ST. XAVIER'S TECHNICAL INSTITUTE

Mahim, Mumbai 400 016

A Govt. Aided Autonomous and Minority Institute
Recognised by Govt. of Maharashtra
Approved by A.I.C.T.E.

A JESUIT INSTITUTE

DIPLOMA IN ELECTRONICS AND TELECOMMUNICATION ENGINEERING

Revised Curriculum For

Diploma Programme in Electronics and Telecommunication Engineering

Academic Year 2021-22

Dr. Shivaji Ghungrad
PRINCIPAL
St. Xavier's Technical Institute
Mahim, Mumbai - 400 016.

CHAIRMAN
BOARD OF STUDIES
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Controller of Examinations
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Mahim, Mumbai - 400 016.

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ST. XAVIER'S TECHNICAL INSTITUTE, MAHIM, MUMBAI 400 016
Diploma in Electronics & Telecommunication Engineering

REVISED AND EFFECTIVE FROM JULY 2018	TEACHING AND EXAMINATION SCHEME	SEMESTER ONE

ACADEMIC YEAR 2021-22		TEACHING SCHEME					EXAMINATION SCHEME				
SR.NO	SUBJECT TITLE	SUBJECT CODE	TH	TU	PR	CREDITS	THEORY		PRACTICAL / ORAL		GRAND TOTAL
							ESA	PA	ESA	PA	
1	Basic Mathematics	ET-18111	4	1	XX	5	80	20	XX	XX	100
2	Basic Electronics	ET-18121	4	XX	4	8	80	20	50	25	175
3	Basic Electrical Engineering	ET-18113	4	XX	2	6	80	20	50	25	175
4	Computer Applications	ET-18115	XX	XX	2	2	XX	XX	50 (ONLINE EXAM)	25	75
5	Electronic Materials & Components	ET-18116	2	2	XX	4	XX	XX	50 (ONLINE EXAM)	50	100
6	Professional Practices	ET-18117	2	XX	XX	2	XX	XX	XX	50	50
7	English Language	ET-18118	4	XX	2	6	80	20	XX	50	150
		Total	20	3	10	33	320	80	200	225	825

ET-18120 represents “Yoga” which is Non-Credit and Non-Exam in First Semester of 1 Hour/ Week

Total Number of Credits = 33 , Total Number of Student Contact Hours = 34 — Total Marks = 825

Abbreviations		
	TH	Theory
	TU	Tutorial
	PR	Practical
	XX	No TW/EXAM(TH/PR/OR/ Online)
	ESA	End Semester Exam
	PA	Progressive assessment

- For progressive and continuous assessment two periodic tests of 20 marks each are for all the theory subjects. The average of these is added to the final theory examination marks, which is of 70 marks (except for online examinations).
- All term work marks are Internal.
- All practical exams/ oral are External and Internal .
- All online exams are Internal

ST. XAVIER'S TECHNICAL INSTITUTE, MAHIM, MUMBAI 400 016
Diploma in Electronics & Telecommunication Engineering

REVISED AND EFFECTIVE FROM JANUARY 2019	TEACHING AND EXAMINATION SCHEME	SEMESTER TWO

ACADEMIC YEAR 2021-22		TEACHING SCHEME					EXAMINATION SCHEME				
SR.NO	SUBJECT TITLE	SUBJECT CODE	TH	TU	PR	CREDITS	THEORY		PRACTICAL / ORAL		GRAND TOTAL
							ESA	PA	ESA	PA	
1	Engineering Mathematics	ET-18211	3	1	xx	4	80	20	xx	xx	100
2	Applied Electronics	ET-18222	3	xx	4	7	80	20	50	25	175
3	Electronic Circuits & Applications	ET-18223	3	xx	4	7	80	20	50	25	175
4	Engg. Drawing & C.A.D.	ET-18215	xx	xx	2	2	xx	xx	50	25	75
5	Electrical Machines	ET-18216	3	xx	2	5	80	20	50	25	175
6	Electronics Workshop	ET-18217	xx	xx	2	2	xx	xx	xx	50	50
7	Environmental Science *	ET-18219	2	xx	2	4	xx	xx	(Online exam) 100	50	150
8	Communication Skills	ET-18224	2	2	xx	4	xx	xx	xx	50	50
		Total	16	3	16	35	320	80	300	250	950

Total Number of Credits = 35, Total Number of Student Contact Hours = 35	Total Marks =	950

Abbreviations		
	TH	Theory
	TU	Tutorial
	PR	Practical
	XX	No TW/EXAM(TH/PR/OR/ Online)
	ESA	End Semester Exam
	PA	Progressive assessment

- For progressive and continuous assessment two periodic tests of 20 marks each are for all the theory subjects. The average of these is added to the final theory examination marks, which is of 70 marks (except for online examinations).
- All term work marks are Internal.
- All practical exams/ oral are External and Internal .
- All online exams are Internal

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Diploma in Electronics & Telecommunication Engineering

REVISED AND EFFECTIVE FROM JULY 2019	TEACHING AND EXAMINATION SCHEME	SEMESTER THREE

ACADEMIC YEAR 2021-22		TEACHING SCHEME					EXAMINATION SCHEME				
SR.NO	SUBJECT TITLE	SUBJECT CODE	TH	TU	PR	CREDITS	THEORY		PRACTICAL / ORAL		GRAND TOTAL
							ESA	PA	ESA	PA	
1	Applied Mathematics	ET-18311	3	1	xx	4	80	20	xx	xx	100
2	Principles of Communication I*	ET-18312	4	xx	2	6	80	20	50	25	175
3	Electronic Test Instruments	ET-18313	3	xx	2	5	80	20	50	25	175
4	'C' Programming *	ET-18314	2	xx	4	6	xx	xx	50	25	75
5	Linear Integrated Circuits	ET-18315	4	xx	2	6	80	20	50	25	175
6	Circuit Building I	ET-18319	xx	xx	4	4	xx	xx	xx	50	50
7	Academic Skills	ET-18317	xx	xx	2	2	xx	xx	xx	xx	xx
		Total	16	1	16	33	320	80	200	150	750

*ET-18320 represents “Yoga” which is non-credit and non-exam in 3rd Semester of 2 hours per week

Total Number of Credits = 33, Total Number of Student Contact Hours = 35 — Total Marks = 750

Abbreviations		
	TH	Theory
	TU	Tutorial
	PR	Practical
	XX	No TW/EXAM(TH/PR/OR/ Online)
	ESA	End Semester Exam
	PA	Progressive assessment

- For progressive and continuous assessment two periodic tests of 20 marks each are for all the theory subjects. The average of these is added to the final theory examination marks, which is of 70 marks (except for online examinations).
- All term work marks are Internal.
- All practical exams/ oral are External and Internal .
- All online exams are Internal

ST. XAVIER'S TECHNICAL INSTITUTE, MAHIM, MUMBAI 400 016
Diploma in Electronics & Telecommunication Engineering

REVISED AND EFFECTIVE FROM JANUARY2020	TEACHING AND EXAMINATION SCHEME	SEMESTER FOUR

ACADEMIC YEAR 2021-22		TEACHING SCHEME					EXAMINATION SCHEME				
SR.NO	SUBJECT TITLE	SUBJECT CODE	TH	TU	PR	CREDITS	THEORY		PRACTICAL / ORAL		GRAND TOTAL
							ESA	PA	ESA	PA	
1	Entrepreneurship	ET-18411	3	xx	2	5	xx	xx	(Online exam) 50	50	100
2	Principles of Communication II	ET-18412	3	xx	2	5	80	20	50	25	175
3	Digital Electronics	ET-18413	3	xx	2	5	80	20	50	25	175
4	Circuits and Networks	ET-18415	3	xx	2	5	80	20	50	25	175
5	Software Simulation Techniques	ET-18416	xx	xx	2	2	xx	xx	xx	50	50
6	Circuit Building II	ET-18419	xx	xx	4	4	xx	xx	xx	50	50
7	Industrial Electronics	ET-18420	3	xx	2	5	80	20	50	25	175
8	Academic Skills	ET-18421	xx	xx	2	2	xx	xx	xx	xx	xx
		Total	15	0	18	33	320	80	250	250	900

ET-18423 represents Sports And Cultural which is non-credit and non-exam in 4th Semester of 2 hours/week

Total Number of Credits = 33, Total Number of Student Contact Hours = 35 | Total Marks = 900

Abbreviations		
	TH	Theory
	TU	Tutorial
	PR	Practical
	X	No TW/EXAM(TH/PR/OR/ Online)
	ESA	End Semester Exam
	PA	Progressive assessment

- For progressive and continuous assessment two periodic tests of 20 marks each are for all the theory subjects. The average of these is added to the final theory examination marks, which is of 70 marks (except for online examinations).
- All term work marks are Internal.
- All practical exams/ oral are External and Internal .
- All online exams are Internal

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REVISED AND EFFECTIVE FROM JULY 2020	TEACHING AND EXAMINATION SCHEME	SEMESTER FIVE

ACADEMIC YEAR 2021-22		TEACHING SCHEME					EXAMINATION SCHEME				
SR.NO	SUBJECT TITLE	SUBJECT CODE	TH	TU	PR	CREDITS	THEORY		PRACTICAL / ORAL		GRAND TOTAL
							ESA	PA	ESA	PA	
1	Microprocessors and Microcontrollers	ET-18519	4	xx	2	6	80	20	50	25	175
2	Signals and Systems	ET-18512	3	1	2	6	80	20	50	25	175
3	Advanced Communication Systems	ET-18513	4	xx	2	6	80	20	50	25	175
4	Project I	ET-18514	xx	xx	2	2	xx	xx	xx	50	50
5	Basic Control Systems (E1)	ET-18520	4	xx	2	6	80	20	50	25	175
6	Vocational Training	ET-18516	xx	xx	6	(4+2)=6	xx	xx	50	50	100
7	Circuit Simulation and PCB Design	ET-18517	xx	xx	2	2	xx	xx	50	25	75
8	PLC Systems and Applications (E1)	ET-18518	4	xx	2	6	80	20	50	25	175
		Total	15	1	18	34	320	80	300	225	925

Total Number of Credits, Student Contact Hours = 34	Total Marks =	925

Abbreviations		
	TH	Theory
	TU	Tutorial
	PR	Practical
	XX	No TW/EXAM(TH/PR/OR/ Online)
	ESA	End Semester Exam
	PA	Progressive assessment
	E1	Elective One

- For progressive and continuous assessment two periodic tests of 20 marks each are for all the theory subjects. The average of these is added to the final theory examination marks, which is of 70 marks (except for online examinations).
- All term work marks are Internal.
- All practical exams/ oral are External and Internal .
- All online exams are Internal

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Diploma in Electronics & Telecommunication Engineering

REVISED AND EFFECTIVE FROM JANUARY 2021	TEACHING AND EXAMINATION SCHEME	SEMESTER SIX

ACADEMIC YEAR 2021-22

SR.NO	SUBJECT TITLE	SUBJECT CODE	TEACHING SCHEME TH	TU	PR	CREDITS	EXAMINATION SCHEME THEORY ESA	THEORY PA	PRACTICAL / ORAL ESA	PRACTICAL / ORAL PA	GRAND TOTAL
1	Mobile Communication(E2)	ET-18611	4	xx	2	6	80	20	50	25	175
2	Digital Signal Processing	ET-18612	3	1	2	6	80	20	50	25	175
3	Data Commn. & Comp. Networking(E2)	ET-18613	4	xx	2	6	80	20	50	25	175
4	Digital Communication	ET-18614	4	xx	2	6	80	20	50	25	175
5	Mechatronics(E3)	ET-18619	4	xx	2	6	80	20	50	25	175
6	Project II	ET-18616	xx	xx	4	4	xx	xx	50	50	100
7	Advanced Power Electronics (E3)	ET-18617	4	xx	2	6	80	20	50	25	175
8	Scilab	ET-18618	xx	xx	2	2	xx	xx	xx	50	50
9	Industrial Management and Quality Control (IMQC)	ET-18620	3	xx	xx	3	80	20	xx	xx	100
10	Technical Writing	ET-18621	xx	xx	2	2	xx	xx	xx	50	50
		Total	18	1	16	35	400	100	250	250	1000

Total Number of Credits, Student Contact Hours = 35 — Total Marks = 1000

Abbreviations			
		TH	Theory
		TU	Tutorial
		PR	Practical
		XX	No TW/EXAM(TH/PR/OR/ Online)
E2, E3	Elective Two and Three	ESA	End Semester Exam
		PA	Progressive assessment

- For progressive and continuous assessment two periodic tests of 20 marks each are for all the theory subjects. The average of these is added to the final theory examination marks, which is of 70 marks (except for online examinations).
- All term work marks are Internal.
- All practical exams/ oral are External and Internal .
- All online exams are Internal

ST. XAVIER'S TECHNICAL INSTITUTE, MAHIM, MUMBAI 400 016
Diploma in Electronics & Telecommunication Engineering

REVISED AND EFFECTIVE FROM JULY 2018	SUMMARY OF TEACHING / WEEK, CREDITS AND EXAMINATION SCHEME	SEMESTER ONE - SIX

ACADEMIC YEAR 2021-22		TEACHING SCHEME				EXAMINATION SCHEME				
SR.NO	SUBJECT TITLE	TH	TU	PR	CREDITS	THEORY		PRACTICAL / ORAL		GRAND TOTAL
						ESA	PA	ESA	PA	
1	Semester -- 1	20	3	10	33	320	80	200	225	825
2	Semester -- 2	16	3	16	35	320	80	300	250	950
3	Semester -- 3	16	1	16	33	320	80	200	150	750
4	Semester -- 4	15	0	18	33	320	80	250	250	900
5	Semester -- 5	15	1	18	34	320	80	300	225	925
6	Semester -- 6	18	1	16	35	400	100	250	250	1000
Total		100	09	94	203	2000	500	1500	1350	5350

ST. XAVIER'S TECHNICAL INSTITUTE, MAHIM, MUMBAI 400 016

Diploma in Electronics and Telecommunication Engineering

Reviewed and Effective from July 2018	**TEACHING AND EXAMINATION SCHEME**	**SEMESTER ONE**

Academic Year 2021-2022

Sr. No.	Subject Title	Subject Code	Teaching Scheme				Examination Scheme								
			TH	TU	PR	CREDITS	PAPER HRS	THEORY		PRACTICAL		ORAL		TERM WORK		TOTAL
								Max	Min	Max	Min	Max	Min	Max	Min	
1	Basic Mathematics	ET-18111	4	1	xx	5	3	100	40	xx	xx	xx	xx	xx	xx	100
2	Basic Electronics	ET-18121	4	xx	4	8	3	100	40	50	20	xx	xx	25	10	175
3	Basic Electrical Engineering	ET-18113	4	xx	2	6	3	100	40	50	20	xx	xx	25	10	175
4	Computer Applications	ET-18115	xx	xx	2	2	xx	xx	xx	50 (Online exam)	20	xx	xx	25	10	75
5	Electronic Materials & Components	ET-18116	2	2	xx	4	xx	xx	xx	xx	xx	50 (Online exam)	20	50	20	100
6	Professional Practices	ET-18117	2	xx	xx	2	xx	xx	xx	xx	xx	xx	xx	50	20	50
7	English Language	ET-18118	4	xx	2	6	3	100	40	xx	xx	xx	xx	50	20	150
	TOTAL		**20**	**3**	**10**	**33**		**400**		**150**		**50**		**225**		**825**

ET-18120 represents "Yoga" which is Non-Credit and Non-Exam in First Semester of 1 Hour/ Week

Total Number of Credits = 33

Total Number of Student Contact Hours = 34

Total Marks = 825

Abbreviations:

1)	TH	Theory
2)	TU	Tutorial
3)	PR	Practical
4)		No Theory Exam

Note:

1) For progressive and continuous assessment two periodic tests of 20 marks each are for all the theory subjects. The average of these is added to the final theory examination marks, which is of 80 marks (except for online examinations).

2) All term work marks are Internal.

3) All practical exams/ oral are External and Internal.

Prepared by Mr. Anil C. Gurav

Note:

- **Course codes changed and subjects and contents reviewed in July, 2018**
- **Academic Skills (ET-18119) removed.**
- **Basic Electronic Devices (ET-15112) removed.**
- **Basic Electronics (ET-18121; TH 3, PR 4) introduced.**
- **Communication Skills (ET-15114) shifted from Semester 1 to semester2.**

- **Subjects and contents reviewed in May, 2019**

Theory 4 Hr. each subject

- **Basic Mathematics**
- **Basic Electrical Engineering**
- **English Language**
- **Basic Electronics**

PROGRAMME TITLE : Diploma in Electronics & Telecomm. Engineering ***SEMESTER :*** One											
Course Code	Course Title	Prerequisite	Credits			Examination Scheme					
			L	1 Tutorial	Total	Theory TH	Theory TS	PR	OR	TW	Total
ET 18111	BASIC MATHEMATICS		4	1 Tu	5	80	20	-	-	-	100

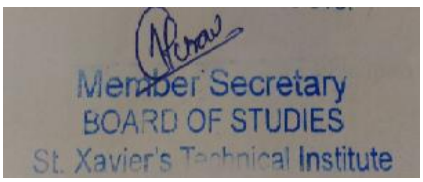
1) Theory paper duration 3 hrs.
2) Theory paper assessment is Internal and External.

RATIONALE:

This subject comes under the Foundation Course category and will enable the students to learn the basics of Engineering Mathematics. Knowledge of Engineering Mathematics will provide a base for the analysis and understanding of many technical subjects.

COURSE OUTCOMES &CO PO MAPPING

SEM I C101	BASIC MATHEMATICS (1ST COURSE IN FIRST YEAR)
C101.1	Evaluate problems on Logarithms and Partial fractions for mathematical applications.
C101.2	Solve problems on Determinants for Mathematical and Engineering applications.
C101.3	Use Trigonometric identities for simplifying various expressions.
C101.4	Apply concept of point/distance and straight lines for solving problems in geometrical applications.
C101.5	Apply concept of circles for solving problems in geometrical applications.
C101.6	Use properties of Dot Product & Cross Product to evaluate problems on vector Algebra and Calculate Work done and Moment of force .



Mapping of Course outcomes (COs) to Program outcomes (POs)

SEM I C101	BASIC MATHEMATICS (1ST COURSE IN FIRST YEAR) PREPARED BY : SD									
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
C101.1	3	1								
C101.2	3	1			1					
C101.3	3	2			1					
C101.4	3	2			1					
C101.5	3	2			1					
C101.6	3	1			1					
C 101 TOTAL	18	09	00	00	05	00	00	00	00	00
CORRELATION LEVEL	3	2	0	0	1	0	0	0	0	0

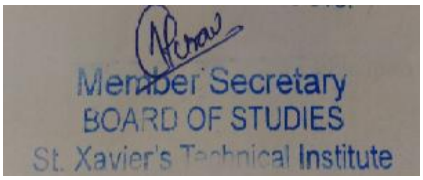
TABLE TO DECIDE CORRELATION LEVELS

CO SUM TOTAL	06	12	18
CORRELATION LEVEL	1	2	3

CO SUM TOTAL	0, 1, 2	3, 4, 5, 6, 7, 8	9, 10, 11, 12, 13, 14	15, 16, 17, 18
CORRELATIONLEVEL	0	1	2	3

Mrs. Sanchita Datta

Subject Expert



SECTION 1

Sr. No.	Name of the Topic	Periods	Marks
01	**ALGEBRA - C101.1, C101.2** 1.1 Logarithms: 1.1.1 Concept & Laws of logarithms; 1.1.2 Change of base 1.2 Partial Fractions: 1.2.1 To resolve proper fraction into partial fraction with denominator containing: (i) non repeated linear factors, (ii) repeated linear factors (iii) irreducible non repeated quadratic factors. 1.3 Determinants: 1.3.1 Definition, Expansion of Determinants of 2nd and 3rd Order 1.3.2 Solutions of simultaneous equations in two and three unknowns - (Cramer's method).	4 7 7	8 8 8
02	**TRIGONOMETRY - C101.3** 2.1 Definition of Radian – Trigonometric ratios of any angle, fundamental identities, examples based on fundamental identities. 2.2 Trigonometric ratios of Allied angles, compound angles, multiple angles (2A and 3A) – sum and difference of two trigonometric ratios, product formula (without proof, simple problems only) 2.3 Inverse circular functions - definitions only. Principal values of Inverse Trigonometric Ratios	14	16

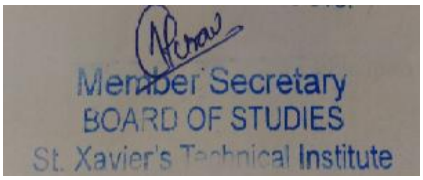
SECTION 2

Sr. No.	Name of the Topic	Periods	Marks
03	**CO-ORDINATE GEOMETRY - C101.4, C101.5** 3.1 Points and distance 3.1.1 Cartesian co-ordinate system, Distance between two given points 3.1.2 Section formula – internal division, external division, midpoint formula, Centroid of a triangle 3.2 Straight lines : 3.2.1 Various forms of the equation of a straight line leading to the general equation Ax + By + C = 0 3.2.2 Perpendicular distance of a point from a straight line 3.2.3 Angle between two straight lines 3.2.4 Conditions for two straight lines to be parallel and perpendicular to each other.	4 8	6 10

	3.3 Circles: 3.3.1 Standard Equation of a circle 3.3.2 Center Radius form of a circle 3.3.3 General Form of a circle 3.3.4 Diameter form of circle 3.3.5 The Circle through 3 points	6	6
04	**VECTOR ALGEBRA - C101.6** 4.1 Definition of vector, position vector, i, j, k vectors, algebra of vectors (Equality, Addition, Subtraction and Scalar Multiplication) 4.2 Direction ratios, direction cosines 4.3 Collinear and coplanar vectors 4.4 Section formula, mid-pt formula, centroid formula 4.5 Scalar product and its properties 4.6 Vector product and its properties 4.7 Physical applications of scalar and vector product – work done and moment of force about a point and line.	14	18

SUGGESTED SPECIFICATION TABLE FOR QUESTION PAPER DESIGN

Chapter No.	Title	Teaching Hours	Distribution of Theory Marks			
			R Level	U Level	A Level	Total Marks
Section I						
1	Algebra –Logarithms, Partial Fractions, Determinants	04 07 07	04 04 --	04 04 08	-- -- --	08 08 08
2	Trigonometry	14	--	10	06	16
Section II						
3	Coordinate Geometry- Points & Distance Straight Lines Circles	 04 08 06	 02 04 02	 04 04 --	 -- 02 04	 06 10 06
4	Vector Algebra	14	08	06	04	18
Total		64	26	36	18	80



IMPLEMENTATION STRATEGY

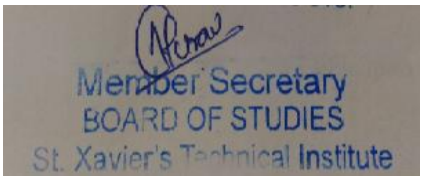
1. Teaching plan
2. Minimum 10 Tutorials

REFERENCES

S. No.	Author	Title	Edition	Year of Publication	Publisher & Address
1.	S.P. Deshpande	Mathematics for Polytechnic students (First Year)	11th	2006	Pune Vidyarthi Griha Prakashan
2.	Dilip T.Gaikwad	Basic Maths	2nd Edition	2011	S.Chand and CO. Ltd.
3.	Sameer Shah	Basic Mathematics	5th	2010	Tech-Max Publications, Pune
4.	V.K.Nirmale A.D. Wandhekar	Basic Mathematics	2nd	2018	Technical Publications

E- REFERENCES

https://www.britannica.com/science/logarithm
https://www.cuemath.com/algebra/partial-fractions/
https://ncert.nic.in/pdf/publication/exemplarproblem/classXII/mathematics/leep204.pdf
https://en.wikipedia.org/wiki/Trigonometry
https://www.cuemath.com/geometry/distance-between-two-points/
https://ncert.nic.in/ncerts/l/kemh110.pdf
https://ncert.nic.in/textbook/pdf/lemh204.pdf



PROGRAMME TITLE :Diploma in Electronics & Telecom. Engineering
SEMESTER :One

Course Code	Course Title	Prerequisite	Credits			Examination Scheme					
						Theory		PR	OR	TW	Total
			L	P	Total	TH	TS				
ET-18121	BASIC ELECTRONICS		4	4	8	80	20	50	-	25	175

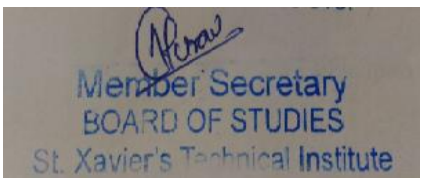
1) Theory paper duration 3 hrs.
2) Theory paper assessment is Internal and External.
3) The assessment of practical is Internal and External.

RATIONALE:

This subject comes under the Core Technology group and will enable the students to comprehend the theory, concepts, characteristics and working principles of basic electronic devices and their applications in electronic circuits. The knowledge of various devices acquired by the students will help them to design, test, troubleshoot basic electronic circuits.

COURSE OUTCOMES & CO PO MAPPING

SEM I C102	BASIC ELECTRONICS (2ND COURSE IN FIRST YEAR)
C102.1	Interpret the basic concept of Solid Material &Semiconductors
C102.2	Analyze the working principle of p-n junction
C102.3	Analyze the characteristics and working principle of Semiconductor (PN junction)and zener diode
C102.4	Measure and interpret different parameters of Rectifier circuits
C102.5	Use Rectifiers in power supply circuits
C102.6	Interpret the operation of different types of filter circuits and compare them



Mapping of Course outcomes (COs) to Program outcomes (POs)

SEM I C102	BASIC ELECTRONICS (2ND COURSE IN FIRST YEAR) PREPARED BY : AG									
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
C102.1	3					1				
C102.2	2	1	2	2		1				1
C102.3	3	2	2	2	1	1		2	1	1
C102.4	3	1	2			1			1	1
C102.5	3	1	2	2	1	1		2		
C102.6	3	1	2			1				
C 102 TOTAL	17	06	10	06	02	06	00	04	02	03
CORRELATION LEVEL	3	1	2	1	0	1	0	1	0	1

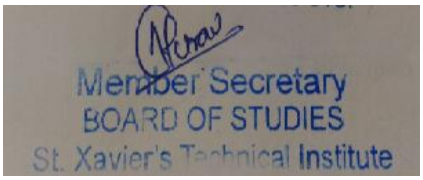
TABLE TO DECIDE CORRELATION LEVELS

CO SUM TOTAL	06	12	18
CORRELATION LEVEL	1	2	3

CO SUM TOTAL	0, 1, 2	3, 4, 5, 6, 7, 8	9, 10, 11, 12, 13, 14	15, 16, 17, 18
CORRELATION LEVEL	0	1	2	3

Mr. Anil Gurav

Subject Expert



SECTION 1

Sr. No.	Name of the Topic	Periods	Marks
01	STRUCTURE OF SOLIDS **C102.1** 1.1. Atom structure. 1.2. Atomic Number, Atomic Mass. 1.3. Electron Orbits, Sub Orbits / shell. 1.4. Distribution of electronics, Valence Orbit, Valence Electrons. 1.5. Energy in electrons & orbits. 1.6. Energy Level Diagram, Energy Bands ,Energy band diagram. 1.7. Material classification (based on Band theory). Insulator, Semiconductor, Conductor	12	12
02	SEMICONDUCTORS **C102.2,C102.3** 2.1 Introduction of Semiconductor 2.2 Types of Semiconductors 2.3 Intrinsic semiconductor 2.4 Extrinsic Semiconductor 2.4.1 Semiconductor Doping 2.4.2 N type Semiconductor 2.4.3 P type Semiconductor 2.5 Effect of Heat & Light on Semiconductor 2.6 Drift Current 2.7 Diffusion Current 2.8 PN Junction 2.8.1 Formation of PN junction ,Depletion Layer, Barrier Voltage 2.8.2 Junction Capacitance 2.8.3 Effect of Temperature on junction 2.9 PN Junction Diode 2.9.1 Forward Bias 2.9.2 Reverse Bias 2.9.3 V-I Characteristics 2.9.4 Diode Equivalent Circuit 2.9.5 Specifications & Applications 2.10 Zener Diode 2.10.1 Operating Principle under Forward Bias 2.10.2 Operating Principle under Reverse Bias 2.10.3 V-I Characteristics 2.10.4 Zener Diode as Regulator 2.10.5 Zener and Avalanche Breakdown mechanism. 2.10.6 Comparison with PN Junction	20	28

SECTION 2			
Sr. No.	Name of the Topic	Periods	Marks
03	RECTIFIERS: **C102.4 C102.5** 3.1 Introduction – definition, basic principle 3.2 Classification of rectifier circuits. 3.3 Half wave rectifier 3.3.1. Operation 3.3.2 Analysis – Idc, Vdc, Irms, Vrms, ripple factor r, Pdc, Pac, Rectification efficiency ,TUF, PIV, Voltage regulation 3.3.3 Merits and demerits of HWR 3.3.4 Basic Problems / Examples 3.4 Full wave Centre tapped rectifier 3.4.1 Operation 3.4.2 Analysis – Idc, Vdc, Irms, Vrms, ripple factor r, Pdc, Pac, Rectification efficiency ,TUF, PIV, Voltage regulation. 3.4.3 Merits and demerits of FWR 3.4.4 Basic Problems / Examples 3.5 Full wave Bridge rectifier 3.5.1 Operation 3.5.2 Analysis – Idc, Vdc, Irms, Vrms, ripple factor r, Pdc, Pac, Rectification efficiency ,TUF, PIV, Voltage regulation. 3.5.3 Merits and demerits of FWR 3.5.4 Basic Problems / Examples 3.6 Compare Rectifier circuits	20	24
04	FILTERS: **C102.5, C102.6** 4.1 Introduction, need and types. 4.2 Capacitor filter 4.2.1 Concept 4.2.2 Operation of HWR / FWR with C filter 4.2.3 Advantages and disadvantages of C filter 4.3 Inductor filter 4.3.1 Concept 4.3.2 Advantages and disadvantages of Inductor filter 4.4 PYE filter 4.4.1 Concept 4.4.2 Operation of HWR / FWR with PYE Filter 4.4.3 Advantages and disadvantages of PYEfilter 4.5 Comparison of C, L and Pye type filters.	12	16

LIST OF LABORATORY EXPERIENCES

EXP. NO.	TITLE	COURSE OUTCOME MAPPING
1	Use of Multi-meters and DC Power Supplies	**C102.1**
2	Use of Signal Generators and Oscilloscopes	**C102.1**
3	V-I characteristics of Semiconductor Diodes (Forward Bias)	**C102.3**
4	V-I characteristics of Semiconductor Diodes (Reverse Bias)	**C102.3**
5	Zener diode Characteristics	**C102.3**
6	Zener Diode as Regulator	**C102.3**
7	Half Wave Rectifier	**C102.4**
8	Full Wave Bridge Rectifier	**C102.4**
9	Full Wave Centre Tapped Rectifier	**C102.4**
10	Half Wave Rectifier with C Filter	**C102.6**
11	Full Wave Center tapped / BRIDGE Rectifier with C Filter	**C102.5**
12	Full Wave Center tapped Rectifier with Pye Filter	**C102.5**
13	Full Wave BRIDGE Rectifier with Pye Filter	**C102.6**

SUGGESTED SPECIFICATION TABLE FOR QUESTION PAPER DESIGN

Chapter No.	Title	Teaching Hours	Distribution of Theory Marks			
			R Level	U Level	A Level	Total Marks
Section I						
1	STRUCTURE OF SOLIDS	12	4	6	2	12
2	SEMICONDUCTORS	20	10	12	6	28
Section II						
3	RECTIFIERS	20	8	10	6	24
4	FILTERS	12	4	8	4	16
Total		64	26	36	18	80

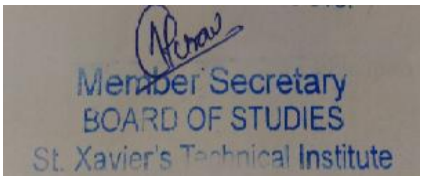
IMPLEMENTATION STRATEGY

1.Teaching plan
2.Minimum 10 practical's
3. Assignments
(Example : Market survey study of different types of Diodes with their ratings and applications, Power supply ratings, applications etc)

The table to measure the attainment levels for TERM WORK (on a rating scale of "out of 25') of the defined expected course outcomes is as shown in the format given below:

(Note:……the table should progress to the right for Lab Experience 7, 8, 9, ….and so on……)

LAB EXPERIENCE		1	2	3	4	5	6
	COURSE OUTCOMES	C102.1 (out of 25)	C102.1 (out of 25)	C102.2 (out of 25)	C102.2 (out of 25)	C102.2 (out of 25)	C102.3 (out of 25)
STUDENT SPNO							
1303001							
1303002							
1303004							
1303005							
1303006							
1303008							
1303011							
…….							



* The final % attainment level for TERM WORK of each course outcome may then be computed and the overall % attainment level for the course, for term work may then be calculated.

The table to measure the attainment levels for PRACTICAL EXAMINATION (on a rating scale of "out of 50') of the defined expected course outcomes is as shown in the format given below:

(Note:……the table should progress to the right for Lab Experience 7, 8, 9, ….and so on……)

LAB EXPERIENCE		**1**	**2**	**3**	**4**	**5**	**6**
	COURSE OUTCOMES	**C102.1 (out of 50)**	**C102.1 (out of 50)**	**C102.2 (out of 50)**	**C102.2 (out of 50)**	**C102.2 (out of 50)**	**C102.3 (out of 50)**
STUDENT SPNO							
1303001							
1303002							
1303004							
1303005							
1303006							
1303008							
1303011							
…….							

* The final % attainment level for PRACTICAL EXAMINATION of each course outcome may then be computed and the overall % attainment level for the course, for practical exam may then be calculated.

REFERENCES

Sr. No.	Author	Title	Edition	Year of Publication	Publisher & Address
1.	Robert Boylestad	Electronics Devices & Circuit Theory	9th	2009	PHI publisher
2.	G.K.Mital	Electronics Devices & Circuits	23rd	2006	Khanna Publication
3.	DR. R.S.Sedha	APPLIED ELECTRONICS	Revised Edition	2015	S CHAND Publication
4.	David Bell	Fundamentals of Electronic Devices	1st	1990	D B Taraporevala son & Co Pvt. Ltd. Mumbai
5.	Millman and Halkias	Electronics Devices and Circuits	1st	1985	McGraw Hills Inc., New Delhi-2

E-REFERENCES

https://www.tutorialspoint.com/signals_and_systems/index.htm

https://ocw.mit.edu/resources/res-6-007-signals-and-systems-spring-2011/lecture-notes/

https://freevideolectures.com/subject/signals-systems/

http://www.ws.binghamton.edu/fowler/fowler%20personal%20page/ee301.htm

https://nptel.ac.in/courses/108/104/108104100/

PROGRAMME TITLE : Diploma in Electronics & Telecom. Engineering
SEMESTER : One

Course Code	Course Title	Prerequisite	Credits			Examination Scheme					
						Theory		PR	OR	TW	Total
			L	P	Total	TH	TS				
ET 18113	BASIC ELECTRICAL ENGINEERING		4	2	6	80	20	50	-	25	175

1) Theory paper duration 3 hrs.
2) Theory paper assessment is Internal and External.
3) The assessment of practical is Internal and External.

RATIONALE:
This subject falls under the Core Technology category and will assist the students in understanding the theory, concepts and working principles of basic electrical components and circuits used in electrical systems along with their applications. The knowledge acquired by student will help them to design, test, analyze, troubleshoot and repair electrical systems and installations.

COURSE OUTCOMES & CO PO MAPPING

SEM I C103	BASIC ELECTRICAL ENGINEERING (3 RD COURSE IN FIRST YEAR)
C103.1	Illustrate the basic concept of electricity and its parameters
C103.2	Apply Network Theorems in practical electrical and electronic circuits
C103.3	Illustrate the basic concept of electrostatics and its parameters
C103.4	Use the knowledge of capacitance for the analysis of electronic circuits
C103.5	Analyse construction and working principle of of AC and DC bridges
C103.6	Illustrate the basic concept of electro-magnetism and its parameters

Mapping of Course outcomes (COs) to Program outcomes (POs)

SEM I C103	BASIC ELECTRICAL ENGINEERING (3 RD COURSE IN FIRST YEAR) PREPARED BY : SRB									
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
C103.1	2	1	2	-	-	-	-	-	3	1
C103.2	3	3	2	1	1	-	1	1	2	1
C103.3	2	1	1	1	2	1	1	1	2	1
C103.4	2	1	3	1	2	1	1	1	3	1
C103.5	1	2	3	1	1	1	1	1	2	1
C103.6	1	3	2	1	2	1	1	1	2	1
C 103 TOTAL	11	11	13	05	08	04	05	05	14	06
CORRELATION LEVEL	2	2	2	1	1	1	1	1	2	1

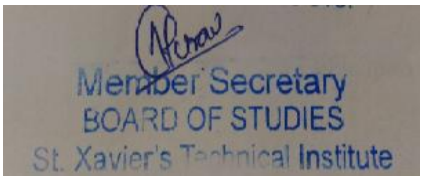
TABLE TO DECIDE CORRELATION LEVELS

CO SUM TOTAL	06	12	18
CORRELATION LEVEL	1	2	3

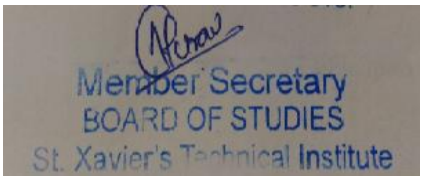
CO SUM TOTAL	0, 1, 2	3, 4, 5, 6, 7, 8	9, 10, 11, 12, 13, 14	15, 16, 17, 18
CORRELATION LEVEL	0	1	2	3

Mr. S. R. Borkar

Subject Expert

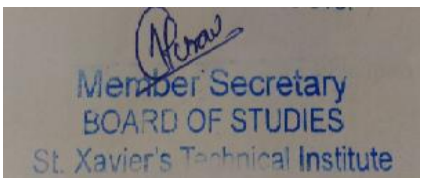


Sr. No.	Name of the Topic	Periods	Marks
	SECTION 1		
01	**FUNDAMENTALS OF ELECTRICITY C103.1** 1.1 Basic concept of electricity and its parameters. 1.2 Law of resistances 1.3 Temperature co-efficient of resistances 1.4 Ohm's law, resistances in series and parallel 1.5 Equivalent resistances of the simple d.c. circuit 1.6 Current and Voltage divide rule.	12	14
02	**NETWORK THEOREMS C103.2** 2.1 Kirchoff's current and voltage law 2.2 Mesh and nodal analysis in steady state condition 2.3 Star-delta transformation in the circuit 2.4 Source conversion 2.5 Superposition theorem 2.6 Analysis of Thevenin's Theorem 2.7 Analysis of Norton's Theorem	14	16
03	**ELECTROSTATICS C103.3** 3.1 Static electricity 3.2 Absolute and relative permittivity of the medium 3.3 Electric field, electrostatic induction, electric intensity 3.4 Gausis law	06	10
	SECTION 2		
04	**CAPACITANCE C103.4** 4.1 Basic concept and construction of capacitor, capacitance, capacitive reactance 4.2 Parallel plate capacitor with different medium 4.3 Capacitor in series and parallel 4.4 Current-voltage relationship in a Capacitor 4.5 Charging and discharging of Capacitor with RC circuit	08	12
05	**AC AND DC BRIDGES C103.5** 5.1 Wheatstone bridge for resistance measurement 5.2 Kelvin bridge 5.3 Maxwell's induction bridge 5.4 Hay's bridge 5.5 Schering bridge	12	14
06	**ELECTRO MAGNETISM C103.6** 6.1 Comparison between electric and magnetic circuit 6.2 Parameters of magnetic field 6.3 Force on current carrying conductor due to a magnetic field. 6.4 Faraday's law of electromagnetic induction 6.5 Static and dynamic induced emf 6.6 B-H curve and Hysteresis loop	12	14



LIST OF LABORATORY EXPERIENCES

EXP. NO.	TITLE	COURSE OUTCOME MAPPING
1	Verify Ohms Law for the given circuit	**C103.1**
2	Verify Kirchoff's Current Law for the given circuit	**C103.2**
3	Verify Kirchoff's Voltage Law for the given circuit	**C103.2**
4	The Loaded Voltage Divider	**C103.1**
5	The Current Divider	**C103.1**
6	Verification of Thevenin's Theorem	**C103.2**
7	Verification of Norton's Theorem	**C103.2**
8	Verification of Superposition Theorem	**C103.2**
9	Phase Relation in R-C Circuit	**C103.4**
10	Wheatstone's Bridge	**C103.5**
11	Maxwell's Bridge	**C103.5**
12	Schering's Bridge	**C103.5**
13	Maximum Power Transfer Theorem	**C103.2**



SUGGESTED SPECIFICATION TABLE FOR QUESTION PAPER DESIGN

Chapter No.	Title	Teaching Hours	Distribution of Theory Marks			
			R Level	U Level	A Level	Total Marks
Section I						
1	Fundamental of Electricity	12	8	6	0	14
2	Network Theorems	14	6	8	2	16
3	Electrostatics	06	6	4	0	10
Section II						
4	Capacitance	08	8	4	0	12
5	AC and DC bridges	12	6	4	4	14
6	Electromagnetism	12	6	6	2	14
Total		64	40	32	8	80

The table to measure the attainment levels for TERM WORK (on a rating scale of "out of 25') of the defined expected course outcomes is as shown in the format given below: (Note:……the table should progress to the right for Lab Experience 7, 8, 9, ….and so on……)

LAB EXPERIENCE		1	2	3	4	5	6
	COURSE OUTCOMES	C103.1 (out of 25)	C103.2 (out of 25)	C103.2 (out of 25)	C103.1 (out of 25)	C103.1 (out of 25)	C103.2 (out of 25)
STUDENT SPNO							
1303001							
1303002							
1303004							
1303005							
1303006							
1303008							
1303011							
…….							

* The final % attainment level for TERM WORK of each course outcome may then be computed and the overall % attainment level for the course, for term work may then be calculated.

The table to measure the attainment levels for PRACTICAL EXAMINATION (on a rating scale of "out of 50') of the defined expected course outcomes is as shown in the format given below: (Note:……the table should progress to the right for Lab Experience 7, 8, 9, ….and so on……)

LAB EXPERIENCE		1	2	3	4	5	6
	COURSE OUTCOMES	C103.1 (out of 25)	C103.2 (out of 25)	C103.2 (out of 25)	C103.1 (out of 25)	C103.1 (out of 25)	C103.2 (out of 25)
STUDENT SPNO							
1303001							
1303002							
1303004							
1303005							
1303006							
1303008							
1303011							

* The final % attainment level for PRACTICAL EXAMINATION of each course outcome may then be computed and the overall % attainment level for the course, for practical exam may then be calculated.

IMPLEMENTATION STRATEGY

1. Teaching plan
2. Minimum 10 practicals / assignments
3. Industry visit.

REFERENCES

S. No.	Author	Title	Edition	Year of Publication	Publisher & Address
1.	B.L. Theraja	Electrical Technology Vol-I	II	2008	S chand &Co Ramnagar New Delhi
2.	B.P. Patil	Installation testing and maintenance of electrical equipment	I	2008	S chand &Co Ramnagar New Delhi
3.	V.N. Mittale	Basic electrical engineering			
4.	B.L. Theraja	Electrical Technology			
5.	B.H. Deshmukh	Elements of Electrical Engineering			

E-REFERENCES

http://www.griet.ac.in/nodes/BEEE.pdf
https://www.allaboutcircuits.com/textbook/
https://www.academia.edu/42933156/Basic_Electrical_Engineering_VK_Mehta
https://svbitec.files.wordpress.com/2013/09/introduction-to-electrical-engineering.pdf

PROGRAMME TITLE : Diploma in Electronics & Telecom. Engineering
SEMESTER : One

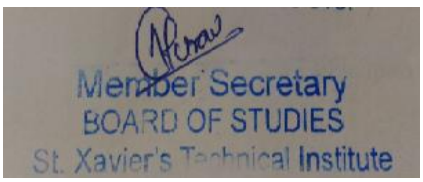
Course Code	Course Title	Prerequisite	Credits			Examination Scheme					
						Theory		On-line	OR	TW	Total
			L	P	Total	TH	TS				
ET 18115	COMPUTER APPLICATIONS **(No Theory exam)**		-	2	2	-	-	50	-	25	75

1) **There is <u>ON LINE EXAM</u>** to be conducted and the assessment of this **on line** exam is Internal.
2) The assessment of Term Work is Internal

RATIONALE:
Computer Applications is a Foundation course. This subject will develop the understanding of concepts of operating systems, word processing, electronic spreadsheets, creating PowerPoint presentations, use of internet and will allow the student to apply all these, to assist in the gathering of information, learning, comprehending, presenting and formatting of the content and matter learnt in the other subjects.

COURSE OUTCOMES & CO PO MAPPING

SEM I C104	COMPUTER APPLICATIONS - PR (4TH COURSE IN FIRST YEAR)
C 104.1	Analyze the concepts of operating systems.
C 104.2	Demonstrate the concepts of word processing.
C 104.3	Demonstrate the concepts of electronic spreadsheets.
C 104.4	Demonstrate the concepts of creating Power Point presentations.
C 104.5	Analyze the concepts of internet.
C 104.6	Analyze the concepts of email in day to day life.



Mapping of Course outcomes (COs) to Program outcomes (POs)

SEM I C 104	COMPUTER APPLICATIONS - PR (4TH COURSE IN FIRST YEAR) PREPARED BY : SG									
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
C 104.1		3	3	3				3	1	3
C 104.2		2	3	3				3	1	3
C 104.3		2	3	3				3	1	3
C 104.4		2	3	3				3	1	3
C 104.5		2	3	3				3	1	3
C 104.6		2	3					3	1	3
C 104 TOTAL	00	13	18	15	00	00	00	18	06	18
CORRELATION LEVEL	0	2	3	3	0	0	0	3	1	3

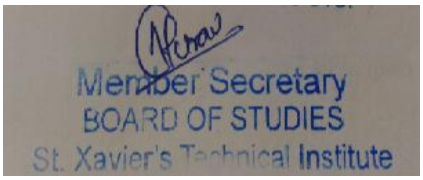
TABLE TO DECIDE CORRELATION LEVELS

CO SUM TOTAL	06	12	18
CORRELATION LEVEL	1	2	3

CO SUM TOTAL	0, 1, 2	3, 4, 5, 6, 7, 8	9, 10, 11, 12, 13, 14	15, 16, 17, 18
CORRELATION LEVEL	0	1	2	3

Mrs. Surbhi. G.

Subject Expert



Sr. No.	Name of the Topic	Periods
1	**Working With DOS and WINDOWS CO 104.** 1.1 Introduction to Disk Operating System 1.2 Basic DOS commands CLS, DATE, TIME, CD, MD, RD, DIR, COPYCON, COPY, REN, DEL, TYPE 1.3 Introduction to windows OS 1.4 The User Interface 1.4.1. Using Mouse and Moving Icons on the screen 1.4.2. The My Computer Icon 1.4.3. The Recycle Bin 1.4.4. Status Bar, Start and Menu & Menu-selection 1.4.5. Running an Application 1.4.6. Windows Explorer Viewing of File, Folders and Directories 1.4.7. Creating and Renaming of files and folders 1.4.8. Opening and closing of different Windows 1.5 Windows Setting 1.5.1. Control Panels 1.5.2. Wall paper and Screen Savers 1.5.3. Setting the date and Sound 1.5.4. Concept of menu Using Help 1.6 Advanced Windows 1.6.1. Using right Button of the Mouse 1.6.2. Creating Short cuts 1.6.3. Basics of Window Setup 1.6.4. Notepad 1.6.5 Window Accessories	

2	**MS WORD** : **C 104.1 C 104.2** 2.1 Introduction to office tools, word processing, Microsoft word 2.2 Creating & formatting a document 2.3 Working with header, footer in a document 2.4 Auto text, Auto correct 2.5 Grammar & Spell check 2.6 Page setup, alignments of text 2.7. Inserting & sizing a document (pictures, objects) 2.8 Open, close, save, print and preview a document 2.9 Find & replace a text 2.10 Create & remove hyperlink 2.11 Create tables – insert/delete rows & columns 2.12 Template (Letter, Fax, Memo, Report)	
3	**MICROSOFT EXCEL : C 104.3** 3.1 Introduction to Electronic Spreadsheet 3.2 Create & Format worksheet 3.3 Inserting data into worksheet 3.4 Enter Formulas & Functions 3.5 Create different types of charts 3.6 Moving, sizing, copying charts 3.7 Auto Fill 3.8 Split windows, freeze panes 3.9 Goal seek	
4	**MICROSOFT POWER POINT : C 104.4** 4.1 Introduction 4.2 Creating a presentation 4.3 Features of Power Point 4.4 Auto Wizard 4.5 Viewing & Editing a Presentation 4.6 Inserting, Moving, Hiding & Deleting slides 4.7 Inserting pictures & clip art 4.8 Opening, Saving & Printing Presentation 4.9 Creating and Enhancing Table 4.10 Slide layouts 4.11 Adding Transition and Build effects	
5	**INTERNET & E-MAIL APPLICATIONS C 104.5 C 104.6** 5.1 Concept of Internet 5.2 Internet Browser & Browsing the web 5.3 Services on Internet 5.4 E-mail services 5.5 Search Engines 5.6 E shopping 5.7 Chat services 5.8 Searching information	

LIST OF LABORATORY EXPERIENCES

EXP. NO.	TITLE	COURSE OUTCOME MAPPING
	The Evolution, Genealogy and Structure of DOS	
1	EXECUTION OF INTERNAL DOS COMMANDS	C 104.1
	DOS COMMAND QUESTIONS EXERCISE	
	SOME IMPORTANT SCREEN DISPLAYS OF WINDOWS XP	
2	FEATURES OF WINDOWS OPERATING SYSTEM (PART 1)	C 104.1
3	FEATURES OF WINDOWS OPERATING SYSTEM (PART 2)	C 104.1
	SOME IMPORTANT SCREEN DISPLAYS OF MICROSOFT WORD AND ITS FEATURES	
4	FEATURES OF MICROSOFT WORD (PART 1)	C 104.2
5	FEATURES OF MICROSOFT WORD (PART 2)	C 104.2
6	ASSIGNMENT TO BE DONE IN MICROSOFT WORD	C 104.2
7	SOME SCREEN DISPLAYS OF MICROSOFT EXCEL AND ASSIGNMENT	C 104.3
	SOME SCREEN DISPLAYS OF MICROSOFT POWERPOINT AND ITS FEATURES	
8	ASSIGNMENT TO BE DONE IN MICROSOFT POWERPOINT	C 104.4
9	INTERNET AND ITS APPLICATIONS (E-MAIL, CHAT, ETC.)	C 104.5
10	INTERNET AND ITS APPLICATIONS (SEARCHING AND DOWNLOADING)	C 104.6
11	ASSIGNMENT IN MICROSOFT POWERPOINT	C 104.4

The table to measure the attainment levels for TERM WORK (on a rating scale of "out of 50') of the defined expected course outcomes is as shown in the format given below:

(Note:……the table should progress to the right for Lab Experience 7, 8, 9, ….and so on……)

LAB EXPERIENCE		1	2	3	4	5	6
	COURSE OUTCOMES	C 104.1 (out of 25)	C 104.1 (out of 25)	C 104.1 (out of 25)	C 104.2 (out of 25)	C 104.2 (out of 25)	C 104.2 (out of 25)
STUDENT SPNO							
1303001							
1303002							
1303004							
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1303008							
1303011							
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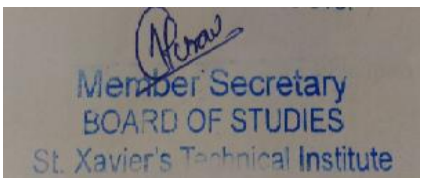
….							

* The final % attainment level for TERM WORK of each course outcome may then be computed and the overall % attainment level for the course, for practical exam may then be calculated.

REFERENCES :

S. No.	Author	Title	Edition	Publisher & Address
1	Ron Mansfield	Microsoft Office	2nd	BPB publications New Delhi
2	Christian Crumlish	ABC'S of the Internet	2nd	BPB publications New Delhi
3	Brian Underdahl	Windows2000	2nd	IDG Book India Pvt. Ltd.
4	Heidi Steele	Word 2000	2nd	Techmedia
5	Sharon Podlin	Excel 2000	2nd	Techmedia
6	Clay Shirky	The Internet	2nd	TCB



PROGRAMME TITLE : Diploma in Electronics & Telecomm. Engineering
SEMESTER : One

Course Code	Course Title	Prerequisite	Credits			Examination Scheme					
						Theory		PR	On-line	TW	Total
			L	Tutorial	Total	TH	TS				
ET 18116	ELECTRONIC MATERIALS & COMPONENTS **(No Theory exam)**		2	2	4	-	-	-	50	50	100

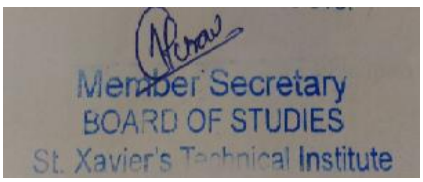
1) There is no theory exam
2) There is no practical exam but there is **ONLINE exam**
3) The assessment of this on line exam is Internal
4) The assessment of term work marks is Internal

RATIONALE:

This subject belongs to the Core Technology group and will enable students to comprehend the concepts, construction and working principles of basic electronic components and their applications in electronic systems. The knowledge acquired by the student will help them to design, test, troubleshoot and rectify faults in electronic circuits.

COURSE OUTCOMES & CO PO MAPPING

SEM I C105	ELECTRONICS MATERIALS & COMPONENTS (5TH COURSE IN FIRST YEAR)
C105.1	Interpret the applications of conducting & insulating materials
C105.2	Illustrate the construction and characteristics of wires, cables, fuses, relays, switches and connectors, piezo crystals
C105.3	Demonstrate the construction, specifications and applications of different types of resistors , capacitors and inductors, different types of magnetic materials and transformers
C105.4	Appraise the manufacturing of different semiconductor devices and ICs



Mapping of Course outcomes (COs) to Program outcomes (POs)

SEM I C105	ELECTRONICS MATERIALS & COMPONENTS (5TH COURSE IN FIRST YEAR) PREPARED BY : RS									
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO 10
C105.1	1	1	3			2		1		2
C105.2	3	1	3		3	2		2		3
C105.3	3	3	3	3	3	1		3		3
C105.4	2	3	3	2	2			2		2
C 105 TOTAL	9	8	12	5	8	5		8		10
CORRELATION LEVEL	2	2	3	1	2	1		2		3

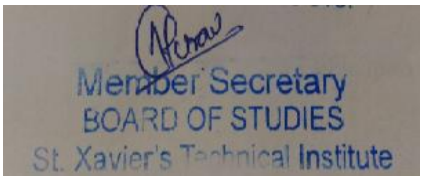
TABLE TO DECIDE CORRELATION LEVELS

CO SUM TOTAL	04	8	12
CORRELATION LEVEL	1	2	3

CO SUM TOTAL	0,1	2,3,4,5,	6, 7, 8,9	10, 11, 12
CORRELATION LEVEL	0	1	2	3

Mr. RakeshSaroj

Subject Expert

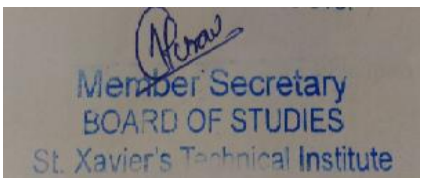


Sr. No.	Name of the Topic	Periods
01	**CONDUCTING AND INSULATING MATERIALS: C105.1** 1.1 Applications of Conductors: Copper, aluminum, iron, gold, silver, high resistivity alloys. 1.2 Applications of insulating materials: Glass, Mica, Paper, Epoxy-Resins, Laminated sheets, Plastics, Polypropylene, Teflon, Polyester, PVC, Varnishes, Enamels.	02
02	**WIRES AND CABLES: C105.2** Construction and Characteristics of: 2.1 Wires: single strand, hook-up, multi strand wires. 2.2 Cables: ribbon cable, twin lead, coaxial cable.	02
03	**RESISTORS: C105.3** 3.1 Construction, specifications, and Applications of: 3.1.1 Fixed Resistors: Crack carbon, film resistor ,Wire wound, Metal film – Precision, Ceramic, Fusible, decade box. 3.1.2 Variable Resistors: Presets, Potentiometers, Slider Potentiometer, 10 turn potentiometer, Potentiometer with switch, Rheostats, variable resistors. 3.1.3 Thermistors (PTC and NTC), Light Dependent Resistors. Color Coding of resistors with problems. 3.3 Testing of resistor on a multi-meter.	05
04	**CAPACITORS: C105.3** 4.1 Construction, specifications, and Applications of: 4.1.1 Fixed capacitors: paper, polyester, mica, ceramic, Electrolytic. 4.1.2 Variable capacitors: air, plastic, ceramic, gang, padder / trimmer. Varactor / varicap 4.2 Colour code of capacitor with problems. 4.3 Testing of a capacitor on a multi-meter.	05
05	**PIEZO-CRYSTALS: C105.2** Construction, principle of working, applications.	01
06	**MAGNETIC MATERIALS: C105.3** Characteristics and Applications of magnetic materials: Ferrite: hard and soft, Permanent magnets.	01

Sr. No.	Name of the Topic	Periods
07	**INDUCTORS : C105.3** Construction, specifications, and Applications of different types of inductors.	02
08	**TRANSFORMERS : C105.3** 8.1 Construction, specifications, and Applications of: Low frequency transformers, RF transformers 8.2 Testing a transformer.	02
09	**FUSES : C105.2** Construction and working of: Slow and Fast Blow fuses, fusible resistors	02
10	**RELAYS : C105.2** Construction, Specifications and Applications of: Relays, reed relays, solid state relays.	02
11	**SWITCHES AND CONNECTORS : C105.2** Construction, Specifications, and Applications of: SPST, SPDT, DPST, DPDT, Toggle, Push Button, Rotary.	04
12	**SEMICONDUCTOR DEVICES AND ICs : C105.4** Manufacturing of diodes, transistors, and surface mounted devices.	04

IMPLEMENTATION STRATEGY:

1. Teaching plan.
2. Minimum 10 tutorial/ assignments for discussion with teacher **as per lab manual**.
3. All the term work related activities are to be undertaken during the tutorial hours.
4. ***TOTAL TERM WORK MARKS = 50.***



LIST OF TUTORIAL ASSIGNMENT/ EXPERIENCES

EXP. NO.	TITLE	COURSE OUTCOME MAPPING
1	Conductors in Electronic and Electrical	**C105.1**
2	Types of Resistors	**C105.3**
3	Colour coding of Resistors	**C105.3**
4	Fuses and Switches	**C105.2**
5	Types of Capacitors	**C105.3**
6	Types of Inductors and Transformers	**C105.3**
7	Relays	**C105.2**
8	Thermistors	**C105.3**
9	Light Dependant Resistors	**C105.3**
10	Identification and Testing of Components	**C105.4**

The table to measure the attainment levels for TERM WORK (on a rating scale of "out of 50') of the defined expected course outcomes is as shown in the format given below:

(Note:……the table should progress to the right for Lab Experience 7, 8, 9, ….and so on……)

LAB EXPERIENCE		1	2	3	4	5	6
	COURSE OUTCOMES	C105.1 (out of 50)	C105.3 (out of 50)	C105.3 (out of 50)	C105.2 (out of 50)	C105.3 (out of 50)	C105.4 (out of 50)
STUDENT SPNO							
1303001							
1303002							
1303004							
1303005							
1303006							
1303008							
1303011							
…….							
…….							
……							
….							

* The final % attainment level for TERM WORK of each course outcome may then be computed and the overall % attainment level for the course, for practical exam may then be calculated.

REFERENCES :

Sr. No.	Author	Title	Edition	Year of Publication	Publisher & Address
1.	Madhuri Joshi	Electronic Materials & Components	2nd	1989	Wheeler Publishing
2.	Decker A. J.	Electrical Engineering. Materials	1st	1986	Prentice Hall of India Ltd. New Delhi

E-REFERENCES :

https://www.tutorialspoint.com

https://ocw.mit.edu/resources

https://freevideolectures.com

PROGRAMME TITLE : Diploma in Electronics & Telecom. Engineering
SEMESTER : One

Course Code	Course Title	Prerequisite	Credits			Examination Scheme					
						Theory		PR	OR	TW	Total
			L	P	Total	TH	TS				
ET 18117	PROFESSIONAL PRACTICES **(No Theory exam)**		2	-	2	-	-	-	-	50	50

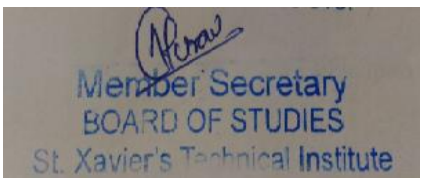
The assessment of term work marks is Internal.

RATIONALE :

The objective of most diploma programmes is to produce skilled technicians who can efficiently meet industry requirements. Due to globalization and competition in the industrial and service sectors, generally the selection procedure for the job is based on campus interviews or competitive tests. While selecting candidates the normal practice adopted is to scrutinize the general level of confidence, ability to communicate and attitude, in addition to knowledge of basic technological concepts.
The purpose of introducing Professional Practices, which comes under the Foundation group, is to provide an opportunity to students to undergo activities which will enable them to develop confidence to be able to work effectively in a professional environment. Industrial visits, expert lectures, seminars on technical topics and group discussions are the activities in the planned schedule of this subject.

COURSE OUTCOMES & CO PO MAPPING

SEM I C106	PROFESSIONAL PRACTICES (6TH COURSE IN FIRST YEAR)
C106.1	Develop confidence to be able to work effectively in a professional environment
C106.2	Acquire information from different sources.
C106.3	Interpret the data acquired from different sources.
C106.4	Prepare reports on industrial visit, expert lecture or for a given topic.
C106.5	Present given topic in a seminar.
C106.6	Interact with peers to share thoughts.



Mapping of Course outcomes (COs) to Program outcomes (POs)

SEM I C106	PROFESSIONAL PRACTICES (6TH COURSE IN FIRST YEAR) PREPARED BY : VV									
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
C106.1					2		2	3	3	3
C106.2					2		2	3	3	3
C106.3					2		2	3	3	3
C106.4					2		2	3	3	3
C106.5					2		2	3	3	3
C106.6					2		2	3	3	3
C 106 TOTAL	00	00	00	00	12	00	12	18	18	18
CORRELATION LEVEL	0	0	0	0	2	0	2	3	3	3

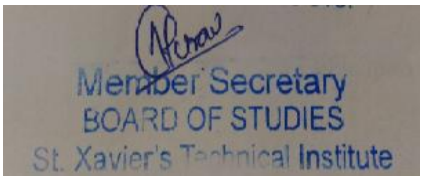
TABLE TO DECIDE CORRELATION LEVELS

CO SUM TOTAL	06	12	18
CORRELATION LEVEL	1	2	3

CO SUM TOTAL	0, 1, 2	3, 4, 5, 6, 7, 8	9, 10, 11, 12, 13, 14	15, 16, 17, 18
CORRELATION LEVEL	0	1	2	3

Mr. Vijay Vaghela

Subject Expert



Sr. No.	Name of the Topic	Periods
1	**INDUSTRIAL VISITS C 106.1** Structured industrial visits be arranged and report of the same should be submitted by the individual student, to form a part of the term work. Visit any IT industry/computer center. Study their network (Cable layout, devices used/software/costing).	08
2	**The Guest Lecture/s from field/industry experts, professionals is/are to be arranged (minimum 3 nos.) from the following or like topics. The brief report is to be submitted on the guest lecture by each student as part of Term work. C 106.3, C 106.4** IT – Current Scenario Software engineering industrial applications Animation techniques Certification course guidance Carrier guidance Preparation of Bio-data Entrepreneurship development E-commerce Any other suitable topic	07
3	**Information Search C 106.2, C 106.3, C 106.4, C 106.6** Information search can be done through manufacturers catalog, Internet, Magazines, Books etc. and submit the report. Topics can be suggested with the consent of the relevant teacher and the discussion among the students.	07
4	**Group Discussion: C 106.5, C 106.6** The students should discuss in group of six to eight students and write a brief report on the same as a part of term work. The faculty members may select the topic of group discussions. Some of the suggested topics are : i) Current issues ii) Load shedding and remedial measures iii) Use of mobile in college campus iv) Brain drain v) Internet surfing good or bad vi) Any another suitable topic	10

Note:

1) **The marks indicated are to be considered for the distribution of term work marks on the basis of assigned classroom activities. Attendance also will be considered for the overall term work marks.**
2) **The teacher can also conduct workshops on role play, etc. with smaller groups of students.**

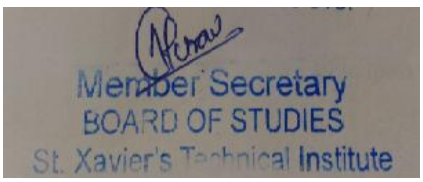
LIST OF CLASSROOM ASSIGNMENTS/ EXPERIENCES

EXP. NO.	TITLE	COURSE OUTCOME MAPPING
1	Aim in life and reason/ purpose of joining the engineering field	**C106.1**
2	Use/ objective of providing listing of reference books in the syllabus	**C106.2**
3	Presentation planning, requirements and giving presentation on any technical topic	**C106.3**
4	Group discussion on any topic related to current issues	**C106.5**
5	Group discussion on any topic related to current issues	**C106.6**
6	Writing/ providing "References" for research papers and presentations	**C106.2**
7	Purpose of "back index" and using/reading the same in text books/ reference books	**C106.2**
8	Making/ writing notes from reference books	**C106.4**
9	Writing Bio-data, CVs and Resume	**C106.1**
10		
11		
12		

The table to measure the attainment levels for TERM WORK (on a rating scale of "out of 50') of the defined expected course outcomes is as shown in the format given below: (Note:……the table should progress to the right for Lab Experience 7, 8, 9, ….and so on……)

LAB EXPERIENCE		1	2	3	4	5	6
	COURSE OUTCOMES	C106.1 (out of 50)	C106.2 (out of 50)	C106.3 (out of 50)	C106.5 (out of 50)	C106.6 (out of 50)	C106.2 (out of 50)
STUDENT SPNO							
1303001							
1303002							
1303004							
1303005							
1303006							
…….							
…….							

* The final % attainment level for TERM WORK of each course outcome may then be computed and the overall % attainment level for the course, for practical exam may then be calculated.



PROGRAMME TITLE: Diploma in Electronics & Telecom. Engineering ***SEMESTER :*** One											
Course Code	Course Title	Prerequisite	Credits			Examination Scheme					
						Theory		PR	OR	TW	Total
			L	P	Total	TH	TS				
ET 18118	ENGLISH LANGUAGE		4	2	6	80	20	-	-	50	150

1) Theory paper duration 3 hrs.
2) Theory paper assessment is Internal and External
3) Term Work assessment is Internal with aid of Language Lab Software

RATIONALE:

English is a prominent business language all over the world. Surveys and studies have shown that cross-border business communication occurs primarily in English. The fluency in the English language has become a prerequisite skill for engineering professionals who wish to enter a global workforce. Proficiency in English boosts the career growth of professional. Practical sessions in the English Language Lab with the Orell Interactive English Software, help in assisting the students to use grammatical and vocabulary with accuracy. This subject attempts to bring about learning of various aspects of the spoken English Language through practice with numerous examples and comprehension exercises. Thus, the target of this subject is to inculcate a greater amount of effectiveness in the manner of using the English Language in formal, informal and social situations.

COURSE OUTCOMES & CO PO MAPPING

SEM I C107	ENGLISH LANGUAGE (7TH COURSE IN FIRST YEAR)
C107.1	Use sentences with correct grammatical soundness to enhance communication skills.
C107.2	Compose dialogues and paragraphs for different situations.
C107.3	Summarize passages using the techniques of comprehension.
C107.4	Interpret the meaning of a given text through oral or written form.
C107.5	Use relevant words as per context for various situations.
C107.6	Pronounce the words and sentences correctly.

Mapping of Course outcomes (COs) to Program outcomes (POs)

SEM I C107	ENGLISH LANGUAGE (7TH COURSE IN FIRST YEAR) PREPARED BY : C De									
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
C107.1	1			1	1	2		2	3	3
C107.2	1			3	3	3	3	2	3	3
C107.3	1		1	2	3	3	2	2	3	3
C107.4	1		1	2	3	3	2	2	3	3
C107.5					2	3		2	3	3
C107.6					2	1	3	2	3	3
C 107 TOTAL	4		2	8	14	15	10	12	18	18
CORRELATION LEVEL	1		0	1	2	3	2	2	3	3

TABLE TO DECIDE CORRELATION LEVELS

CO SUM TOTAL	06	12	18
CORRELATION LEVEL	1	2	3

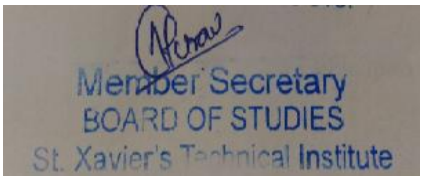
CO SUM TOTAL	0, 1, 2	3, 4, 5, 6, 7, 8	9, 10, 11, 12, 13, 14	15, 16, 17, 18
CORRELATION LEVEL	0	1	2	3

Mr. Mangesh Patil (VES Polytechnic)
Ms. Chevon De Souza

Subject Experts

OBJECTIVES:

1. Comprehend the given passages.
2. Answer the questions correctly based on seen and unseen passages.
3. Increase the vocabulary store.
4. Apply the rules of grammar for correct writing.
5. Develop necessary listening skills to acquire language.



SECTION 1			
Sr. No.	**Name of the Topic**	**Periods**	**Marks**
1.	**Unit – I: Applied Grammar C107.1** 1.1. Parts of speech 1.2. Articles: definite and indefinite 1.3. Sentence pattern 1.4. Tenses 1.5. Types of sentences: assertive, imperative, exclamatory, interrogative 1.6. Active and passive voice 1.7. Direct and indirect Speech 1.8. Punctuation	12	15
2.	**Unit– II: Paragraph and Dialogue Writing C107.2** 2.1. Types of paragraph i. Technical ii. Descriptive iii. Narrative 2.2. Dialogue writing i. In formal and informal situations. ii. Greetings ,development of dialogue and closing sentence	6	10
3.	**Unit– III: Comprehension Part 1 C107.3, C107.4** 3.1. Importance of comprehension 3.2. Seen Passages i. Shiva's Blessing ii. Dare to Dream: N. R. Narayana Murthy iii. History Maker: Malathi Holla iv. Say No to Plastic Bags 3.3. Unseen passages (academic and general text) 3.4. Interpretation of passages in written and spoken form	14	15

SECTION 2			
Sr. No.	**Name of the Topic**	**Periods**	**Marks**
4.	**Unit– IV: Comprehension Part 2 C107.3, C107.4** 4.1 Seen Passages i. Grind ii. Pioneers Don't Have Role Models iii. Save Yourself iv. A Messiah for The Abandoned Sick	14	15
5.	**Unit– V: Lexis C107.5** 5.1 Rules of spelling 5.2 Words often confused 5.3 Collocations 5.4 Idioms	10	15
6.	**Unit-VI: Listening Skills C107.6** 6.1 Introduction to listening skills 6.2 Role of listening in English language learning 6.3 Listening comprehension 6.4 Techniques to develop listening comprehension	08	10

IMPLEMENTATION STRATEGY:

THEORY

The text (A Text Book on English – Publisher MSBTE) consists of 10 Articles/Lessons out of which 08 will be taught as a part of the curriculum. The matter to be referred to for is to be taken entirely from this text book. References to the same text book or any other book may be made for Section 2.

NOTE: The text book mentioned above and also in the "REFERENCES" below which is subjected to change during subsequent academic years.

LIST OF ASSIGNMENT/ EXPERIENCES – FOR TERM WORK

The term work will consist of 09 Assignments (subject to change as per teacher's instruction/ decision):

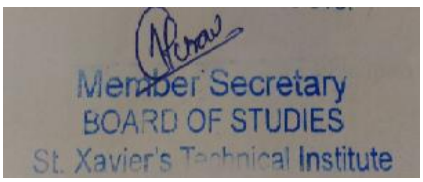
The **assignments listed below** will carry Term Work marks **out of 50**

ASS. NO.	TITLE	COURSE OUTCOME
1	**Building of Vocabulary (02 Hours)** Words from the glossary given at the end of each chapter are to be used to make sentences.	**C 107.5**
2	**Applied Grammar (02 Hours)** Identify the various parts of speech and insert correct parts of speech in the sentences given by the teacher.	**C107.1**
3	**Tenses (02 Hours)** List 12 tenses and give two examples for each tense	**C107.1**
4	**Punctuation (02 Hours)** Punctuate 20 sentences given by the teacher.	**C107.1**
5	**Paragraph Writing (02 Hours)** Write a paragraph on a topic given by the teacher.	**C107.2**
6	**Dialogue Writing (04 Hours)** Write at least two dialogues on different situations. (Conversation between people – different types)	**C107.2**
7	**Identifying the Errors (02 Hours)** Identify the errors in the sentences given by the teacher. (20 sentences)	**C107.5**
8	**Idioms and Collocations (02 hours)** Use of Idioms and Collocations in sentences. (20 Examples)	**C107.5**
9	**Listen and Pronounce (04 Hours)** a) Listen to the audio track and record your pronunciation. b) Repeat sound/words /sentences on Language Lab software after listening to them.	**C107.6,C107.3**

ACTIVITIES TO BE CONDUCTED DURING PRACTICALS

During practicals, the student is expected to use the Orell Language Learning software, for improving listening skills, understanding, record, compare and speak to gain a command over spoken English, at the same time improving and enhancing his vocabulary. The interactive user friendly software will also help the student to improve pronunciation and accent.

TOTAL TERM WORK MARKS = 50.



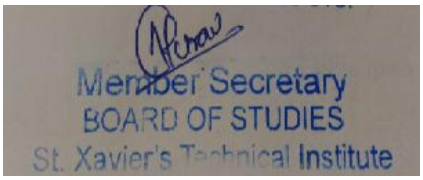
SUGGESTED SPECIFICATION TABLE FOR QUESTION PAPER DESIGN

Chapter No.	Title	Teaching Hours	Distribution of Theory Marks			
			R Level	U Level	A Level	Total Marks
Section I						
1	Applied Grammar	12	02	04	09	15
2	Paragraph and Dialogue Writing	6	02	03	05	10
3	Comprehension Part 1	14	03	04	08	15
Section II						
4	Comprehension Part 2	14	03	04	08	15
5	Lexis	10	02	04	09	15
6	Listening Skills	08	02	03	05	10
Total		64	14	22	44	80

The table to measure the attainment levels for TERM WORK (on a rating scale of "out of 50') of the defined expected course outcomes is as shown in the format given below:(Note:……the table should progress to the right for Lab Experience 7, 8, 9, ….and so on……)

LAB EXPERIENCE		1	2	3	4	5	6
	COURSE OUTCOMES	C107.5 (out of 50)	C107.1 (out of 50)	C107.1 (out of 50)	C107.1 (out of 50)	C107.2 (out of 50)	C107.2 (out of 50)
STUDENT SPNO							
1303001							
1303002							
1303004							
1303005							
1303006							
1303008							
1303011							

* The final % attainment level for TERM WORK of each course outcome may then be computed and the overall % attainment level for the course, for practical exam may then be calculated.



REFERENCES

S. No.	Title	Author	Publisher & Address
1	English Textbook E-Scheme	----	MSBTE
2	English Textbook G-Scheme	----	MSBTE
3	English Workbook I-Scheme	----	MSBTE
4	Contemporary English grammar, structures and composition	David Green	Macmillan
5	English for practical Purposes	Z. N. Patil et el	Macmillan
6	English grammar and composition	R. C. Jain	Macmillan
7	English at Workplace	Editor – Mukti Sanyal	Macmillan
8	Thesaurus	Rodgers	Oriental Longman
9	Dictionary	Oxford	Oxford University
10	Dictionary	Longman	Oriental Longman

Web Sites for Reference:

www.edufind.com
www.english_the_easy_way.com
www.englishclub.com
www.english_grammar_lessons.com
www.learning_english_online.net
www.skillsyouneed.com

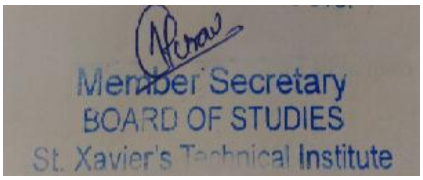
PROGRAMME TITLE :Diploma in Electronics & Telecom. Engineering ***SEMESTER :*** One											
Course Code	Course Title	Prerequisite	Credits			Examination Scheme					
						Theory		PR	OR	TW	Total
			L	P	Total	TH	TS				
ET 18120	**YOGA**			1	-			-	-	-	-
Non-Credit, Non-Exam Course.											

RATIONALE:

This course is primarily for right brained activity which is normally given secondary status while dealing with physical engineering and medicine with physical surgery. To overcome the above disadvantage and yet provide a full brained development, which combines the left and right activity the above subject is designed and implemented. This provides a complete holistic learning and healing both to the teacher and the taught. A primary note worthy feature is that practical and theory are combined and happen simultaneously at the same time.

COURSE OUTCOMES & CO PO MAPPING

SEM I C108	**YOGA** **8TH(NON-CREDIT, NON-EXAM) COURSE IN FIRST YEAR**
C108.1	To develop awareness of breath and take conscious charge of it for improving health and overcome stress.
C108.2	To learn, modify and develop tailor made meditations to solve all life problems academic and otherwise. To observe the observer.
C108.3	To experiment, examine and develop various meditation combinations with Yogic Pranayama.
C108.4	To learn, verify and use healing touch for self and others, absentee healing included.
C108.5	To be able to use and develop yantras, crystals and objects with applications.
C108.6	To learn, use, evaluate and modify the effects of the chakras and Aura



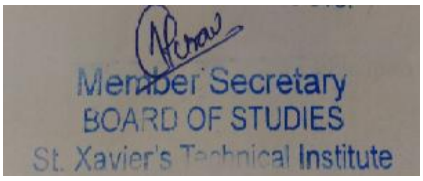
Mapping of Course outcomes (COs) to Program outcomes (POs)

SEM I C108	YOGA (8TH COURSE IN FIRST YEAR) PREPARED BY : FC									
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
C108.1					2	2	2		3	1
C108.2		3			2	2	3		2	1
C108.3	1	1			3	3	3		2	1
C108.4					3	3	3			
C108.5		2			3	3	3			
C108.6		2			3	3	3			
C108 TOTAL	1	8			16	16	17		7	3
CORRELATION LEVEL	0	1			3	3	3		2	1

TABLE TO DECIDE CORRELATION LEVELS

CO SUM TOTAL	0, 1, 2	3, 4, 5, 6, 7, 8	9, 10, 11, 12, 13, 14	15, 16, 17, 18
CORRELATION LEVEL	0	1	2	3

Mr.Francis Chettiar
Subject Expert



Sr. No.	Name of the Topic	Periods	Marks
01	Pranayama (deep breathing) **C108.1** Types of breath modulations: a) Kapal Bathi b) Lom and Anulom (square breathing) c) Laughing Breath d) Crying Breath e) Basthrika f) Three speed breathing	03	
02	Optimally combining the various breath techniques for achieving : **C108.2** a) concentration b) relaxation c) increasing blood pressure d) decreasing blood pressure e) fresh good feeling f) for throwing away sleepiness g) for achieving deep, relaxing, restful sleep h) for oxygenating lungs and all organs with prana i) for throwing out all waste gaseous toxins from all body organs	03	
03	Testing and tasting all meditative states arising after ten minutes practices of all modes of pranayama on the bodies morphology. **C108.2**	01	
04	Types of meditations Patanjalis eight fold yoga path: **C108.3** a) Yama b) Niyama c) Asana d) Pranayama e) Pratyahara f) Dharana g) Dhyana h) Samadhi	03	
05	a) Dynamic meditations **C108.3** b) Meditations with visualization techniques c) Non Visualization meditations d) Mantra Meditations	02	

Sr. No.	Name of the Topic	Periods	Marks
06	Description of Yogic field and its history **C108.4**	01	
07	Scientific support and healing Yoga. **C108.4**		
08	Crystal and object energy vibrations. **C108.4**		
09	Chakra theory. **C 108.6**	01	
10	Who am I meditation, theory and healing energy. **C108.4**	01	
11	Yantra Radiations. **C108.5**	01	
12	Aura theory and practical. **C 108.6**		

REFERENCES

S. No.	Author	Title	Edition	Year of Publication	Publisher & Address
1.	Mrs.R.Sharma & Mrs.K.Sharma	The Practical book of Reiki			Pustak Mahal
2.	Sir Shree	The Magic of Awakening			Penguin Books
4.	Barbara Ann Brennan	Hands of Light			Batman Books