

III. Computing, Mathematics, and Physics

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Students with Advanced Placement credit:

Requirements for the following courses can be met through Advanced Placement exam credit. The College awards the following credit for AP scores:

AP Subject	AP Exam Score	Hrs Credit	Messiah University Courses Credited
Computer Science A	3,4,5	3	CIS 181
Math: Calculus AB	3	3	MATH 108
	4, 5	4	MATH 111 (enroll in 112)
Math: Calculus BC	3 with AB subscore 3	3	MATH 108
	3 with AB subscore 4,5	4	MATH 111 (enroll in 112)
	4,5	8	MATH 111, 112 (enroll in 211)
Physics 1	3, 4, 5	4	PHYS 201* (enroll in 202)
Physics 2	3, 4, 5	4	PHYS 202*
Physics C: Mechanics	3,4,5	4	PHYS 211 (enroll in PHYS 212)
Physics C: Electricity & Magnetism	3,4,5	4	PHYS 212
Statistics	3,4,5	3	STAT 269 (enroll in STAT 291)** or STAT 281

* Mathematics majors are required to take the PHYS 211/212 sequence rather than PHYS 201/202. However, if a student in the mathematics major receives AP credit for both PHYS 201 and 202, the 211/212 requirements are waived.

** AP Statistics is not a calculus-based course or exam. Mathematics majors who receive AP credit for Statistics are still required to take STAT 291 for the major requirement.

Actuarial Science (B.S.) (Odd fall start)

8 Semester Plan

Course #	Course name	Credits	Course #	Course name	Credits
First Year – Fall (Odd)			First Year – Spring (Even)		
COMM 105	Oral Communication (QuEST)	3	IDCR 151	Created and Called (QuEST)	3
MATH 111	Calculus I with lab	4	MATH 112	Calculus II with lab	4
MATH 196*	Mathematics Seminar	2	MATH 198**	Introduction to Proof	2
FYS 101	First-Year Seminar (QuEST)	3	ACCT 131	Survey of Accounting	3
Varies	Language I (QuEST)	3	Varies	Language II (QuEST)	3
			ECON 120	Macroeconomics	3
		TOTAL			15
			TOTAL 18		
Sophomore –Fall (Even)			Sophomore – Spring (Odd)		
MATH 211	Calculus III with lab	4	MATH 261**	Linear Algebra	3
STAT 291*	Probability and Statistics	3	Varies	Language III/Cross Cultural (QuEST)	3
ENGL 1xx	Literature (QuEST)	3	Varies	Philosophy or Religion (QuEST)	3
ECON 220	Microeconomics	3	STAT 292**	Inferential Statistics	3
BIBL 201/203/204	Bible (QuEST)	3	CIS 181	Computer Programming I	3
		TOTAL			16
			TOTAL 15		
Junior – Fall (Odd)			Junior – Spring (Even)		
FINA 305	Financial Management	3	THEO 205-238	Christian Beliefs (QuEST)	3
HIST 1xx	US/European History (QuEST)	3	INTE 391	Internship	3
STAT 417*	Mathematical Statistics (odd falls)	3	STAT 324**	Advanced Statistical Methods (even springs)	3
PHYS 211	General Physics I with lab	4	Varies	Arts (QuEST)	3
Varies	Free Elective	3	Varies	Free Elective	3
		TOTAL			16
			TOTAL 15		
Senior – Fall (Even)			Senior – Spring (Odd)		
MATH 350*	Mathematics of Finance (even falls)	3	MATH 412**	Real Analysis	3
IDNW 2xx	Non-western Studies (QuEST)	2-3	MATH 496**	Mathematics Capstone	2
WELL 1xx	Wellness (QuEST)	1	Varies	Ethics/WV/Pluralism (QuEST)	3
MATH 362*	Algebraic Structures	3	Varies	Free Elective	3
FINA 307/351/405	Upper-Level Finance Elective	3	Varies	Free Elective	3
Varies	Free Elective	3			
		TOTAL			15-16
			TOTAL 14		

* Fall-only courses

** Spring-only courses

NOTE: The major includes 13-14 free elective credits. Students should consider a minor in a related area to make best use of the elective credits and additional space in this plan. Minors require at least 18 credits (12 must be unique credits that are not required for major).

Actuarial Science (B.S.) (Even fall start)

8 Semester Plan

Course #	Course name	Credits	Course #	Course name	Credits
First Year – Fall (Even)			First Year – Spring (Odd)		
COMM 105	Oral Communication (QuEST)	3	IDCR 151	Created and Called (QuEST)	3
MATH 111	Calculus I with lab	4	MATH 112	Calculus II with lab	4
MATH 196*	Mathematics Seminar	2	MATH 198**	Introduction to Proof	2
FYS 101	First-Year Seminar (QuEST)	3	ACCT 131	Survey of Accounting	3
Varies	Language I (QuEST)	3	Varies	Language II (QuEST)	3
			ECON 120	Macroeconomics	3
		TOTAL			15
			TOTAL 18		
Sophomore –Fall (Odd)			Sophomore – Spring (Even)		
MATH 211	Calculus III with lab	4	MATH 261**	Linear Algebra	3
STAT 291*	Probability and Statistics	3	Varies	Language III/Cross Cultural (QuEST)	3
ENGL XXX	Literature (QuEST)	3	Varies	Philosophy or Religion (QuEST)	3
ECON 220	Microeconomics	3	STAT 292**	Inferential Statistics	3
BIBL 201/203/204	Bible (QuEST)	3	CIS 181	Computer Programming I	3
		TOTAL			16
			TOTAL 15		
Junior – Fall (Even)			Junior – Spring (Odd)		
FINA 305	Financial Management	3	THEO 205-238	Christian Beliefs (QuEST)	3
HIST	US/European History (QuEST)	3	INTE 391	Internship	3
MATH 350*	Mathematics of Finance (even falls)	3	Varies	Art, Music, Theater or Dance (QuEST)	3
PHYS 211	General Physics I with lab	4	Varies	Free Elective	3
Varies	Free Elective	3	Varies	Free Elective	3
		TOTAL			15
			TOTAL 15		
Senior – Fall (Odd)			Senior – Spring (Even)		
STAT 417*	Mathematical Statistics (odd falls)	3	MATH 412**	Real Analysis	3
IDNW 2XX	Non-western Studies (QuEST)	2-3	MATH 496**	Mathematics Capstone	2
WELL 1XX	Wellness (QuEST)	1	STAT 324**	Advanced Statistical Methods (even springs)	3
MATH 362*	Algebraic Structures	3	Varies	Ethics/WV/Pluralism (QuEST)	3
FINA 307/351/405	Upper-Level Finance Elective	3	Varies	Free Elective	3
Varies	Free Elective	3			
		TOTAL			15-16
			TOTAL 14		

*Fall-only courses

**Spring-only courses

NOTE: The major includes 13-14 free elective credits. Students should consider a minor in a related area to make best use of the elective credits and additional space in this plan. Minors require at least 18 credits (12 must be unique credits that are not required for major).

Computer and Information Science (B.S.) Computer Science Concentration 8-semester Plan

Course #	Course name	Credits	Course #	Course name	Credits
First Year – Fall			First Year – Spring		
CIS 180	Introduction to CIS	3	CIS 284	Computer Programming II	3
CIS 181	Computer Programming I	3	IDCR 151	Created and Called for Community (QuEST)	3
IDFY 101	First Year Seminar (QuEST)	3	COMM 105	Oral Communication (QuEST)	3
Varies	1 st language requirement (QuEST)	3	Varies	2 nd language requirement (QuEST)	3
Varies	Philosophy and Religion (QuEST)	3	SOCI/HIST	Social Science / History 1 of 2 (QuEST)	3
TOTAL		15	TOTAL		15
Sophomore – Fall			Sophomore – Spring		
CIS 385*	Data Structures and Algorithms	3	MATH 180**	Discrete Math	3
MATH 111	Calculus I	3	PHYS 202**	Introductory Physics II §	3
Varies	3 rd semester of language or cross-cultural (QuEST)	3	SOCI/HIST	Social Science / History 2 of 2 (QuEST)	3
BIBL 20x	Knowledge of the Bible (QuEST)	3	THEO 2xx	Christian Beliefs (QuEST)	3
ENGL xxx	Literature (QuEST)	3	CIS 381	Information Systems and Managers	3
TOTAL		15	TOTAL		15
Junior – Fall			Junior – Spring		
CIS 332*	Database Concepts	3	CIS 411**	Systems Analysis and Design Concepts	3
CIS 384*	Elements of Computer Systems	3	CIS 482**	Organization of Programming Languages	3
STAT 291*	Probability and Statistics §	3	IDNW xxx	Non-Western Studies (QuEST)	3
Varies	Free Elective	3	CIS 416** or CIS xxx	OS & Comp Architecture (odd spring) or CIS elective	3
Varies	Free Elective	3	Varies	Free Elective	3
WELL xxx	Wellness (QuEST)	1			
TOTAL		16	TOTAL		15
Senior – Fall			Senior – Spring		
INTE 394	Internship	4	IDS xxx	Ethics / Pluralism / World Views (QuEST)	3
CIS 471*	Application Development I	3	CIS 472**	Application Development II	3
Varies	Art, Music, Theater or Dance (QuEST)	3	CIS 416** or CIS xxx	OS & Comp Architecture (odd spring) or CIS elective	3
Varies	Free Elective	3	Varies	Free elective	3
Varies	Free Elective	3	Varies	Free elective	3
TOTAL		16	TOTAL		15

*Fall-only courses

**Spring-only courses

§ Concentration choice option: other courses in other semesters may fulfill this same requirement

Computer and Information Science (B.S.) Software Development Concentration 8-semester Plan

Course #	Course name	Credits	Course #	Course name	Credits
First Year – Fall			First Year – Spring		
CIS 180	Introduction to CIS	3	CIS 191**	Web Development I: Client Side	3
CIS 181	Computer Programming I	3	CIS 284	Computer Programming II	3
IDFY 101	First Year Seminar (QuEST)	3	IDCR 151	Created and Called for Community (QuEST)	3
Varies	1 st language requirement (QuEST)	3	COMM 105	Oral Communication (QuEST)	3
SOCI/HIST	Social Science / History 1 of 2 (QuEST)	3	Varies	2 nd language requirement (QuEST)	3
TOTAL		15	TOTAL		15
Sophomore – Fall			Sophomore – Spring		
CIS 283*	Business Systems Applications	3	CIS 381	Information Systems and Managers	3
CIS 291*	Web Development II: Server Side	3	MATH 180**	Discrete Math	3
CIS 251* or CIS 255* or CIS 384	Hardware and Software or NIX System Admin & Security or Hardware and Software	3	MATH 111 or STAT 269 or STAT 281	Calculus I or Introductory Statistics or Applied Statistics for Management	3-4
Varies	3 rd semester of language or cross-cultural (QuEST)	3	Varies	Lab Science (QuEST)	3
ENGL xxx	Literature (QuEST)	3	PHIL/RELI xxx	Philosophy and Religion (QuEST)	3
WELL xxx	Wellness (QuEST)	1			
TOTAL		16	TOTAL		15-16
Junior – Fall			Junior – Spring		
CIS 332*	Database Concepts	3	CIS 411**	Systems Analysis and Design Concepts	3
CIS 385	Data Structures and Algorithms	3	CIS 482**	Organization of Programming Languages	3
CIS xxx	CIS Elective	3	SOCI/HIST	Social Science / History 2 of 2 (QuEST)	3
Varies	Free Elective	3	THEO 2xx	Christian Beliefs (QuEST)	3
Varies	Free Elective	3	Varies	Art, Music, Theater or Dance (QuEST)	3
TOTAL		15	TOTAL		15
Senior – Fall			Senior – Spring		
INTE 394	Internship	3	CIS 472**	Application Development II	3
CIS 335*	Software Engineering	3	IDS xxx	Ethics / Pluralism / World Views (QuEST)	3
CIS 471*	Application Development I	3	Varies	Free Elective	3
IDNW xxx	Non-Western Studies (QuEST)	2-3	Varies	Free Elective	3
BIBL 20x	Knowledge of the Bible (QuEST)	3	Varies	Free Elective	3
TOTAL		14-15	TOTAL		15

*Fall-only courses

**Spring-only courses

Computer and Information Science (B.S.) Web Development Concentration

8-semester Plan

Course #	Course name	Credits	Course #	Course name	Credits
First Year – Fall			First Year – Spring		
CIS 180	Introduction to CIS	3	CIS 191**	Web Development I: Client Side	3
CIS 181	Computer Programming I	3	IDCR 151	Created and Called for Community (QuEST)	3
IDFY 101	First Year Seminar (QuEST)	3	COMM 105	Oral Communication (QuEST)	3
Varies	1 st language requirement (QuEST)	3	Varies	2 nd language requirement (QuEST)	3
SOCI/HIST	Social Science / History 1 of 2 (QuEST)	3	ENGL xxx	Literature (QuEST)	3
TOTAL		15	TOTAL		15
Sophomore – Fall			Sophomore – Spring		
CIS 255*	NIX System Administration and Security	3	ART xxx	Art course approved for concentration (1 of 2) [^]	3
CIS 291*	Web Development II: Server Side	3	MRKT 130	Marketing Principles	3
BUSA 120	Principles of Management	3	Varies	Concentration elective† (1 of 2)	3-4
Varies	3 rd semester of language or cross-cultural (QuEST)	Varies	Varies	Lab Science (QuEST)	3-4
SOCI/HIST	Social Science / History 2 of 2 (QuEST)	3	PHIL/RELI xxx	Philosophy and Religion (QuEST)	3
TOTAL		15	TOTAL		15-17
Junior – Fall			Junior – Spring		
CIS 332*	Database Concepts	3	CIS 381	Information Systems and Managers	3
Varies	Concentration elective† (2 of 2)	3	CIS 411** or CIS 343**	Systems Analysis and Design Concepts or E-Commerce (odd spring)	3
ART xxx	Art course approved for conc. (2 of 2) [^]	3	Varies	Concentration elective (3 or 3) or Free elective	3
IDS xxx	Ethics / Pluralism / World Views (QuEST)	3	THEO 2xx	Christian Beliefs (QuEST)	3
BIBL 20x	Knowledge of the Bible (QuEST)	3	Varies	Free elective	3
WELL xxx	Wellness (QuEST)	1			
TOTAL		16	TOTAL		15-16
Senior – Fall			Senior – Spring		
CIS 471	Application Development I*	3	CIS 472**	Application Development II	3
CIS xxx §	Concentration CIS elective §	3	CIS 411** or CIS 343**	Systems Analysis and Design Concepts or E-Commerce (odd spring)	3
INTE 394	Internship	4	IDNW xxx	Non-Western Studies (QuEST)	2-3
Varies	Free elective	3	Varies	Free elective	3
Varies	Free elective	3	Varies	Free elective	3
TOTAL		16	TOTAL		14-15

*Fall-only courses

*Spring-only courses

§ 6 credits from CIS 283, 284, 287 or 315 fulfill concentration requirements

†6-10 credits of concentration electives. Option 1: CIS 150 and CIS 257, Option 2: ACCT 141 and BUSA 380, Option 3: (MATH 107, 108 or 111) and (BUSA 362 or MRKT 33).

[^]6 credits from ART 112, 217, 237, 336 or 337 fulfill concentration requirements.

Computer Science with Teaching Certification (B.A.) (Odd fall start)
8-Semester Plan

Course #	Course name	Credits	Course #	Course name	Credits
First Year – Fall (Odd)			First Year – Spring (Even)		
CIS 180	Intro to CIS	3	CIS 284	Programming II	3
CIS 181	Programming I	3	CIS 150	Intro to Cybersecurity	3
FYS 101^	First-Year Seminar (QuEST/major)	3	IDCR 151	Created and Called (QuEST)	3
COMM 105^	Oral Communication (QuEST/major)	3	CIS 191	Web Development: Client Side	3
Varies	Language I (QuEST)	3	WELL 1XX	Wellness (QuEST)	1
			Varies	Language II (QuEST)	3
			<i>Submit the three required security clearances (FBI, Child Abuse, Criminal) by 3/31.</i>		
TOTAL		15	TOTAL		16
Sophomore –Fall (Even)			Sophomore – Spring (Odd)		
CIS 415*	Data Communications and Networking (even Falls)	3	Varies	Language III or Philosophy or Religion or Cross Cultural (QuEST)	3
CIS 291*	Web Development: Server Side	3	MATH 180**	Discrete Mathematics	3
CIS 283*	Business Systems Applications	3	EDUC 208	Teaching English Language Learners	3
STAT 269	Introductory Statistics	3	EDSP 207§	Introduction to Special Education	3
BIBL 2xx	Bible (QuEST)	3	TEP 210§	Sophomore Field Experience	0
			EDUC 203§	Educational Psychology	3
			ENG 122-176^	Literature (QuEST/major)	3
			<i>Submit Teacher Education Program application electronically by 3/31. Clearances completed last year must be <1 year old.</i>		
TOTAL		15	TOTAL		18
Junior – Fall (Odd)			Junior – Spring (Even)		
CIS 332*	Database Concepts	3	CIS 411**	Systems Analysis & Design Concepts	3
CIS 384*	Elements of Computer Systems	3	Varies	Arts (QuEST)	3
CIS 251*	Hardware & Software (odd Falls)	3	MATH 307**	Teaching Secondary Math & Comp.Science	2
CIS 385	Data Structure and Algorithms	3	EDUC 331§§	Instruct. Design & Assessment	3
EDUC 346	Socio-Cultural Perspectives on Education	3	EDSP 307§§	Inclusion Practices	3
HDFS 311	Adolescent Development	3	TEP 310§§	Junior Field Experience	0
			Varies	Lab Science (QuEST)	3-4
			<i>Submit Professional Semester application electronically by 1/15.</i>		
TOTAL		18	TOTAL		17-18
Senior – Fall (Even)			Senior – Spring (Odd)		
	<i>Professional Semester</i>		CIS 381	Information Systems and Managers	3
TEP 407 §§§	Student Teaching Seminar	1	Varies	Philosophy or Religion	3
TEP 410 §§§	Pre-student Teaching	0	IDNW 2XX	Non-western Studies (QuEST)	2-3
TEP 435 §§§	Student Teaching	9	THEO 205-238	Christian Beliefs (QuEST)	3
EDUC 420 §§§	Professional Issues in Education	2	Varies	History (QuEST)	3
			<i>Take Praxis II Computer Science exam (5651)</i>		
TOTAL		12	TOTAL		14-15

* Fall-only courses, ** Spring-only courses

^Course must be completed prior to applying for the teacher education program. Admission to the TEP is required for junior level field experience and related courses.

§ EDSP 207, TEP 210, EDUC 203 must be taken concurrently.

§§ EDUC 331, EDSP 307, TEP 310 must be taken concurrently.

§§§ TEP 407, TEP 410, TEP 435, EDUC 420 must be taken concurrently. No other course may be taken during the professional semester.

Computer Science with Teaching Certification (B.A.) (Even fall start)
8-Semester Plan

Course #	Course name	Credits	Course #	Course name	Credits
First Year – Fall (Even)			First Year – Spring (Odd)		
CIS 180	Intro to CIS	3	CIS 284	Programming II	3
CIS 181	Programming I	3	CIS 150	Intro to Cybersecurity	3
FYS 101^	First-Year Seminar (QuEST)	3	IDCR 151	Created and Called (QuEST)	3
COMM 105^	Oral Communication	3	CIS 191	Web Development: Client Side	3
Varies	Language I (QuEST)	3	WELL 1XX	Wellness (QuEST)	1
			Varies	Language II (QuEST)	3
			<i>Submit the three required security clearances (FBI, Child Abuse, Criminal) by 3/31.</i>		
TOTAL		15	TOTAL		16
Sophomore –Fall (Odd)			Sophomore – Spring (Even)		
CIS 251*	Hardware & Software (odd Falls)	3	Varies	Language III or Philosophy or Religion or Cross Cultural (QuEST)	3
CIS 291*	Web Development: Server Side	3	Varies	Arts (QuEST)	3
CIS 283*	Business Systems Applications	3	EDUC 208	Teaching English Language Learners	3
STAT 269	Introductory Statistics	3	EDSP 207§	Introduction to Special Education	3
BIBL 2xx	Bible (QuEST)	3	TEP 210§	Sophomore Field Experience	0
			EDUC 203§	Educational Psychology	3
			ENG 122-176^	Literature	3
			<i>Submit Teacher Education Program application electronically by 3/31. Clearances completed last year must be <1 year old.</i>		
TOTAL		15	TOTAL		18
Junior – Fall (Even)			Junior – Spring (Odd)		
CIS 332*	Database Concepts	3	CIS 411**	Systems Analysis & Design Concepts	3
CIS 384*	Elements of Computer Systems	3	MATH 180**	Discrete Mathematics	3
CIS 415*	Data Communications and Networking (even Falls)	3	MATH 307**	Teaching Secondary Math & Comp.Science	2
Varies	Philosophy or Religion	3	EDUC 331§§	Instruct. Design & Assessment	3
EDUC 346	Socio-Cultural Perspectives on Education	3	EDSP 307§§	Inclusion Practices	3
HDFS 311	Adolescent Development	3	TEP 310§§	Junior Field Experience	0
			Varies	Lab Science (QuEST)	3-4
			<i>Submit Professional Semester application electronically by 1/15.</i>		
TOTAL		18	TOTAL		17-18
Senior – Fall (Odd)			Senior – Spring (Even)		
<i>Professional Semester</i>			CIS 381	Information Systems and Managers	3
TEP 407 §§§	Student Teaching Seminar	1	CIS 385	Data Structure and Algorithms	3
TEP 410 §§§	Pre-student Teaching	0	IDNW 2XX	Non-western Studies (QuEST)	2-3
TEP 435 §§§	Student Teaching	9	THEO 205-238	Christian Beliefs (QuEST)	3
EDUC 420 §§§	Professional Issues in Education	2	Varies	History (QuEST)	3
			<i>Take Praxis II Computer Science exam (5651)</i>		
TOTAL		12	TOTAL		14-15

* Fall-only courses, ** Spring-only courses

^Course must be completed prior to applying for the teacher education program. Admission to the TEP is required for junior level field experience and related courses.

§ EDSP 207, TEP 210, EDUC 203 must be taken concurrently.

§§ EDUC 331, EDSP 307, TEP 310 must be taken concurrently.

§§§ TEP 407, TEP 410, TEP 435, EDUC 420 must be taken concurrently. No other course may be taken during the professional semester.

Cybersecurity (B.S.) (Odd fall start)
8 Semester Plan

Course #	Course Name	Credits	Course #	Course Name	Credits
First Year – Fall (Odd)			First Year – Spring (Even)		
CIS 150	Introduction to Cybersecurity	3	CIS 284	Programming II	3
CIS 180	Introduction to CIS	3	COMM 105	Oral Communication (QuEST)	3
CIS 181	Programming I	3	IDCR 151	Created and Called for Community (QuEST)	3
IDFY 101	First Year Seminar (QuEST)	3	Varies	2 nd Language (QuEST)	3
Varies	1 st Language (QuEST)	3	Varies	Philosophy or Religion (QuEST)	3
Total		15	Total		15
Sophomore – Fall (Even)			Sophomore – Spring (Odd)		
CIS 255*	NIX System Administration & Security	3	MATH 180**	Discrete Math	3
CIS 332*	Database Concepts	3	CIS 381	Information Systems and Managers	3
STAT 2xx	Statistics	3	CIS 385	Data Structures and Algorithms	3
Varies	3 rd Language or cross-cultural (QuEST)	3	ENGL xxx	Literature (QuEST)	3
Varies	History (QuEST)	3	BIBL 2xx	Bible (QuEST)	3
Total		15	Total		15
Junior – Fall (Odd)			Junior – Spring (Even)		
CIS 371*	Database Security (odd Falls)	3	CIS 257**	Information Assurance (even Springs)	3
CIS 484*	Ethical Hacking (odd Falls)	3	CIS 474**	Digital Forensics (even Springs)	3
Varies	Lab Science (QuEST)	3-4	Varies	Ethics/World Views/Pluralism (QuEST)	3
Varies	Internship† or free elective	2-6	Varies	Social Science (QuEST)	3
WELL xxx	Wellness (QuEST)	1	Varies	Internship† or free elective	2-6
Total		13-17	Total		14-18
Senior – Fall (Even)			Senior – Spring (Odd)		
CIS 335*	Software Engineering	3	CIS 411**	System Analysis & Design Concepts	3
CIS 415*	Data Communications and Networking (even Falls)	3	CIS 455**	Network Security (odd Springs)	3
Varies	Internship† or free elective	2-6	ART xxx	Arts (QuEST)	3
Varies	Christian Beliefs (QuEST)	3	Varies	Free Elective	3
Varies	Free Elective	3	Varies	Internship† or free elective	2-6
Total		14-18	Total		14-18

†4 credits of INTE 391 or INTE 394 can be taken any semester Junior or Senior year

*Fall-only courses

**Spring-only courses

Cybersecurity (B.S.) (Even fall start)
8 Semester Plan

Course #	Course Name	Credits	Course #	Course Name	Credits
First Year – Fall (Even)			First Year – Spring (Odd)		
CIS 150	Introduction to Cybersecurity	3	CIS 284	Programming II	3
CIS 180	Introduction to CIS	3	COMM 105	Oral Communication (QuEST)	3
CIS 181	Programming I	3	IDCR 151	Created and Called for Community (QuEST)	3
IDFY 101	First Year Seminar (QuEST)	3	Varies	2 nd Language (QuEST)	3
Varies	1 st Language (QuEST)	3	Varies	Philosophy or Religion (QuEST)	3
Total		15	Total		15
Sophomore – Fall (Odd)			Sophomore – Spring (Even)		
CIS 255*	NIX System Administration & Security	3	MATH 180**	Discrete Math	3
CIS 332*	Database Concepts	3	CIS 257**	Information Assurance (even Springs)	3
STAT 2xx	Statistics	3	CIS 385	Data Structures and Algorithms	3
Varies	3 rd Language or cross-cultural (QuEST)	3	ENGL xxx	Literature (QuEST)	3
Varies	History (QuEST)	3	BIBL 2xx	Bible (QuEST)	3
Total		15	Total		15
Junior – Fall (Even)			Junior – Spring (Odd)		
CIS 335*	Software Engineering	3	CIS 381	Information Systems and Managers	3
CIS 415*	Data Communications and Networking (even Falls)	3	CIS 455**	Network Security (odd Springs)	3
Varies	Lab Science (QuEST)	3-4	ART xxx	Arts (QuEST)	3
Varies	Internship† or free elective	2-6	Varies	Social Science (QuEST)	3
WELL xxx	Wellness (QuEST)	1	Varies	Internship† or free elective	2-6
Total		13-17	Total		14-18
Senior – Fall (Odd)			Senior – Spring (Even)		
CIS 371*	Database Security (odd Falls)	3	CIS 411**	System Analysis & Design Concepts	3
CIS 484*	Ethical Hacking (odd Falls)	3	CIS 474**	Digital Forensics (even Springs)	3
Varies	Internship† or free elective	2-6	Varies	Internship† or free elective	2-6
Varies	Christian Beliefs (QuEST)	3	Varies	Ethics/World Views/Pluralism (QuEST)	3
Varies	Free Elective	3	Varies	Free Elective	3
Total		14-18	Total		14-18

† 4 credits of INTE 391 or INTE 394 can be taken any semester Junior or Senior year

*Fall-only courses

**Spring-only courses

Digital Media (B.A.) Mobile Application and Game Design Concentration
8-semester Plan

Course #	Course name	Credits	Course #	Course name	Credits
First Year – Fall			First Year – Spring		
CIS 180	Introduction to CIS	3	CIS 191**	Web Development: Client Side	3
CIS 181	Computer Programming I	3	CIS 284	Computer Programming II	3
COMM 203	Basic Video and Editing Techniques	3	IDCR 151	Created and Called for Community (QuEST)	3
IDFY 101	First Year Seminar (QuEST)	3	COMM 105	Fundamentals of Oral Communication (QuEST)	3
Varies	1 st semester of language (QuEST)	3	Varies	2 nd semester of language (QuEST)	3
TOTAL		15	TOTAL		15
Sophomore – Fall			Sophomore – Spring		
CIS 287* or CIS 291*	Introduction to Game Design (even falls) OR Web Development: Server Side	3	ART 171, 182, 251 or 282	Found. of Drawing, Color & Design, Photography OR Form, Space & Media	3
ART 236 or 237	Design Thinking and Visual Culture OR Typography & Visual Communication	3	ARTH 210** or COMM 321, 327	Topics in NW Art OR Latin American Cinema OR Global Indigenous Media	3
DIGM 105**	Foundations in Creative Digital Media	3	Varies	Social Sciences & History 1 (QuEST)	3
COMM 217	Introduction to Film	3	COMM 382	History and Theory of Digital Media	3
Varies	3 rd semester of language or cross-cultural (QuEST)	3	BIBL 20x	Knowledge of the Bible (QuEST)	3
DIGM 210* or DIGM 215*	Video and Church Media Seminar (odd falls) OR Game and Art design Seminar (even falls)	1	WELL 1xx	Wellness (QuEST)	1
TOTAL		16	TOTAL		16
Junior – Fall			Junior – Spring		
CIS 287* or CIS 291*	Introduction to Game Design (even falls) OR Web Development: Server Side	3	CIS 315** or CIS 381	Intro to Mobile App Design (even falls) OR Information Systems and Managers	3
ART 217, 336, 352 or 431	Digital Imaging, Interactive Design, Digital Photo, OR Motion Design	3	MUCM 353**	Sound Design	3
ENGL 1xx	Literature (QuEST)	3	Varies	Laboratory Science (QuEST)	3-4
Varies	Social sciences & History 2 (QuEST)	3	Varies	Philosophy or Religion (QuEST)	3
THEO 2xx	Christian Beliefs (QuEST)	3	Varies	Free Elective	3
DIGM 210* or DIGM 215*	Video and Church Media Seminar (odd falls) or Game and Art design Seminar (even falls)	1			
TOTAL		16	TOTAL		15-16
Senior – Fall			Senior – Spring		
DIGM 490*	Senior Seminar and Project	4	CIS 315** or CIS 381	Intro to Mobile App Design (even falls) OR Information Systems and Managers	3
Varies	Digital Media Elective from list	3	Varies	Digital Media Elective from list	3
Varies	Ethics/Pluralism/World Views (QuEST)	3	Varies	Free Elective	3
Varies	Free Elective	3	Varies	Free Elective	3
Varies	Free Elective	3	Varies	Free Elective	3
TOTAL		16	TOTAL		15

*Fall-only courses

**Spring-only courses

Mathematics (B.A.)

8-semester Plan

Course #	Course name	Credits	Course #	Course name	Credits
First Year – Fall			First Year – Spring		
MATH 111	Calculus I with lab	4	MATH 112	Calculus II with lab	4
MATH 196*	Mathematics Seminar	2	MATH 198**	Introduction to Mathematical Proof	2
FYS 101	First-Year Seminar (QuEST)	3	PHYS 211	General Physics I with lab	4
COMM 105	Oral Communication (QuEST)	3	IDCR 151	Created and Called (QuEST)	3
Varies	Language I (QuEST)	3	Varies	Language II (QuEST)	3
TOTAL		15	TOTAL		16
Sophomore – Fall			Sophomore – Spring		
MATH 211	Calculus III with lab	4	MATH 261**	Linear Algebra	3
STAT 291*	Probability & Statistics	3	STAT 292**	Inferential Statistics	3
CIS 181	Computer Programming I	3	ECON 120	Principles of Macroeconomics	3
PHYS 212*	General Physics II with lab	4	Varies	Language III or Cross Cultural (QuEST)	3
ENGL XXX	Literature (QuEST)	3	Varies	Philosophy or Religion (QuEST)	3
TOTAL		17	TOTAL		15
Junior – Fall			Junior – Spring		
MATH 362*	Algebraic Structures	3	MATH 412**	Real Analysis	3
MATH 308*	Differential Equations	3	MATH/STAT 3XX/4XX	Math/Stat Elective (Upper Level)	3
HIST XXX	US/European History (QuEST)	3	THEO 205-238	Christian Beliefs (QuEST)	3
BIBL 201/203/204	Bible (QuEST)	3	Varies	Art, Music, Theater or Dance (QuEST)	3
Varies	Free Elective	3	Varies	Electives	3
TOTAL		15	TOTAL		15
Senior – Fall			Senior – Spring		
MATH/STAT 3XX/4XX	Math/Stat Elective (Upper Level)	3	MATH/STAT 3XX/4XX	Math/Stat Elective (Upper Level)	3
IDNW 2XX	Non-western Studies (QuEST)	2-3	MATH 496**	Mathematics Capstone	2
WELL 1XX	Wellness (QuEST)	1	Varies	Ethics/WV/Pluralism (QuEST)	3
Varies	Free Elective	3	Varies	Free Elective	3
Varies	Free Elective	3	Varies	Free Elective	3
Varies	Free Elective	3			
TOTAL		15-16	TOTAL		15

*Fall-only courses

**Spring-only courses

NOTE: The major includes 20-21 free elective credits. The CMP Department recommends a second major or minor(s) to make best use of the elective credits.

If interested in a Statistics minor, take STAT 291 in fall of first year, if possible (Pre-req: MATH 111).

Mathematics with Secondary Teaching Certification (B.A.)
8-semester Plan

Course #	Course name	Credits	Course #	Course name	Credits
First Year – Fall			First Year – Spring		
MATH 111 [^]	Calculus I with lab	4	MATH 112 [^]	Calculus II with lab	4
MATH 196 [*]	Mathematics Seminar	2	MATH 198 ^{**}	Introduction to Proof	2
FYS 101 [^]	First-Year Seminar (QuEST/major)	3	IDCR 151	Created and Called (QuEST)	3
COMM 105 [^]	Oral Communication (QuEST/major)	3	CIS 181 or CIS191	Computer Programming I or Web Development I: Client Side	3
Varies	Language I (QuEST)	3	ENGL 122-176 [^]	Literature (QuEST/major)	3
			Varies	Language II (QuEST)	3
			<i>Submit the three required security clearances (FBI, Child Abuse, Criminal) by 3/31.</i>		
TOTAL		15	TOTAL		18
Sophomore –Fall			Sophomore – Spring		
MATH 211	Calculus III with lab	4	MATH 261 ^{**}	Linear Algebra	3
STAT 291 [*]	Probability & Statistics	3	Varies	Language III or cross-cultural (QuEST)	3
EDUC 346	Sociocultural Perspectives on Education	3	PHYS 211	General Physics I with lab	4
EDSP 207 [§]	Introduction to Special Education	3	STAT 292 ^{**}	Inferential Statistics	3
EDUC 203 [§]	Educational Psychology	3	EDUC 208	Teaching English Language Learners	3
TEP 210 [§]	Sophomore Field Experience	0	<i>Submit Teacher Education Program application electronically by 3/31. Clearances completed last year must be <1 year old.</i>		
TOTAL		16	TOTAL		16
Junior – Fall			Junior – Spring		
MATH 362 [*]	Algebraic Structures	3	MATH 307 ^{**}	Secondary Math Instruction	2
MATH 308 [*]	Differential Equations	3	MATH 382 ^{**} or MATH 412 ^{**}	Geometry (odd Springs) or Real Analysis	3
PHYS 212 [*]	General Physics II with lab	4	EDUC 331 ^{§§}	Instruct. Design & Assessment	3
HIST XXX	US/European History (QuEST)	3	EDSP 307 ^{§§}	Inclusion Practices	3
BIBL 2xx	Bible (QuEST)	3	TEP 310 ^{§§}	Junior Field Experience	0
WELL 1XX	Wellness (QuEST)	1	HDFS 311	Adolescent Development	3
			Varies	Philosophy or Religion (QuEST)	3
			<i>Submit Professional Semester application electronically by 1/15.</i>		
TOTAL		17	TOTAL		17
Senior – Fall			Senior – Spring		
	<i>Professional Semester</i> ^{§§§}		MATH 382 ^{**} or MATH 412 ^{**}	Geometry (odd Springs) or Real Analysis	3
TEP 407 ^{§§§}	Student Teaching Seminar	1	MATH 496 ^{**}	Mathematics Capstone	2
TEP 410 ^{§§§}	Pre-student Teaching	0	IDNW 2XX	Non-western Studies (QuEST)	2-3
TEP 435 ^{§§§}	Student Teaching	9	THEO 205-238	Christian Beliefs (QuEST)	3
EDUC 420 ^{§§§}	Professional Issues in Education	2	Varies	Art, Music, Theater or Dance (QuEST)	3
			<i>Take Praxis II Mathematics (5161) exam.</i>		
TOTAL		12	TOTAL		13-14

*Fall-only courses, **Spring-only courses

[^]Course must be completed prior to applying for the teacher education program. Admission to the TEP is required for junior level field experience and related courses.

[§] EDSP 207, EDUC 203, TEP 210 must be taken concurrently.

^{§§} EDUC 331, EDSP 307, TEP 310 must be taken concurrently.

^{§§§} TEP 407, TEP 410, TEP 435, EDUC 420 must be taken concurrently. No other course may be taken during the professional semester.

Physics with Teaching Certification (B.A.) (Odd fall start)

8-semester Plan

Course #	Course name	Credits	Course #	Course name	Credits
First Year – Fall - Odd Year			First Year – Spring – Even Year		
MATH 111 [^]	Calculus I	4	MATH 112 [^]	Calculus II	4
CHEM 105	General Chemistry I	4	PHYS 211	General Physics I	4
IDFY 101 [^]	First year seminar (QuEST)	3	IDCR 151	Created and Called (QuEST)	3
COMM 105 [^]	Oral Communication (QuEST)	3	Varies	Language II (QuEST)	3
Varies	Language I (QuEST)	3	ENGL 122-176 [^]	Literature (QuEST)	3
			<i>Submit the three required security clearances (FBI, Child Abuse, Criminal) by 3/31.</i>		
TOTAL		17	TOTAL		17
Sophomore –Fall - Even Year			Sophomore – Spring - Odd Year		
MATH 211	Calculus III	4	ENGR 212 ^{**}	Programming For Engineers	3
PHYS 212 [*]	General Physics II	4	PHYS 251 ^{**}	Modern Physics	4
EDUC 346	Sociocultural Perspectives on Education	3	MATH 270	Advanced Math for the Sciences	3
PHIL 101 or 102	Philosophy (QuEST)	3	EDSP 207 §	Introduction to Special Education	3
Varies	Language III or Cross Cultural (QuEST)	3	EDUC 203 §	Educational Psychology	3
			TEP 210 §	Sophomore Field Experience	0
			WELL 1xx	Wellness (QuEST)	1
			<i>Submit Teacher Education Program application electronically by 3/31. Clearances completed last year must be <1 year old.</i>		
TOTAL		17	TOTAL		17
Junior – Fall - Odd Year			Junior – Spring - Even Year		
ENGR 367 [*]	Electromagnetics (odd Falls)	3	PHYS 317 ^{**}	Optics (even Springs)	3
ENGR 371	Thermodynamics	3	PHYS 402 ^{**}	Quantum Mechanics (even Springs)	3
STAT 291 [*] or ENGR 213	Statistics I or Engineering Statistics	3	SCIE 307 ^{**}	Teaching Lab Sciences in Secondary Education	2
EDUC 331 §§	Instructional Design & Assessment	3	HDFS 311	Adolescent Development	3
EDSP 307 §§	Inclusion Practices	3	HIST xxx	European or US History (QuEST)	3
TEP 310 §§	Junior Field Experience	0	BIBL 201/203/204	Bible (QuEST)	3
EDUC 208	Teaching English Language Learners	3	<i>Submit Professional Semester application electronically by 1/15.</i>		
TOTAL		18	TOTAL		17
Senior – Fall - Even Year			Senior – Spring - Odd Year		
<i>Professional Semester****</i>			PHYS 328 ^{**}	Classical Mechanics (odd Springs)	3
TEP 407 §§§	Student Teaching Seminar	1	PHYS 494 ^{**}	Senior Physics Seminar	2
TEP 410 §§§	Pre-student Teaching	0	CHEM 495	Senior Capstone: Natural Sciences	3
TEP 435 §§§	Student Teaching	9	THEO 223	Global Christian Theology (QuEST, both Non-western and Christian Belief)	3
EDUC 420 §§§	Professional Issues in Education	2	Varies	Art/Music/Dance (QuEST)	3
			<i>Take Praxis II exam.</i>		
TOTAL		12	TOTAL		14

* Fall-only courses, ** Spring-only courses

[^]Course must be completed prior to applying for the teacher education program. Admission to the TEP is required for junior level field experience and related courses.

§ EDSP 207, EDUC 203, TEP 210 must be taken concurrently.

§§ EDUC 331, EDSP 307, TEP 310 must be taken concurrently.

§§§ TEP 407, TEP 410, TEP 435, EDUC 420 must be taken concurrently. No other courses may be taken during the professional semester.

Physics with Teaching Certification (B.A.) (Even fall start)
8-semester Plan

Course #	Course name	Credits	Course #	Course name	Credits
First Year – Fall – Even Year			First Year – Spring – Odd Year		
MATH 111 [^]	Calculus I	4	MATH 112 [^]	Calculus II	4
CHEM 105	General Chemistry I	4	PHYS 211	General Physics I	4
IDFY 101 [^]	First year seminar (QuEST/major)	3	IDCR 151	Created and Called (QuEST)	3
COMM 105 [^]	Oral Communication (QuEST/major)	3	Varies	Language II (QuEST)	3
Varies	Language I (QuEST)	3	ENGL 122-176 [^]	Literature (QuEST/major)	3
			<i>Submit the three required security clearances (FBI, Child Abuse, Criminal) by 3/31.</i>		
TOTAL		17	TOTAL		17
Sophomore –Fall – Odd Year			Sophomore – Spring – Even Year		
MATH 211	Calculus III	4	ENGR 212 ^{**}	Programming For Engineers	3
PHYS 212 [*]	General Physics II	4	PHYS 251 ^{**}	Modern Physics	4
EDUC 346	Sociocultural Perspectives on Education	3	MATH 270	Advanced Math for the Sciences	3
PHIL 101 or 102	Philosophy (QuEST)	3	EDSP 207 §	Introduction to Special Education	3
Varies	Language III or Cross Cultural (QuEST)	3	EDUC 203 §	Educational Psychology	3
			TEP 210 §	Sophomore Field Experience	0
			<i>Submit Teacher Education Program application electronically by 3/31. Clearances completed last year must be <1 year old.</i>		
TOTAL		17	TOTAL		16
Junior – Fall – Even Year			Junior – Spring – Odd Year		
ENGR 371	Thermodynamics	3	PHYS 328 ^{**}	Classical Mechanics (odd Springs)	3
STAT 291 [*] or ENGR 213	Probability and Statistics or Engineering Statistics	3	SCIE 307 ^{**}	Teaching Lab Sciences in Secondary Education	2
EDUC 331 §§	Instructional Design & Assessment	3	HDFS 311	Adolescent Development	3
EDSP 307 §§	Inclusion Practices	3	HIST xxx	European or US History (QuEST)	3
TEP 310 §§	Junior Field Experience	0	BIBL 2xx	Bible (QuEST)	3
EDUC 208	Teaching English Language Learners	3	WELL 1xx	Wellness (QuEST)	1
ENGR 367†	Electromagnetics (odd Falls†)	3	<i>Submit Professional Semester application electronically by 1/15.</i>		
TOTAL		15	TOTAL		15
Senior – Fall – Odd Year			Senior – Spring – Even Year		
	<i>Professional Semester</i>		PHYS 317 ^{**}	Optics (even Springs)	3
TEP 407 §§§	Student Teaching Seminar	1	PHYS 402 ^{**}	Quantum Mechanics (even Springs)	3
TEP 410 §§§	Pre-student Teaching	0	PHYS 494 ^{**}	Senior Physics Seminar	2
TEP 435 §§§	Student Teaching	9	CHEM 495	Senior Capstone: Natural Sciences	3
EDUC 420 §§§	Professional Issues in Education	2	Varies	Art/Music/Dance (QuEST)	3
			THEO 223	Global Christian Theology (QuEST, both Non-western and Christian Belief)	3
			<i>Take Praxis II exam.</i>		
TOTAL		12	TOTAL		17

* Fall-only courses, ** Spring-only courses

[^]Course must be completed prior to applying for the teacher education program. Admission to the TEP is required for junior level field experience and related courses.

§ EDSP 207, EDUC 203, TEP 210 must be taken concurrently.

§§ EDUC 331, EDSP 307, TEP 310 must be taken concurrently.

§§§ TEP 407, TEP 410, TEP 435, EDUC 420 must be taken concurrently. No other courses may be taken during the professional semester.

† Talk to your advisor about ENGR 367. A directed study might be needed.

Physics (B.S.) (Odd fall start)
8-semester Plan

Course #	Course Name	Credits	Course #	Course Name	Credits
First Year – Fall - Odd Year			First Year – Spring - Even Year		
IDFY 101	First year seminar (QuEST)	3	IDCR 151	Created and Called (QuEST)	3
Varies	1 st language requirement (QuEST)	3	Varies	2 nd language requirement (QuEST)	3
COMM 105	Oral Communication (QuEST)	3	Varies	1 st social science/history (QuEST)	3
MATH 111	Calculus I	4	MATH 112	Calculus II	4
CHEM 105	General Chemistry I	4	PHYS 211	General Physics I	4
		Total			17
Sophomore – Fall - Even Year			Sophomore – Spring - Odd Year		
Varies	3 rd language requirement (QuEST)	3	ENGL 1xx	Literature (QuEST)	3
BIBL 2xx	Bible (QuEST)	3	PHIL 101 or 102	Philosophy (QuEST)	3
MATH 308 [^] *	Differential Equations	3	ENGR 212**	Programming For Engineers	3
MATH 211	Calculus III	4	PHYS 251**	Modern Physics	4
PHYS 212*	General Physics II	4	MATH 261 [^] **	Linear Algebra	3
		Total			17
Junior – Fall - Odd Year			Junior – Spring - Even Year		
Varies	2 nd social science/history (QuEST)	3	PHYS 317**	Optics (even Springs)	3
Varies	Christian Beliefs (QuEST)	3	PHYS 402**	Quantum Mechanics (even Springs)	3
PHYS 425*	Solid State Physics (odd Falls)	3	PHYS 322†	Independent Research (or other Physics elective)	3
ENGR 367*	Electromagnetics (odd Falls)	3	IDNW 2xx	Non-Western Studies (QuEST)	2-3
STAT 291* or ENGR 213	Probability and Statistics or Engineering Statistics	3	WELL 1xx	Wellness (QuEST)	1
SCIE 393†	Research Methods	1	Varies	Free Elective	3
		Total			16
Senior – Fall - Even Year			Senior – Spring - Odd Year		
PHYS 421*	Particle Physics (even Falls)	3	PHYS 328**	Classical Mechanics (odd Springs)	3
PHYS 422†	Senior Research (or free elective)	3	PHYS 494	Senior Physics Seminar	2
ENGR 371	Thermodynamics	3	SCIE 495	Capstone Natural Sciences	3
Varies	Ethics, World View or Pluralism (QuEST)	3	Varies	Art, Music, Theater or Dance (QuEST)	3
Varies	Free Elective	3	Varies	Free Elective	3
		Total			15
Total			Total		
			17		
			16		
			15-16		
			14		

*Fall-only courses

**Spring-only courses

[^]Requirement can alternatively be met in as single semester by MATH 270

†Recommended, but not required for degree (counts as free or physics elective)

Physics (B.S.) (Even fall start)

8-semester plan

Course #	Course Name	Credits	Course #	Course Name	Credits
First Year – Fall – Even Year			First Year – Spring - Odd Year		
IDFY 101	First year seminar (QuEST)	3	IDCR 151	Created and Called (QuEST)	3
Varies	1 st language requirement (QuEST)	3	Varies	2 nd language requirement (QuEST)	3
COMM 105	Oral Communication (QuEST)	3	Varies	1 st social science/history (QuEST)	3
MATH 111	Calculus I	4	MATH 112	Calculus II	4
CHEM 105	General Chemistry I	4	PHYS 211	General Physics I	4
TOTAL		17	TOTAL		17
Sophomore – Fall - Odd Year			Sophomore – Spring - Even Year		
Varies	3 rd language requirement (QuEST)	3	ENGL 1xx	Literature (QuEST)	3
BIBL 2xx	Bible (QuEST)	3	PHIL 101 or 102	Philosophy (QuEST)	3
MATH 308 [^] *	Differential Equations	3	ENGR 212**	Programming For Engineers	3
MATH 211	Calculus III	4	PHYS 251**	Modern Physics	4
PHYS 212*	General Physics II	4	MATH 261 [^] **	Linear Algebra	3
TOTAL		17	TOTAL		16
Junior – Fall - Even Year			Junior – Spring - Odd Year		
Varies	2 nd social science/history (QuEST)	3	PHYS 328**	Classical Mechanics (odd Springs)	3
Varies	Christian Beliefs (QuEST)	3	PHYS 322†	Independent Research (or other Physics elective)	3
PHYS 421*	Particle Physics (even Falls)	3	IDNW 2xx	Non-Western Studies (QuEST)	2-3
STAT 291* or ENGR 213	Probability and Statistics or Engineering Statistics	3	Varies	Art, Music, Theater or Dance (QuEST)	3
SCIE 393†	Research Methods	1	WELL 1xx	Wellness (QuEST)	1
Varies	Free Elective	3	Varies	Free Elective	3
TOTAL		16	TOTAL		15-16
Senior – Fall - Odd Year			Senior – Spring - Even Year		
Varies	Ethics, World View or Pluralism (QuEST)	3	PHYS 317**	Optics (even Springs)	3
PHYS 425*	Solid State Physics (odd Falls)	3	PHYS 402**	Quantum Mechanics (even Springs)	3
PHYS 422†	Senior Research (or free elective)	3	PHYS 494	Senior Physics Seminar	2
ENGR 371	Thermodynamics	3	SCIE 495	Capstone Natural Sciences	3
ENGR 367*	Electromagnetics (odd Falls)	3	Varies	Free Elective	3
TOTAL		15	TOTAL		14

* Fall-only courses

**Spring-only courses

[^]Requirement can alternatively be met in as single semester by MATH 270

†Recommended, but not required for degree (counts as free or physics elective)

Physics (B.A.) (Odd fall start)

8-semester Plan

Course #	Course Name	Credits	Course #	Course Name	Credits
First Year – Fall - Odd Year			First Year – Spring - Even Year		
IDFY 101	First year seminar (QuEST)	3	IDCR 151	Created and Called (QuEST)	3
Varies	1 st language requirement (QuEST)	3	Varies	2 nd language requirement (QuEST)	3
COMM 105	Oral Communication (QuEST)	3	Varies	1 st social science/history (QuEST)	3
MATH 111	Calculus I	4	MATH 112	Calculus II	4
CHEM 105	General Chemistry I	4	PHYS 211	General Physics I	4
		Total			17
Sophomore – Fall - Even Year			Sophomore – Spring - Odd Year		
Varies	3 rd language requirement (QuEST)	3	ENGL 1xx	Literature (QuEST)	3
BIBL 2xx	Bible (QuEST)	3	PHIL 101 or 102	Philosophy (QuEST)	3
MATH 308 [^] *	Differential Equations	3	ENGR 212**	Programming For Engineers	3
MATH 211	Calculus III	4	PHYS 251**	Modern Physics	4
PHYS 212*	General Physics II	4	MATH 261 [^] **	Linear Algebra	3
		Total			17
Junior – Fall - Odd Year			Junior – Spring - Even Year		
Varies	2 nd social science/history (QuEST)	3	PHYS 317**	Optics (even Springs)	3
Varies	Christian Beliefs (QuEST)	3	PHYS 402**	Quantum Mechanics (even Springs)	3
ENGR 367*	Electromagnetics (odd Falls)	3	PHYS 322†	Independent Research (or Free Elective)	3
STAT 291* or ENGR 213	Probability and Statistics or Engineering Statistics	3	IDNW 2xx	Non-Western Studies (QuEST)	2-3
SCIE 393†	Research Methods	1	WELL 1xx	Wellness (QuEST)	1
			Varies	Free Elective	3
		Total			16
Senior – Fall - Even Year			Senior – Spring - Odd Year		
Varies	Ethics, World View or Pluralism (QuEST)	3	PHYS 328**	Classical Mechanics (odd Springs)	3
Varies	Art, Music, Theater or Dance (QuEST)	3	PHYS 494	Senior Physics Seminar	2
ENGR 371	Thermodynamics	3	SCIE 495	Capstone Natural Sciences	3
Varies	Free Elective	3	Varies	Free Elective	3
Varies	Free Elective	3	Varies	Free Elective	3
		Total			15
Total			Total		
			17-16		

*Fall-only courses

**Spring-only courses

[^]Requirement can alternatively be met in as single semester by MATH 270

[†]Recommended, but not required for degree (counts as free or physics elective)

NOTE: The major includes 17.5-22 free elective credits. Students should consider a minor in a related area to make best use of the elective credits and additional space in this plan. Minors require at least 18 credits (12 must be unique credits that are not required for major).

Physics (B.A.) (Even fall start)
8-semester Plan

Course #	Course Name	Credits	Course #	Course Name	Credits
First Year – Fall – Even Year			First Year – Spring - Odd Year		
IDFY 101	First year seminar (QuEST)	3	IDCR 151	Created and Called (QuEST)	3
Varies	1 st language requirement (QuEST)	3	Varies	2 nd language requirement (QuEST)	3
COMM 105	Oral Communication (QuEST)	3	Varies	1 st social science/history (QuEST)	3
MATH 111	Calculus I	4	MATH 112	Calculus II	4
CHEM 105	General Chemistry I	4	PHYS 211	General Physics I	4
TOTAL		17	TOTAL		17
Sophomore – Fall - Odd Year			Sophomore – Spring - Even Year		
Varies	3 rd language requirement (QuEST)	3	ENGL 1xx	Literature (QuEST)	3
BIBL 2xx	Bible (QuEST)	3	PHIL 101 or 102	Philosophy (QuEST)	3
MATH 308 [^] *	Differential Equations	3	ENGR 212**	Programming For Engineers	3
MATH 211	Calculus III	4	PHYS 251**	Modern Physics	4
PHYS 212*	General Physics II	4	MATH 261 [^] **	Linear Algebra	3
TOTAL		17	TOTAL		16
Junior – Fall - Even Year			Junior – Spring - Odd Year		
Varies	2 nd social science/history (QuEST)	3	PHYS 328**	Classical Mechanics (odd Springs)	3
Varies	Christian Beliefs (QuEST)	3	PHYS 322†	Independent Research (or Free Elective)	3
ENGR 371	Thermodynamics	3	IDNW 2xx	Non-Western Studies (QuEST)	2-3
STAT 291* or ENGR 213	Probability and Statistics or Engineering Statistics	3	WELL 1xx	Wellness (QuEST)	1
SCIE 393†	Research Methods	1	Varies	Free Elective	3
Varies	Free Elective	3	Varies	Free Elective	3
TOTAL		16	TOTAL		15-16
Senior – Fall - Odd Year			Senior – Spring - Even Year		
Varies	Ethics, World View or Pluralism (QuEST)	3	PHYS 317**	Optics (even Springs)	3
Varies	Art, Music, Theater or Dance (QuEST)	3	PHYS 402**	Quantum Mechanics (even Springs)	3
ENGR 367*	Electromagnetics (odd Falls)	3	PHYS 494	Senior Physics Seminar	2
Varies	Free Elective	3	SCIE 495	Capstone Natural Sciences	3
Varies	Free Elective	3	Varies	Free Elective	3
TOTAL		15	TOTAL		14

*Fall-only courses

**Spring-only courses

[^]Requirement can alternatively be met in as single semester by MATH 270

†Recommended, but not required for degree (counts as free or physics elective)

NOTE: The major includes 17.5-22 free elective credits. Students should consider a minor in a related area to make best use of the elective credits and additional space in this plan. Minors require at least 18 credits (12 must be unique credits that are not required for major).