Mathematical Sciences

Check all course descriptions for prerequisites before planning course schedule. Course sequence is suggested but not required.

Please use the following sequence for an odd start year:

Course	Title	Credits
Year One		
Fall		
MA 2400	Introduction to Formal Mathematics	3
MA 2550	Calculus I (QRCO)	4
EN 1400	Composition	4
IS 1115	Tackling a Wicked Problem	4
Credits		15
Spring		
MA 2700	Logic, Proofs, and Axiomatic Systems (WRCO)	3
MA 2560	Calculus II (QRCO)	4
SSDI (https://coursecatalog.plymouth.edu/general-education/#SSDI)	Self and Society Direction	4
CTDI (https://coursecatalog.plymouth.edu/general-education/#CTDI)	Creative Thought Direction	4
Credits		15
Year Two		
Fall		
MA 3510	Differential Equations	3
CS 2370	Introduction to Programming	4
PPDI (https://coursecatalog.plymouth.edu/general-education/#PPDI)	Past and Present Direction	4
Directions (choose from CTDI, PPDI, SSDI)		4
Credits		15

Spring		
MA 3540	Calculus III	4
CS 2381	Data Structures and Intermediate Programming	4
GACO	Foreign Language	4
WECO	Wellness Connection	4
Credits		16

Year Three

Fall		
MA 3355	Introduction to Mathematical Modeling (TECO)	4
CS 3600	Database Management Systems	4
CH 2335	General Chemistry I (QRCO)	4
CH 1050	Laboratory Safety	1
Elective		3
Credits		16

Spring		
MA 3120	Linear Algebra	3
CH 2340	General Chemistry II	4
CH 2250	Techniques in Laboratory Chemistry	2
CS 3221	Algorithm Analysis	4
Elective		3
Credits		16

Year Four

Fall		
MA 4510	Introduction to Analysis	3
CH 3370	Organic Chemistry I	4
CS 4520 or CJ 3155	CyberEthics (DICO,INCO,WRCO) or Society, Ethics, and the Law (DICO,INCO)	3-4
Elective		3-4
Credits		13-15

Spring		
MA 3280 or MA 3500	Regression Analysis or Probability and Statistics for Scientists	3
CH 3400 or CH 3380 or CH 3465	Instrumental Analysis (TECO) or Organic Chemistry II or Physical Chemistry: Quantum Mechanics and Spectroscopy	4
Elective		6
Credits		13
Total Credits		120

Chemistry Option of BS in Computational and Applied Mathematical Sciences

Check all course descriptions for prerequisites before planning course schedule. Course sequence is suggested but not required.

Please use the following sequence for an even start year:

Course	Title	Credits
Year One		
Fall		
MA 2400	Introduction to Formal Mathematics	3

MA 2550	Calculus I (QRCO)	4
EN 1400	Composition	4
IS 1115	Tackling a Wicked Problem	4
Credits		15

Spring		
MA 2700	Logic, Proofs, and Axiomatic Systems (WRCO)	3
MA 2560	Calculus II (QRCO)	4
WECO	Wellness Connection	4
CTDI (https://coursecatalog.plymouth.edu/general-education/#CTDI)	Creative Thought Direction	4
Credits		15

Year Two

Fall		
MA 3510	Differential Equations	3
GACO	Global Awareness Connection	4
CH 2335	General Chemistry I (QRCO)	4
CH 1050	Laboratory Safety	1
Elective		3
Credits		15

Spring		
MA 3540	Calculus III	4
Directions (choose from CTDI, PPDI, SIDI, SSDI)		4
CH 2340	General Chemistry II	4
CH 2250	Techniques in Laboratory Chemistry	2
Elective		1
Credits		15

Year Three

Fall		
MA 4510	Introduction to Analysis	3
CS 2370	Introduction to Programming	4
PPDI (https://coursecatalog.plymouth.edu/general-education/#PPDI)	Past and Present Direction	4
SSDI (https://coursecatalog.plymouth.edu/general-education/#SSDI)	Self and Society Direction	4
Credits		15

Spring		
MA 3120	Linear Algebra	3
MA 3280 or MA 3500	Regression Analysis or Probability and Statistics for Scientists	3
CH 3400 or CH 3380 or CH 3465	Instrumental Analysis (TECO) or Organic Chemistry II or Physical Chemistry: Quantum Mechanics and Spectroscopy	4
CS 2381	Data Structures and Intermediate Programming	4

Elective		1
Credits		15
Year Four		
Fall		
MA 3355	Introduction to Mathematical Modeling (TECO)	4
CS 4520 or CJ 3155	CyberEthics (DICO,INCO,WRCO) or Society, Ethics, and the Law (DICO,INCO)	3-4
CS 3600	Database Management Systems	4
Elective		3-4
Credits		14-16
Spring		
Elective		12
CS 3221	Algorithm Analysis	4
Credits		16
Total Credits		120

Criminal Justice Option of BS in Computational and Applied Mathematical Sciences

Check all course descriptions for prerequisites before planning course schedule. Course sequence is suggested but not required.

Please use the following sequence for an odd start year:

Course	Title	Credits
Year One		
Fall		
MA 2400	Introduction to Formal Mathematics	3
MA 2550	Calculus I (QRCO)	4
EN 1400	Composition	4
IS 1115	Tackling a Wicked Problem	4
Credits		15
Spring		
MA 2700	Logic, Proofs, and Axiomatic Systems (WRCO)	3
MA 2560	Calculus II (QRCO)	4
WECO	Wellness Connection	4
CTDI (https://coursecatalog.plymouth.edu/general-education/#CTDI)	Creative Thought Direction	4
Credits		15
Year Two		
Fall		
MA 3510	Differential Equations	3
CS 2370	Introduction to Programming	4
PPDI (https://coursecatalog.plymouth.edu/general-education/#PPDI)	Past and Present Direction	4

SIDI (https://coursecatalog.plymouth.edu/general-education/#SIDI)	Scientific Inquiry Direction	4
Credits		15
Spring		
MA 3540	Calculus III	4
CS 2381	Data Structures and Intermediate Programming	4
SSDI (https://coursecatalog.plymouth.edu/general-education/#SSDI)	Self and Society Direction	4
Directions (choose from CTDI, PPDI, SIDI, SSDI)		4
Credits		16

Year Three		
Fall		
MA 3355	Introduction to Mathematical Modeling (TECO)	4
CS 3600	Database Management Systems	4
CJ 2090	Criminal Law	4
GACO	Global Awareness Connection	4
Credits		16

Spring		
MA 3120	Linear Algebra	3
CJ 2080	Crime and Criminals or CJ 3005 or Criminal Investigation or CJ 3015 or Cybercrime or CJ 3025 or Forensic Science or CJ 3055 or The Law Enforcement Environment or CJ 3405 or Homeland Security	4
CS 3221	Algorithm Analysis	4
Elective		4
Credits		15

Year Four		
Fall		
MA 4510	Introduction to Analysis	3
CS 4520 or CJ 3155	CyberEthics (DICO,INCO,WRCO) or Society, Ethics, and the Law (DICO,INCO)	3-4
CJ 2080	Crime and Criminals or CJ 3005 or Criminal Investigation or CJ 3015 or Cybercrime or CJ 3025 or Forensic Science or CJ 3055 or The Law Enforcement Environment or CJ 3405 or Homeland Security	4
Elective		3-4
Credits		13-15

Spring		
MA 3280 or MA 3500	Regression Analysis or Probability and Statistics for Scientists	3

CJ 2080 or CJ 3005 or CJ 3015 or CJ 3025 or CJ 3055 or CJ 3405	Crime and Criminals or Criminal Investigation or Cybercrime or Forensic Science or The Law Enforcement Environment or Homeland Security	4
Elective		7
	Credits	14
	Total Credits	120

Criminal Justice Option of BS in Computational and Applied Mathematical Sciences

Check all course descriptions for prerequisites before planning course schedule. Course sequence is suggested but not required.

Please use the following sequence for an even start year:

Course	Title	Credits
Year One		
Fall		
MA 2400	Introduction to Formal Mathematics	3
MA 2550	Calculus I (QRCO)	4
EN 1400	Composition	4
IS 1115	Tackling a Wicked Problem	4
	Credits	15
Spring		
MA 2700	Logic, Proofs, and Axiomatic Systems (WRCO)	3
MA 2560	Calculus II (QRCO)	4
WECO	Wellness Connection	4
CTDI (https://coursecatalog.plymouth.edu/general-education/#CTDI)	Creative Thought Direction	4
	Credits	15
Year Two		
Fall		
MA 3510	Differential Equations	3
CS 2370	Introduction to Programming	4
PPDI (https://coursecatalog.plymouth.edu/general-education/#PPDI)	Past and Present Direction	4
SIDI (https://coursecatalog.plymouth.edu/general-education/#SIDI)	Scientific Inquiry Direction	4
	Credits	15
Spring		
MA 3540	Calculus III	4
CS 2381	Data Structures and Intermediate Programming	4
SSDI (https://coursecatalog.plymouth.edu/general-education/#SSDI)	Self and Society Direction	4

Directions (choose from CTDI, PPDI, SIDI, SSDI)		4
	Credits	16
Year Three		
Fall		
MA 4510	Introduction to Analysis	3
CS 3600	Database Management Systems	4
CJ 2090	Criminal Law	4
GACO	Global Awareness Connection	4
	Credits	15
Spring		
MA 3120	Linear Algebra	3
MA 3280 or MA 3500	Regression Analysis or Probability and Statistics for Scientists	3
CJ 2080 or CJ 3005 or CJ 3015 or CJ 3025 or CJ 3055 or CJ 3405	Crime and Criminals or Criminal Investigation or Cybercrime or Forensic Science or The Law Enforcement Environment or Homeland Security	4
Elective		6
	Credits	16
Year Four		
Fall		
MA 3355	Introduction to Mathematical Modeling (TECO)	4
CS 4520 or CJ 3155	CyberEthics (DICO,INCO,WRCO) or Society, Ethics, and the Law (DICO,INCO)	3-4
CJ 2080 or CJ 3005 or CJ 3015 or CJ 3025 or CJ 3055 or CJ 3405	Crime and Criminals or Criminal Investigation or Cybercrime or Forensic Science or The Law Enforcement Environment or Homeland Security	4
Elective		3-4
	Credits	14-16
Spring		
CJ 2080 or CJ 3005 or CJ 3015 or CJ 3025 or CJ 3055 or CJ 3405	Crime and Criminals or Criminal Investigation or Cybercrime or Forensic Science or The Law Enforcement Environment or Homeland Security	4
CS 3221	Algorithm Analysis	4
Elective		6
	Credits	14
	Total Credits	120

Physical Meteorology Option of BS in Computational and Applied Mathematical Sciences

Check all course descriptions for prerequisites before planning course schedule. Course sequence is suggested but not required.

Please use the following sequence for an odd start year.

Course	Title	Credits
Year One		
Fall		
MA 2400	Introduction to Formal Mathematics	3
MA 2550	Calculus I (QRCO)	4
EN 1400	Composition	4
IS 1115	Tackling a Wicked Problem	4
	Credits	15
Spring		
MA 2700	Logic, Proofs, and Axiomatic Systems (WRCO)	3
MA 2560	Calculus II (QRCO)	4
CTDI (https://coursecatalog.plymouth.edu/general-education/#CTDI)	Creative Thought Direction	4
PPDI (https://coursecatalog.plymouth.edu/general-education/#PPDI)	Past and Present Direction	4
	Credits	15
Year Two		
Fall		
MA 3510	Differential Equations	3
CS 2370	Introduction to Programming	4
PH 2410	University Physics I	3
PH 2430	University Physics Laboratory I	1
SSDI (https://coursecatalog.plymouth.edu/general-education/#SSDI)	Self and Society Direction	4
	Credits	15
Spring		
MA 3540	Calculus III	4
CS 2381	Data Structures and Intermediate Programming	4
PH 2420	University Physics II	3
PH 2440	University Physics Laboratory II	1
GACO	Foreign Language	3
	Credits	15
Year Three		
Fall		
MA 3355	Introduction to Mathematical Modeling (TECO)	4
CS 3600	Database Management Systems	4
MT 2110	Introduction to Atmospheric Sciences	3
MT 2230	Introduction to Meteorological Analysis	1
WECO	Wellness Connection	3
	Credits	15
Spring		
CS 3221	Algorithm Analysis	4
MT 3230	Atmospheric Thermodynamics	3

MA 3120	Linear Algebra	3
Elective		4
	Credits	14
Year Four		
Fall		
MA 4510	Introduction to Analysis	3
CS 4520 or CJ 3155	CyberEthics (DICO,INCO,WRCO) or Society, Ethics, and the Law (DICO,INCO)	3-4
MT 4310 or MT 4410	Dynamic Meteorology I or Atmospheric Physics	3
Elective		4-6
	Credits	13-16
Spring		
MA 3280 or MA 3500	Regression Analysis or Probability and Statistics for Scientists	3
Directions (choose from CTDI, PPDI, SSDI)		3
Elective		10
	Credits	16
	Total Credits	120

Physical Meteorology Option of BS in Computational and Applied Mathematical Sciences

Check all course descriptions for prerequisites before planning course schedule. Course sequence is suggested but not required.

Please use the following sequence for an even start year:

Course	Title	Credits
Year One		
Fall		
MA 2400	Introduction to Formal Mathematics	3
MA 2550	Calculus I (QRCO)	4
EN 1400	Composition	4
IS 1115	Tackling a Wicked Problem	4
	Credits	15
Spring		
MA 2700	Logic, Proofs, and Axiomatic Systems (WRCO)	3
MA 2560	Calculus II (QRCO)	4
CTDI (https://coursecatalog.plymouth.edu/general-education/#CTDI)	Creative Thought Direction	4
PPDI (https://coursecatalog.plymouth.edu/general-education/#PPDI)	Past and Present Direction	4
	Credits	15
Year Two		
Fall		
MA 3510	Differential Equations	3
CS 2370	Introduction to Programming	4
PH 2410	University Physics I	3

PH 2430	University Physics Laboratory I	1
SSDI (https://coursecatalog.plymouth.edu/general-education/#SSDI)	Self and Society Direction	4
Credits		15
Spring		
MA 3540	Calculus III	4
CS 2381	Data Structures and Intermediate Programming	4
PH 2420	University Physics II	3
PH 2440	University Physics Laboratory II	1
GACO	Global Awareness Connection	3
Credits		15
Year Three		
Fall		
MA 4510	Introduction to Analysis	3
CS 3600	Database Management Systems	4
MT 2110	Introduction to Atmospheric Sciences	3
MT 2230	Introduction to Meteorological Analysis	1
WECO	Wellness Connection	3
Credits		14
Spring		
CS 3221	Algorithm Analysis	4
MA 3280 or MA 3500	Regression Analysis or Probability and Statistics for Scientists	3
MT 3230	Atmospheric Thermodynamics	3
MA 3120	Linear Algebra	3
Elective		3
Credits		16
Year Four		
Fall		
MA 3355	Introduction to Mathematical Modeling (TECO)	4
CS 4520 or CJ 3155	CyberEthics (DICO, INCO, WRCO) or Society, Ethics, and the Law (DICO, INCO)	3-4
MT 4310 or MT 4410	Dynamic Meteorology I or Atmospheric Physics	3
Elective		0-2
Elective		3
Credits		13-16
Spring		
Directions (choose from CTDI, PPD, SSDI)		3
Elective		12
Credits		15
Total Credits		120

Psychology Option of BS in Computational and Applied Mathematical Sciences

Check all course descriptions for prerequisites before planning course schedule. Course sequence is suggested but not required.

Please use the following sequence for as an odd start year.

Course	Title	Credits
Year One		
Fall		
MA 2400	Introduction to Formal Mathematics	3
MA 2550	Calculus I (QRCO)	4
EN 1400	Composition	4
IS 1115	Tackling a Wicked Problem	4
Credits		15
Spring		
MA 2700	Logic, Proofs, and Axiomatic Systems (WRCO)	3
MA 2560	Calculus II (QRCO)	4
CTDI (https://coursecatalog.plymouth.edu/general-education/#CTDI)	Creative Thought Direction	4
PPDI (https://coursecatalog.plymouth.edu/general-education/#PPDI)	Past and Present Direction	4
Credits		15
Year Two		
Fall		
MA 3510	Differential Equations	3
CS 2370	Introduction to Programming	4
SIDI (https://coursecatalog.plymouth.edu/general-education/#SIDI)	Scientific Inquiry Direction	4
SSDI (https://coursecatalog.plymouth.edu/general-education/#SSDI)	Self and Society Direction	4
Credits		15
Spring		
MA 3540	Calculus III	4
CS 2381	Data Structures and Intermediate Programming	4
PS 2010	Introduction to General Psychology	3
Directions (choose from CTDI, PPD, SIDI, SSDI)		4
Credits		15
Year Three		
Fall		
MA 3355	Introduction to Mathematical Modeling (TECO)	4
CS 3600	Database Management Systems	4
PS 3210	Learning	4
PS 1110	Learning Laboratory	0
GACO	Foreign Language	3
Credits		15
Spring		
MA 3120	Linear Algebra	3
PS 3220	Cognitive Psychology	4

PS 1120	Cognitive Psychology Laboratory	0
CS 3221	Algorithm Analysis	4
Elective		4
Credits		15
Year Four		
Fall		
MA 4510	Introduction to Analysis	3
CS 4520 or CJ 3155	CyberEthics (DICO,INCO,WRCO) or Society, Ethics, and the Law (DICO,INCO)	3-4
PS 4440	Psychological Measurement	3
Elective		4-6
Credits		13-16
Spring		
MA 3280 or MA 3500	Regression Analysis or Probability and Statistics for Scientists	3
WECO	Wellness Connection	3
Elective		7-8
Credits		13-14
Total Credits		120

Psychology Option of BS in Computational and Applied Mathematical Sciences

Check all course descriptions for prerequisites before planning course schedule. Course sequence is suggested but not required.

Please use the following sequence for as an even start year:

Course	Title	Credits
Year One		
Fall		
MA 2400	Introduction to Formal Mathematics	3
MA 2550	Calculus I (QRCO)	4
EN 1400	Composition	4
IS 1115	Tackling a Wicked Problem	4
Credits		15
Spring		
MA 2700	Logic, Proofs, and Axiomatic Systems (WRCO)	3
MA 2560	Calculus II (QRCO)	4
CTDI (https://coursecatalog.plymouth.edu/general-education/#CTDI)	Creative Thought Direction	4
PPDI (https://coursecatalog.plymouth.edu/general-education/#PPDI)	Past and Present Direction	4
Credits		15
Year Two		
Fall		
MA 3510	Differential Equations	3
CS 2370	Introduction to Programming	4

SIDI (https://coursecatalog.plymouth.edu/general-education/#SIDI)	Scientific Inquiry Direction	4
SSDI (https://coursecatalog.plymouth.edu/general-education/#SSDI)	Self and Society Direction	4
Credits		15

Spring		
MA 3540	Calculus III	4
CS 2381	Data Structures and Intermediate Programming	4
PS 2010	Introduction to General Psychology	3
Directions (choose from CTDI, PPDI, SIDI, SSDI)		4
Credits		15

Year Three		
Fall		
MA 4510	Introduction to Analysis	3
CS 3600	Database Management Systems	4
PS 3210	Learning	4
PS 1110	Learning Laboratory	0
GACO	Global Awareness Connection	4
Credits		15

Spring		
CS 3221	Algorithm Analysis	4
MA 3280 or MA 3500	Regression Analysis or Probability and Statistics for Scientists	3
PS 3220	Cognitive Psychology	4
PS 1120	Cognitive Psychology Laboratory	0
WECO	Wellness Connection	4
Credits		15

Year Four		
Fall		
MA 3355	Introduction to Mathematical Modeling (TECO)	4
CS 4520 or CJ 3155	CyberEthics (DICO,INCO,WRCO) or Society, Ethics, and the Law (DICO,INCO)	3-4
PS 4440	Psychological Measurement	3
Elective		4-6
Credits		14-17

Spring		
MA 3120	Linear Algebra	3
Elective		10
Credits		13
Total Credits		120

Weather Analysis Option of BS in Computational and Applied Mathematical Sciences

Check all course descriptions for prerequisites before planning course schedule. Course sequence is suggested but not required.

Please use the following sequence for as an odd start year:

Course	Title	Credits
Year One		
Fall		
MA 2400	Introduction to Formal Mathematics	3
MA 2550	Calculus I (QRCO)	4
EN 1400	Composition	4
IS 1115	Tackling a Wicked Problem	4
Credits		15
Spring		
MA 2700	Logic, Proofs, and Axiomatic Systems (WRCO)	3
MA 2560	Calculus II (QRCO)	4
CTDI (https://coursecatalog.plymouth.edu/general-education/#CTDI)	Creative Thought Direction	4
PPDI (https://coursecatalog.plymouth.edu/general-education/#PPDI)	Past and Present Direction	4
Credits		15
Year Two		
Fall		
MA 3510	Differential Equations	3
CS 2370	Introduction to Programming	4
PH 2410	University Physics I	3
PH 2430	University Physics Laboratory I	1
SSDI (https://coursecatalog.plymouth.edu/general-education/#SSDI)	Self and Society Direction	4
Credits		15
Spring		
MA 3540	Calculus III	4
CS 2381	Data Structures and Intermediate Programming	4
Directions (choose from CTDI, PPDI, SSDI)		4
GACO	Foreign Language	3
Credits		15
Year Three		
Fall		
MA 3355	Introduction to Mathematical Modeling (TECO)	4
CS 3600	Database Management Systems	4
MT 2110	Introduction to Atmospheric Sciences	3
MT 2230	Introduction to Meteorological Analysis	1

Elective		3
Credits		15
Spring		
MA 3120	Linear Algebra	3
MT 3230	Atmospheric Thermodynamics	3
CS 3221	Algorithm Analysis	4
WECO	Wellness Connection	3
Elective		3
Credits		16
Year Four		
Fall		
MA 4510 or CJ 3155	Introduction to Analysis or Society, Ethics, and the Law (DICO,INCO)	3-4
CS 4520 or CJ 3155	CyberEthics (DICO,INCO,WRCO) or Society, Ethics, and the Law (DICO,INCO)	3-4
MT 2800 or MT 3300 or MT 3710	Climatology (GACO) or Synoptic Meteorology I or Meteorological Instruments and Observations (WRCO)	4
Elective		3-4
Credits		13-16
Spring		
MA 3280 or MA 3500	Regression Analysis or Probability and Statistics for Scientists	3
MT 2800 or MT 3300 or MT 3710	Climatology (GACO) or Synoptic Meteorology I or Meteorological Instruments and Observations (WRCO)	3
Elective		9
Credits		15
Total Credits		120

Weather Analysis Option of BS in Computational and Applied Mathematical Sciences

Check all course descriptions for prerequisites before planning course schedule. Course sequence is suggested but not required.

Please use the following sequence for as an even start year:

Course	Title	Credits
Year One		
Fall		
MA 2400	Introduction to Formal Mathematics	3
MA 2550	Calculus I (QRCO)	4
EN 1400	Composition	4
IS 1115	Tackling a Wicked Problem	4
Credits		15
Spring		
MA 2700	Logic, Proofs, and Axiomatic Systems (WRCO)	3
MA 2560	Calculus II (QRCO)	4

CTDI (https://coursecatalog.plymouth.edu/general-education/#CTDI)	Creative Thought Direction	4
PPDI (https://coursecatalog.plymouth.edu/general-education/#PPDI)	Past and Present Direction	4
Credits		15
Year Two		
Fall		
MA 3510	Differential Equations	3
CS 2370	Introduction to Programming	4
PH 2410	University Physics I	3
PH 2430	University Physics Laboratory I	1
SSDI (https://coursecatalog.plymouth.edu/general-education/#SSDI)	Self and Society Direction	4
Credits		15
Spring		
MA 3540	Calculus III	4
CS 2381	Data Structures and Intermediate Programming	4
Directions (choose from CTDI, PPDI, SSDI)		4
GACO	Global Awareness Connection	3
Credits		15
Year Three		
Fall		
MA 4510	Introduction to Analysis	3
CS 3600	Database Management Systems	4
MT 2110	Introduction to Atmospheric Sciences	3
MT 2230	Introduction to Meteorological Analysis	1
Elective		3
Credits		14
Spring		
MA 3120	Linear Algebra	3
MT 3230	Atmospheric Thermodynamics	3
MA 3280 or MA 3500	Regression Analysis or Probability and Statistics for Scientists	3
WECO	Wellness Connection	3
Elective		3
Credits		15
Year Four		
Fall		
MA 3355	Introduction to Mathematical Modeling (TECO)	4
CS 4520 or CJ 3155	CyberEthics (DICO,INCO,WRCO) or Society, Ethics, and the Law (DICO,INCO)	3-4
MT 2800 or MT 3300 or MT 3710	Climatology (GACO) or Synoptic Meteorology I or Meteorological Instruments and Observations (WRCO)	4

Elective		3-4
Credits		14-16
Spring		
MT 2800 or MT 3300 or MT 3710	Climatology (GACO) or Synoptic Meteorology I or Meteorological Instruments and Observations (WRCO)	3-4
CS 3221	Algorithm Analysis	4
Elective		9
Credits		16-17
Total Credits		120