Advising Supplement – Physics Major

	Pre and co-requisite courses	
Course	**Title**	**Hours**
Physics 151-152	Introductory Physics	8
Math 131-132 or 141-142	Calculus	8
Math 203	Multivariable Calculus	4
Math 307	Differential Equations	3

Physics 151-152 should be taken no later than the sophomore year, preferably in the freshman year. The calculus sequence should be taken at the same time (or sooner!). Math 203 and 307 should be taken in the following year, to provide the appropriate mathematics preparation for the physics major.

The physics major consists of the following courses:

Required Courses	**Title**	**Hours**
Physics 205	Modern Physics	4
Physics 210	Digital Electronics	4
Physics 250	Topics in Mathematical Physics	3
Physics 300	Physics Research *	3
Physics 330	Intermediate Mechanics	4
Physics 340	Electricity and Magnetism	4
Physics 499	Senior Seminar in Physics*	3
Plus, six hours from the following electives:		
Physics 335	Continuum Mechanics	3
Physics 345	Magnetic materials & devices	3
Physics 430	Quantum Mechanics	3
Physics 435	Physical Optics	3
Physics 440	Statistical & Thermal Physics	3
Physics 445	Solid State Physics	3
Physics 481-482	Special Topics in Physics	3 or 6
Physics 497-498	Senior Project in Physics*	6

*Senior Project may be substituted for Physics Research and Senior Seminar <u>with permission of the department</u>.

Additional elective courses may be substituted with the permission of the department from the following:

Further elective courses	Title	Hours
Physics 215	Analog Electronics*	4
Physics 320	Advanced Laboratory & Instrumentation	1
Physics 391-392	Independent Study	3 or 6
Physics 450	Physics Internship	3
Physics 497-498	Senior Project	6
Astronomy 231-232	Astrophysics	3 or 6
Astronomy 321	Observational Astronomy	1

*PHYS 215 may be substituted for PHYS 210 (Digital Electronics) with permission of the department

A typical (recommended) 4-year program leading to the physics major might look like this:

Freshman year		
Fall	*January*	*Spring*
PHYS 151		PHYS 152
MATH 141		MATH 142
Sophomore year		
Fall	*January*	*Spring*
PHYS 210	PHYS 250	PHYS 205
MATH 203		MATH 307
Junior Year		
Fall	*January*	*Spring*
PHYS 330		PHYS 340
Physics elective		Physics elective
Senior Year		
Fall	*January*	*Spring*
PHYS 300		PHYS 499
Physics elective		Physics elective

The student needs to select two “physics electives” in the four possible semesters listed.

Students in the cooperative engineering program will need to complete physics and other required course work in 3 years. A typical (doable) 3-year program leading to the physics major might look like this:

Freshman year		
Fall	*January*	*Spring*
PHYS 151		PHYS 152
MATH 141		MATH 142
Sophomore Year		
Fall	*January*	*Spring*
PHYS 210	PHYS 250	PHYS 205
PHYS 330		PHYS 340
MATH 203		MATH 307
Junior Year		
Fall	*January*	*Spring*
PHYS 300		PHYS 499
Physics elective		Physics elective

A student could also start the 3-year program in the sophomore year and graduate in 4 years. If a student waits to begin work in physics and mathematics until the junior year, it is probable that one or two additional semesters will be required to complete the major.