

# B.S. in Engineering Physics

## Optical Engineering Concentration

(Effective Fall 2021)

Freshman Fall Semester			Freshman Spring Semester		
Course	Course Name	CR	Course	Course Name	CR
PHYS-201	General Physics I	4	PHYS-202	General Physics II	4
MTSC-251	Calculus I	4	MTSC-252	Calculus II	4
PHYS-200	Analysis of Physical Systems	3	PHYS-220	Scientific Programming	3
ENGL-121	Introduction to Composition I (8-weeks)	2	ENGL-124	Intro to Speech and Composition IV (8-weeks)	2
ENGL-122	Introduction to Composition II (8-weeks)	2	PHYS-192	University Seminar II	1
PHYS-191	University Seminar I	1	MVSC-101	Lifetime Fitness and Wellness	2
	<b>Total Credits</b>	<b>15</b>		<b>Total Credits</b>	<b>16</b>
Sophomore Fall Semester			Sophomore Spring Semester		
Course	Course Name	CR	Course	Course Name	CR
PHYS-313	Mechanics I: Statics	3	PHYS-314	Mechanics II: Dynamics	3
CHEM-101	Gen. & Elem. Chemistry I	4	ENGR-205	Electrical Circuit Analysis	4
ENGR-210	Digital Logic Design	4	ENGL-123	Intro to Composition and Speech III (8-weeks)	3
MTSC-313	Linear Algebra	3	MTSC-253	Calculus III	4
ENGL-xxx	World Literature Elective	3			
	<b>Total Credits</b>	<b>17</b>		<b>Total Credits</b>	<b>14</b>
Junior Fall Semester			Junior Spring Semester		
Course	Course Name	CR	Course	Course Name	CR
PHYS-361	Modern Physics	4	PHYS 342	Electricity and Magnetism II	3
PHYS 341	Electricity & Magnetism I	3	PHYS 362	Quantum Mechanics	3
ENGR-302	Signals and Systems	4	xxxx-xxx	Technical Elective 1	3
PHYS-316	Introduction to Optics	4	xx-xxx	Social Science Elective	3
MTSC-351	Differential Equations	3			
	<b>Total Credits</b>	<b>18</b>		<b>Total Credits</b>	<b>12</b>
Senior Fall Semester			Senior Spring Semester		
Course	Course Name	CR	Course	Course Name	CR
PHYS-305	Thermal Physics	3	PHYS-418	Theoretical & Exp Research **	3
PHYS-451	Introduction to Research*	3	ENGR-342	Material Science for Engineers	4
xxxx-xxx	Technical Elective II	3	xxxx-xxx	Technical Elective III	3
GLOB-395	Global Societies	3	xx-xxx	Arts and Humanities Elective	3
xx-xxx	Arts and Humanities Elective	3	HIST-xxx	World History Elective	3
	<b>Total Credits</b>	<b>15</b>		<b>Total Credits</b>	<b>16</b>

**Total Credits: 123**

**Technical Elective  
Selection**

For Physics concentration, the student and Advisor will choose a minimum of 12 credits from technical electives under the Physics concentration. For engineering concentrations, the student and Advisor will choose a minimum of 9 credits from technical electives under the chosen concentration.

**ELECTIVES**

<u>Course</u>	<u>Course Name</u>	<u>CR</u>
PHYS-306	Computational Methods of Physics	3
PHYS-316	Introduction to Physical Optics	4
PHYS-319	Quantitative Optical Methods and Microscopy	4
PHYS-411	Fiber Optics Communication	4
PHYS-413	Introduction to Laser Physics	3
PHYS-423	Introduction to Nonlinear Optics	3
ENGR-340	Solid States Electronics	3
ENGR-446	Optical Electronics	3