

## YEAR I

COURSE CODE	COURSE TITLE	SEMESTER 1	SEMESTER 2
		L T P U	L T P U
MTH 101	Elementary Mathematics I	3 1 0 4	-----
MTH 102	Elementary Mathematics II	-----	3 1 0 4
PHY 101	General Physics I	2 1 1 4	-----
PHY 102	General Physics II	-----	2 1 1 4
CHM 101	General Chemistry I	2 1 1 4	-----
CHM 102	General Chemistry II	-----	2 1 1 4
BIO 101	Biology for Physical Science	2 0 1 3	-----
ENG 101	Workshop Practice I	0 0 1 1	-----
ENG 102	Workshop Practice II	-----	0 0 1 1
ENG 103	Engineering Drawing I	0 0 1 1	-----
ENG 104	Engineering Drawing II	-----	0 0 1 1
GST 101	Use of English I	1 1 0 2	-----
GST 102	Use of English II	-----	1 1 0 2
GST 103	Humanities	1 0 0 1	-----

GST 108	Social Science I	-----	1 0 0 1
GST 110	Science, Technology and Society	-----	1 0 0 1
	Electives I	1	-----
	Electives II	-----	1
	Total Unit	21	19

## ELECTIVES

IGB 101	Introduction to Igbo Grammar, Composition and Comprehension	1 0 0 1	-----
IGB 102	Introduction to Igbo History, Culture and Literature	-----	1 0 0 1
FRN 101	French Language I	1 0 0 1	-----
FRN 102	French Language II	-----	1 0 0 1

## YEAR II

COURSE CODE	COURSE TITLE	SEMESTER 3	SEMESTER 4
		L T P U	L T P U
MTH 201	Mathematical Methods I	2 1 0 3	-----

MTH 202	Mathematical Methods II	-----	2 1 0 3
MTH 203	Elem. Differential Equ.I	2 1 0 3	-----
MTH 204	Elem. Differential Equ.II	-----	2 1 0 3
STA 211	Statistics	2 1 0 3	-----
PHY 204	Modern Physics I	-----	2 1 0 3
PHY 205	Waves and Oscillations	1 1 0 2	-----
PHY 207	Experimental Physics I	0 0 1 1	-----
PHY 208	Experimental Physics II	-----	0 0 1 1
PHY 212	Thermal Physics	-----	2 1 0 3
PHY 238	Intro. for Space Science	-----	1 1 0 2
CSC 201	Computers and Applic. I	2 1 1 4	-----
ENG 201	Workshop Practice III	0 0 1 1	-----
GST 201	Social Science II	1 0 0 1	-----
	Electives I	3	-----
	Electives II	-----	6
	Total Unit	21	21

## ELECTIVES

### 1. PURE PHYSICS OPTION

#### 2a. INDUSTRIAL PHYSICS – APPLIED NUCLEAR SCIENCE OPTION

#### 2b. INDUSTRIAL PHYSICS – MATERIALS SCIENCE OPTION

ENG 207	Intro, to Engineering Materials I	1 1 0 2	-----
ENG 208	Intro. to Engineering Materials II	-----	1 0 1 2
PHY 201	Applied Electricity I	2 1 0 3	-----
PHY 231	Physics of Solid Earth	1 1 0 2	-----
CSC 202	Computers & Applications II	-----	1 1 1 3
MTH 222	Intro. to Numerical Analysis	-----	2 1 0 3

#### 2c. INDUSTRIAL PHYSICS - ELECTRONICS OPTION

ENG 207	Intro. to Engineering Materials I	1 1 0 2	-----
ENG 208	Intro. to Engineering Materials II	-----	1 0 1 2
ENG 220	Intro. to Electrical Engineering	-----	2 1 1 4

EEE 202	Basic Electronics Engineering	-----	1 1 1 3
PHY 201	Applied Electricity I	2 1 0 3	-----
PHY 231	Physics of Solid Earth	1 1 0 2	-----
EEE 204	Digital Logic Techniques and Computer Design I	-----	1 1 1 3
MTH 222	Intro. to Numerical Analysis	-----	1 1 1 3

### YEAR III

COURSE CODE	COURSE TITLE	SEMESTER 5	SEMESTER 6
		L T P U	L T P U
MTH 305	Complex Analysis I	2 1 0 3	-----
MTH 322	Vector and Tensor Analysis	-----	2 1 0 3
PHY 301	Analytical Mechanics I	2 1 0 3	-----
PHY 304	Electricity and Magnetism I	-----	2 1 0 3
PHY 306	Modern Physics II	-----	2 1 0 3
PHY 307	Experimental Physics III	0 0 1 1	-----

PHY 308	Experimental Physics IV	-----	0 0 1 1
PHY 313	SolidState Physics I	2 1 0 3	-----
PHY 316	Energy and the Environment	-----	1 0 0 1
ENS 301	Introduction to Entrepreneurship and innovation	1 0 1 2	-----
ENS 302	Business Creation, Growth and Corporate Governance	-----	1 0 1 2
	Electives (Restricted)	7	-----
	Electives (Restricted)	-----	7
	Total Unit	19	20

## **ELECTIVES**

### **1. PURE PHYSICS OPTION**

PHY 312	Mechanics of Fluids	-----	2 1 0 3
PHY 321	Inter.of Radi. with Matter	2 1 0 3	-----
PHY 322	Basic Nuclear Engineering	-----	2 1 0 3
MTH 306	Complex AnalysisII	-----	2 1 0 3

PHY 303	Applied Electricity II	2 1 0 3	-----
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**2a. INDUSTRIAL PHYSICS - APPLIED NUCLEAR SCIENCE OPTION**

PHY 312	Mechanics of Fluids	-----	2 1 0 3
PHY 322	Basic Nuclear Engineering	-----	2 1 0 3
PHY 321	Inter.of Radi. with Matter	2 1 0 3	-----
ENG 304	Heat and Mass Transfer	-----	2 1 0 3
PHY 303	Applied Electricity II	2 1 0 3	-----

**2b. INDUSTRIAL PHYSICS - ELECTRONICS OPTION**

CSC 202	Computer and Applications II	-----	1 1 1 3
EEE 301	Network Theory	2 1 0 3	-----
EEE 307	Eng. Control & Sys. Analysis	1 1 0 2	-----
ECE 316	Applied Electronics	-----	2 1 1 4
PHY 303	Applied Electricity II	2 1 0 3	-----

**2c. INDUSTRIAL PHYSICS - MATERIALS SCIENCE OPTION**

ENG 207	Intro. to Engr. Materials I	1 1 0 2	-----
ENG 208	Intro. to Engr. Materials II	-----	1 0 1 2

MME 206	Physical Metallurgical I	-----	2 1 0 3
MME 302	Materials processing	-----	2 1 0 3
PHY 303	Applied Electricity II	2 1 0 3	-----

#### YEAR IV

COURSE CODE	COURSE TITLE	SEMESTER 7		SEMESTER 8					
		L	T	P	U	L	T	P	U
PHY 401	Analytical Mechanics II	2	1	0	3	-----			
PHY 403	Quantum Mechanics I	2	1	0	3	-----			
PHY 405	Electricity and Magnetism II	2	1	0	3	-----			
PHY 407	Experimental Physics V	0	0	1	1	-----			
PHY 409	Optics	2	1	0	3	-----			
PHY 413	Solid State Physics II	2	1	0	3	-----			
	Electives	4				-----			
SIW 400	Industrial Attachment	-----							6
	Total Units	20							6



## ELECTIVES

### 1. PURE PHYSICS OPTION

PHY 421	Nuclear and Particle Physics I	2 1 0 3	-----
MTH 421	Numerical Analysis I	2 1 0 3	-----
MTH 423	Partial Differential Equations	2 1 0 3	-----

### 2a. INDUSTRIAL PHYSICS - APPLIED NUCLEAR SCIENCE OPTION

PHY 421	Nuclear and Particle Physics I	2 1 0 3	-----
PHY 432	Plasma Physics	2 1 0 3	-----
PHY 425	Nuclear Radiation & Shielding	2 1 0 3	-----
MTH 423	Partial Differential Equations I	2 1 0 3	-----

### 2b. INDUSTRIAL PHYSICS - ELECTRONICS OPTION

ECE 411	Advanced Electronics and Studio I	2 1 1 4	-----
ECE 405	Semiconductor Devices Tech.	1 1 0 2	-----
EEE 405	Process Control Technology	1 1 0 2	-----
ENG 405	Engineering Management & Law	1 1 0 2	-----

**2c. INDUSTRIAL PHYSICS - MATERIALS SCIENCE OPTION**

PHY 441	Principles of Materials I	1 1 0 2	-----
PHY 443	Struct. and Properties of Solids	1 1 0 2	-----
PHY 445	Elect. Struct. of Metals and Alloys I	2 1 0 3	-----
PHY 447	Mech. Behaviour of Metals	2 1 0 3	-----
MME 313	Physical Properties of Materials	2 1 0 3	-----
MME 407	Physical Metallurgy II	2 0 0 2	-----

**YEAR V**

COURSE CODE	COURSE TITLE	SEMESTER 9	SEMESTER 10
		L T P U	L T P U
PHY 501	Quantum Mechanics II	2 1 0 3	-----
PHY 502	Statistical Physics	-----	2 1 0 3
PHY 503	Sp. Relativity & E.M I	2 1 0 3	-----
PHY 504	Atomic & Molecular Spec.	-----	2 1 0 3
PHY 591	Project	0 1 2 3	-----
PHY 592	Project	-----	0 1 2 3

	Electives	9	-----
	Electives	-----	9
	Total Units	18	18

## **ELECTIVES**

### **1.PURE PHYSICS OPTION**

PHY 511	Analytical Mechanics III	2 1 0 3	-----
PHY 512	Sp. Relativity and E.M. II	-----	2 1 0 3
PHY 514	Quantum Electronics	-----	2 1 0 3
PHY 521	Nuclear and Particle Physics II	2 1 0 3	-----
PHY 534	Radiation Instruments	-----	1 0 0 1
PHY 535	Biophysics	2 0 0 2	-----
GPH 304	Exploration methods I	-----	2 1 0 3
PHY 537	Aeronomy and Meteorology	2 0 0 2	-----
PHY 538	Medical Nuclear Physics	-----	2 0 0 2
PHY 539	Stellar Structure and Evolution of Galaxies	1 0 0 1	-----
MTH 501	Intro. to Math. Modelling	2 1 0 3	-----

MTH 524	Partial Differential Equations II	-----	2 1 0 3
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**2a. INDUSTRIAL PHYSICS - APPLIED NUCLEAR SCIENCE OPTION**

PHY 514	Quantum Electronics	-----	2 1 0 3
PHY 521	Nuclear and Particle Physics II	2 0 0 2	-----
PHY 522	Nuclear Power Engineering	-----	2 0 0 2
PHY 523	Nuclear Materials	2 1 0 3	-----
PHY 524	Nuclear Reactor Theory	-----	2 1 0 3
PHY 525	Nuclear Instrumentation Lab. I	0 0 1 1	-----
PHY 526	Nuclear Instrumentation Lab. II	-----	0 0 1 1
PHY 527	Nuclear Reactions & Radiation	2 1 0 3	-----
PHY 534	Radiation Instruments	-----	1 0 0 1
PHY 535	Biophysics	2 0 0 2	-----
GPH 304	Exploration methods I	-----	2 1 0 3
PHY 537	Aeronomy and Meteorology	2 0 0 2	-----

PHY 538	Medical Nuclear Physics	-----	2 0 0 2
PHY 539	Stellar Structure and Evolution of Galaxies	1 0 0 1	-----

**2b. INDUSTRIAL PHYSICS - ELECTRONICS OPTION**

PHY 514	Quantum Electronics	-----	2 1 0 3
PHY 531	Physics of Semiconductors I	2 1 0 3	-----
PHY 532	Physics of Semiconductors II	-----	2 1 0 3
PHY 533	Microcomputer Applic. In Phys.	2 1 0 3	-----
PHY 534	Radiation Instruments	-----	1 0 0 1
PHY 535	Biophysics	2 0 0 2	-----
GPH 304	Exploration methods I	-----	2 1 0 3
PHY 537	Aeronomy and Meteorology	2 0 0 2	-----
PHY 538	Medical Nuclear Physics	-----	2 0 0 2
PHY 539	Stellar Structure and Evolution of Galaxies	1 0 0 1	-----
PHY 548	Solid State Diffusion	-----	2 1 0 3

ECE 502	Advanced Electronics II	-----	2 1 0 3
ECE 508	Digital Instrumentation	-----	2 1 0 3
ECE 509	Industrial Electronics	2 1 0 3	-----
IPE 522	Quality Control and Reliability	-----	2 1 0 3

**2c. INDUSTRIAL PHYSICS - MATERIALS SCIENCE OPTION**

PHY 531	Physics of Semiconductors I	1 1 0 3	-----
PHY 532	Physics of Semiconductors II	-----	2 1 0 3
PHY 534	Radiation Instruments	-----	1 0 0 1
PHY 535	Biophysics	2 0 0 2	-----
GPH 304	Exploration methods I	-----	2 1 0 3
PHY 537	Aeronomy and Meteorology	2 0 0 2	-----
PHY 538	Medical Nuclear Physics	-----	2 0 0 2
PHY 539	Stellar Structure and Evolution of Galaxies	1 0 0 1	-----
PHY 541	Principles of Materials II	2 1 0 3	-----

PHY 542	Prop. of Solids and Kinetics of Crystal Imperfections	-----	2 1 0 3
PHY 544	Electr. Struct.of Metals & Alloy II	-----	2 1 0 3
PHY 545	X-ray Metallography Laboratory	2 1 0 3	-----
PHY 546	Materials Science Laboratory	-----	2 1 0 3
PHY 548	SolidState Diffusion	-----	2 1 0 3
MME 505	Crystall. XRD and Electron Micros	2 1 0 3	-----