

APPENDIX D

**Proposed Course Offerings
Core Curriculum & Majors
Possible 4-Year Paths for Majors**

Proposed Course Offerings

PROPOSED COURSE OFFERINGS OF THE PHYSICS/ENGINEERING DEPARTMENT

<u>COURSE NO.</u>	<u>COURSE DESCRIPTION</u>	<u>HOURS</u>
EGR 110	GRAPH & NUM METHODS	1
EGR 111	ENGINEERING DRAWING	1
EGR 112	DESCRIPTIVE GEOMETRY	2
EGR 215	ENGINEERING MECHANICS	3
EGR 354	ANALOG ELECTRONICS	2
EGR 423	DIGITAL ELECTRONICS	2
EGR 424	COMPUTER INTERFACING	2
EGR 415	ROBOTICS	2
PHY 103	EARTH SCIENCE	4
PHY 110	PHYSICAL SCIENCE	4
PHY 141	GENERAL PHYSICS I	4
PHY 142	GENERAL PHYSICS II	4
PHY 241	UNIVERSITY PHYSICS I	4
PHY 242	UNIVERSITY PHYSICS II	4
PHY 304	MODERN PHYSICS	4
PHY 311	NUCLEAR PHYSICS	3
PHY 341	ANALYTICAL MECHANICS	4
PHY 361	ELECT, MAG, & WAVES I	3
PHY 362	ELECT, MAG, & WAVES II	3
PHY 401	THERMAL PHYSICS	3
PHY 431	QUANTUM MECHANICS	3
PHY 453	SOLID STATE PHYSICS	3
PHY 481	ATOMIC PHYSICS LAB	1
PHY 490	SPECIAL TOPICS IN PHYSICS	1-3
PHY 495	SEMINAR IN PHYSICS	1
PHY 499	SENIOR RESEARCH	1-4

Core Curriculum & Majors

PROPOSED PHYSICS/ENGINEERING DEPARTMENT CURRICULUM

Core Curriculum

Course No. & Title	Credit Hrs	
Egr 110 Graph & Num Methods	1	
Phy 241, 242 Univ. Phys I & II/w Labs	8	
Phy 304 Modern Physics/w Lab	4	
Phy 341 Analytical Mechanics	4	Not Required for Egr Physics
Phy 361 Electromag Theory I	3	
Phy 401 Thermal Physics	3	
Phy 431 Quantum Mechanics	3	
Phy 495 Seminar	1	
Mth 164 Calculus I	4	
Mth 174 Calculus II	4	
Mth 274 Calculus III	4	
Mth 374 Applied Math	4	
Hours for Core Curriculum	43	39 for Egr Physics

Physics (AB)

Select 1:	
Phy 362 Electromag Theory II	
Phy 311 Nuclear Physics	
Phy 432 Solid State Physics	3
Chm 153,154 Gen. Chem I & II	8
General Education Core Required	52
Electives	22
Total Hours	128

Physics(BS)

Phy 311 Nuclear Physics	3
Phy 362 Electromag Theory II	3
Phy 432 Solid State Physics	3
Phy 480 Atomic Physics Lab	1
Chm 153, 154 Gen Chem I & II	8
Select One Option:	
Option 1: Organic Chem	5
2: Egr 423 Digital	2
Egr 424 Interfacing	2
Gen Educ Core Requirement	52
Electives	10(11)
Total Hours	128

Engineering Physics (BS)

Phy 311 Nuclear Physics	3
Phy 362 Electromag Theory II	3
Phy 432 Solid State Physics	3
Egr 111 Engineering Drawing	1
Egr 112 Descriptive Geometry	2
Egr 215 Engineering Statics	3
Egr 354 Analog Electronics	2
Egr 423 Digital Electronics	2
Egr 424 Interfacing	2
Egr 415 Robotics/w Lab	2
Chm 153 General Chemistry I	4
General Educ Core Required	52
Electives	10
Total Hours	128

Computational Physics (BS)

Select 1:	
Phy 311 Nuclear Physics	
Phy 432 Solid State	3
CSC 134 Intro to Comp Sci	4
CSC 154 Fund of Comp Sci	4
CSC 254 Data Structures	4
CSC courses 300 level or above	8
Gen Educ Core Requirement	52
Electives	10
Total Hours	128

Possible 4-Year Paths for Majors

**POSSIBLE 4 YEAR PATH FOR
PHYSICS (AB)**

Freshman Year

First Semester

Egr. 110-Graph & Num Methods
Mth 164-Calculus I
Chm 153-Chemistry I

Second Semester

Phy 241-Univ. Physics I
Mth 174-Calculus II
Chm 154-Chemistry II

Sophomore Year

First Semester

Phy 242-Univ. Physics II
Mth 274-Calculus III

Second Semester

Phy 304-Modern Physics
Mth 374-Applied Math

Junior Year

First Semester

Phy 431-Quantum Mechanics
Phy 341-Analytical Mechanics

Second Semester

Phy 453-Solid State
or
Phy 311-Nuclear Physics

Senior Year

First Semester

Phy 361-E&M I

Second Semester

Phy 401-Thermal Physics
Phy 495-Seminar

POSSIBLE FOUR YEAR PATH FOR
PHYSICS (BS)

Freshman Year

First Semester

Egr. 110-Graph & Num Methods
Mth 164-Calculus I
Chm 153-Chemistry I

Second Semester

Phy 241-Univ. Physics I
Mth 174-Calculus II
Chm 154-Chemistry II

Sophomore Year

First Semester

Phy 242-Univ. Physics II
Mth 274-Calculus III

Second Semester

Phy 304-Modern Physics
Mth 374-Applied Math

Junior Year

First Semester

Phy 431-Quantum Mechanics
Phy 341-Analytical Mechanics

Second Semester

Phy 453-Solid State
Phy 311-Nuclear Physics

Senior Year

First Semester

Phy 361-E&M I
Phy 481-Atomic Physics Lab
Organic I

Second Semester

Phy 362-E&M II
Phy 401-Thermal Physics
Phy 495-Seminar

**POSSIBLE FOUR YEAR PATH FOR
ENGINEERING PHYSICS (BS)**

Freshman Year

First Semester

Egr. 110-Graph & Num. Methods
Egr. 111-Engr. Drawing
Egr. 112-Descrip Geometry
Mth 164-Calculus I

Second Semester

Phy 241-Univ. Physics I
Mth 174-Calculus II

Sophomore Year

First Semester

Phy 242-Univ. Physics II
Mth 274-Calculus III
Egr 215-Engineering Statics

Second Semester

Phy304-Modern Physics
Mth 374-Applied Math

Junior Year

First Semester

Phy 431-Quantum Mechanics
Chm 153-Chemistry I
Egr 354-Analog Electronics

Second Semester

Phy 453-Solid State
Phy 311-Nuclear Physics
Egr 423-Digital
Egr 424-Interfacing

Senior Year

First Semester

Phy 361-E&M I
Egr 415-Robotics

Second Semester

Phy 362-E&M II
Phy 401-Thermal Physics
Phy 495-Seminar

**POSSIBLE FOUR YEAR PATH FOR
PHYSICS & COMPUTING (BS)**

Freshman Year

First Semester

Egr. 110-Graph & Num Methods
Mth 164-Calculus I
CSC 134-Intro to CS

Second Semester

Phy 241-Univ. Physics I
Mth 174-Calculus II
CSC 154-Fund of CS

Sophomore Year

First Semester

Phy 242-Univ. Physics II
Mth 274-Calculus III
CSC 254-Data Structures

Second Semester

Phy 304-Modern Physics
Mth 374-Applied Math
(CSC 314)*-Operating Sys

Junior Year

First Semester

Phy 431-Quantum Mechanics
Phy 341-Analytical Mechanics

(CSC 374)*-Comp Networks

Second Semester

Phy 453-Solid State
or
Phy 311-Nuclear Physics
(CSC 334)*-Artificial Intel

Senior Year

First Semester

Phy 361-E&M I

(CSC 454)*-Comp Arch

Second Semester

Phy 401-Thermal Physics
Phy 495-Seminar
(CSC 394)*-Prog Lang

* (CSC XXX) are possible courses and semesters that the student may want to select to fulfill their required 8 credit hours of CSC electives.