CURRICULUM – 2018

(C-18)

DIPLOMA IN PRINTING TECHNOLOGY



STATE BOARD OF TECHNICAL EDUCATION & TRAINING

TELANGANA, HYDERABAD

III SEMESTER

General Time Schedule

Periods Format

Semester - III

Sl No	Course Code	Course Name	Teaching Scheme					Examination Scheme						
			instruction periodsper week			Total Periods per semester	Credits	Continuous internal evaluation			Semester end examination			
			L	T	P			mid sem1	mid sem2	internal evaluation	Max Marks Min Marks		total marks	Min marks for Passing including internal
1	18PT-301F	Applied Engineering Mathematics	3	1	0	60	3	20	20	20	40	14	100	35
2	18PT-302C	Sheetfed Offset	3	1	0	60	3	20	20	20	40	14	100	35
3	18PT 303C	Gravure, Flexo and Screen	3	1	0	60	3	20	20	20	40	14	100	35
4	18PT-304C	Paper and Ink	3	1	0	60	3	20	20	20	40	14	100	35
5	18PT-305C	Print Finishing Operations	3	1	0	60	3	20	20	20	40	14	100	35
6	18PT-306P	Sheet fed Offset Lab	1	0	2	45	1.5	20	20	20	40	20	100	50
7	18PT-307P	Gravure, Flexo and Screen Printing Lab	1	0	2	45	1.5	20	20	20	40	20	100	50
8	18PT-308P	Print Finishing Lab	1	0	2	45	1.5	20	20	20	40	20	100	50
9	18PT-309P	Image Processing Lab	1	0	2	45	1.5	20	20	20	40	20	100	50
10	18PT-310P	Communication Skills and Life Skills Lab	1	0	2	45	1.5	20	20	20	40	20	100	50
11		Academic activities	0	0	7	105	2.5	0	0	Rubrics			--	Grade-A/B/C/D-
			20	5	17	630	**25**	200	200	200	400	170	1000	425
	Activities: student performance is to be assessed through Rubrics													

All the above marks are in percentage weightage

APPLIED ENGINEERING MATHEMATICS

Course Title **: APPLIED ENGINEERING MATHEMATICS**	Course Code **: 18PT-301F**
SEMESTER : **III**	Course Group **: Foundation**
Teaching Scheme (L : T : P) : **36 :24 : 0 (** in Periods)	Credits : **3 Credits**
Type of Course : **Lecture + Assignments**	Total Contact Periods : **60**
CIE : 6**0 Marks**	SEE : **40 Marks**
Programmes : **Common to all Engineering Diploma Programmes**	

Pre requisites

This course requires the knowledge of Basic Engg. Mathematics and Engg. Mathematics at Diploma 1st and 2nd Semester level.

Course Outcomes: COs

At the end of the course, the student will have the ability to:

CO 1	Integrate different kinds of functions
CO 2	Integrate functions using different methods
CO 3	Find the values of definite integrals.
CO 4	Solve simple problems of Areas, Volumes.
CO 5	Find the Mean and RMS values of various functions and Approximate values of Definite integrals using Trapezoidal and Simpson's 1/3rd rule
CO 6	Form the Differential Equation and Solve Simple DEs of 1st order and 1stdegree.

Course Content:

Unit-I **Duration: 10 Periods (L: 6.0 – T:4.0)**

Indefinite Integration-I

Integration regarded as anti-derivative – Indefinite integral of standard functions. Properties of indefinite integral. Integration by substitution or change of variable. Integrals of the form $\sin^m\theta . \cos^n\theta$. where m and n are positive integers. Integrals of tan x, cot x, sec x, cosec x and powers of tan x, sec x by substitution.

Evaluation of integrals which are reducible to the following forms:

$i)\ \frac{1}{a^2+x^2}, \frac{1}{a^2-x^2}, \frac{1}{x^2-a^2}$

$ii)\ \frac{1}{\sqrt{a^2+x^2}}, \frac{1}{\sqrt{a^2-x^2}}, \frac{1}{\sqrt{x^2-a^2}}$

$iii)\ \sqrt{x^2+a^2}, \sqrt{a^2-x^2}, \sqrt{x^2-a^2}$

Unit – II **Duration: 08 Periods (L: 4.8 – T:3.2)**

Indefinite Integration-II

Integration by decomposition of the integrand into simple rational algebraic functions. Integration by parts, Bernoulli's rule.

Unit-III **Duration: 06 Periods (L: 3.6 – T:2.4)**

Definite Integral and its Properties:

Definite integral-fundamental theorem of integral calculus, properties of definite integrals, evaluation of simple definite integrals. Definite integral as the limit of a sum.

Unit – IV **Duration: 10 Periods (L: 6.0 – T:4.0)**

Applications of Definite Integrals:

Areas under plane curves – Sign of the Area – Area enclosed between two curves. Solid of revolution – Volumes of solids of revolution.

Unit – V **Duration: 08 Periods (L: 4.8 – T:3.2)**

Mean, RMS values and Numerical Integration:

Mean values and Root Mean Square values of a function on a given interval.

Trapezoidal rule, Simpson's 1/3 rule to evaluate an approximate value of a definite integral.

Unit – VI **Duration: 18 Periods (L: 10.8 – T:7.2)**

Differential Equations of First Order:

Definition of a differential equation – order and degree of a differential equation – formation of differential equations – solution of differential equation of first order, first degree : variables -separable, homogeneous, exact, linear differential equation, Bernoulli's equation.

Reference Books:

1. Integral Calculus Vol.I, by M.Pillai and Shanti Narayan
2. Thomas' Calculus, Pearson Addison –Wesley Publishers

Suggested E-Learning references

1. www.freebookcentre.net/mathematics/introductory-mathematics-books.html

2.E-books:www.mathebook.net

Suggested Learning Outcomes

Unit-I

1.0 Use Indefinite Integration to solve engineering problems

1.1 Explain the concept of Indefinite integral as an anti-derivative.

1.2 State the indefinite integral of standard functions and properties of Integrals $\int (u + v)\, dx$ And $\int ku\, dx$ where k is constant and u, v are functions of x.

1.3 Solve integration problems involving standard functions using the above rules.

1.4 Evaluate integrals involving simple functions of the following type by the method of substitution.

i) $\int f(ax + b)\, dx$ where $f(x)\, dx$ is in standard form.

ii) $\int [f(x)]^n f'(x)\, dx$

iii) $\int f'(x)/[f(x)]\, dx$

iv) $\int f\{g(x)\} g'(x)\, dx$

1.5 Find the Integrals of *tan x, cot x, sec x* and *cosec x using*the above.

1.6 Evaluate the integrals of the form $\int Sin^m\theta Cos^n\theta .\, d\theta$ where m and n are positive integers.

1.7 Evaluate integrals of powers of *tan x* and *sec x*.

1.8 Evaluate the Standard Integrals of the functions of the type

$$i)\ \frac{1}{a^2+x^2}, \frac{1}{a^2-x^2}, \frac{1}{x^2-a^2}$$

$$ii)\ \frac{1}{\sqrt{a^2+x^2}}, \frac{1}{\sqrt{a^2-x^2}}, \frac{1}{\sqrt{x^2-a^2}}$$

$$iii)\ \sqrt{x^2+a^2}, \sqrt{a^2-x^2}, \sqrt{x^2-a^2}$$

1.9 Evaluate the integrals of the type

$$\int \frac{1}{a \pm bSin\theta} d\theta, \int \frac{1}{a \pm b\cos\theta} d\theta \text{ and } \int \frac{1}{a\cos\theta \pm b\sin\theta \pm c} d\theta$$

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Unit-II

2.0 Use Indefinite Integration to solve engineering problems

2.1 Evaluate integrals using decomposition method.

2.2 Evaluate integrals using integration by parts with examples.

2.3 State the Bernoulli's rule for evaluating the integrals of the form $\int u.vdx$.

2.4 Evaluate the integrals of the form $\int e^x [f(x) + f'(x)]\, dx$.

Unit-III

3.0 Understand definite integral and use it in engineering applications

3.1 State the fundamental theorem of integral calculus

3.2 Explain the concept of definite integral.

3.3 Calculate the definite integral over an interval.

3.4 State various properties of definite integrals.

3.5 Evaluate simple problems on definite integrals using the above properties.

3.6 Explain definite integral as a limit of sum by considering an area.

Unit –IV

4.0 Understand definite integral and use it in engineering applications

4.1 Find the Areas under plane curves and area enclosed between two curves using integration.

4.2 Obtain the Volumes of solids of revolution.

Unit –V

5.0 Understand Mean, RMS values and Numerical Methods

5.1 Obtain the Mean value and Root Mean Square (RMS) value of the functions in any given Interval.

5.2 Explain the Trapezoidal rule, Simpson's 1/3 rules for approximation of definite integrals andprovide some examples.

Unit –VI

6.0 Solve Differential Equations in engineering problems.

6.1 Define a Differential equation, its order and degree

6.2 Form a differential equation by eliminating arbitrary constants.

6.3 Solve the first order first degree differential equations by the following methods:

i. Variables Separable.

ii. Homogeneous Equations.

iii. Exact Differential Equations

iv. Linear differential equation of the form $dy/dx + Py = Q$,

where P and Q are functions of x or constants.

v. Bernoulli's Equation (Reducible to linear form.)

6.4 Solve simple problems leading to engineering applications by using above methods.

Suggested Student Activities

1. Student visits Library to refer Standard Books on Mathematics and collect related material
2.Quiz
3.Group discussion
4.Surprise tests
5. Seminars
6. Home Assignments

CO / PO - MAPPING

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	Mapped POs
CO1	3	2	2	1			1			3	1,2,3,4,7,10
CO2	3	2	2	1			1			3	1,2,3,4,7,10
CO3	3	2	2	1			1			3	1,2,3,4,7,10
CO4	3	2	2	1			1			3	1,2,3,4,7,10
CO5	3	2	2	1			1			3	1,2,3,4,7,10
CO6	3	2	2	1			1			3	1,2,3,4,7,10

MID SEM-I EXAM

S.No	Unit Name	R	U	A	Remarks
1	Unit-I	1, 2	5(a) 5(b)	7(a) 7(b)	
2	Unit-II	3, 4	6(a) 6(b)	8(a) 8(b)	
Total Questions		4	4	4	

MID SEM –II EXAM

S.No	Unit Name	R	U	A	Remarks
1	Unit-III	1, 2	5(a) 5(b)	7(a) 7(b)	
2	Unit-IV	3, 4	6(a) 6(b)	8(a) 8(b)	
Total Questions		4	4	4	

Semester End Examination

Sl No	Unit No.	Questions to be set for SEE				Remarks
		R		U	A	
1	I	4	1	9(a)	13(a)	
2	II					
3	III		2	10(a)	14(a)	
4	IV					
5	V		3	5, 6	9(b) 11(a) 11(b)	13(b) 15(a) 15(b)	
6	VI			7,8	10(b) 12(a) 12(b)	14(b) 16(a) 16(b)	
Total Questions		8		8	8	

Legend:	Remembering (R)	1 Mark
	Understanding (U)	3 Marks
	Application (A)	5 Marks

Code: 18PT-301F

STATE BOARD OF TECHNICAL EDUCATION & TRAINING, TELANGANA

BOARD DIPLOMA EXAMINATIONS

MID SEM –I, MODEL PAPER, III SEMESTER

APPLIED ENGINEERING MATHEMATICS

TIME: 1: 00 Hours Max. Marks: 20

PART-A

Instructions: 1. Answer **ALL** questions 04 X 01 = 04

2 Each question carries **ONE** mark

1. Integrate: $e^x - \sin x + x^4$
2. Find : $\int \frac{dx}{5x+7}$ dx
3. Write Bernoulli's rule of integration
4. Find : $\int x \log x \, dx$

PART-B

Instructions: 1. Answer any **TWO** questions 02 X 03 = 06

2. Each question carries **THREE** marks

5 a). Evaluate : $\int \frac{x^5}{1+x^{12}} dx$.

Or

5 b) Evaluate : $\int \frac{dx}{(x^{2+}25)}$

6 a). Evaluate : $\int x \, sinx dx$

Or

6 b).Evaluate : $\int \frac{3x+2}{(x-1)(2x+3)} dx$.

PART C

Instructions: 1. Answer any **TWO** questions 02 X 05 = 10

2. Each question carries **FIVE** marks

7 a). Evaluate $\int \sqrt{x^2 + 2x + 5}\, dx$

Or

7 b) Evaluate : $\int cosx\, cos2x dx$.

8 a). Find $\int xTan^{-1}x dx$.

Or

8 b) Find $\int x^4 Cos2x dx$.

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Code: 18PT-301F

STATE BOARD OF TECHNICAL EDUCATION & TRAINING, TELANGANA

BOARD DIPLOMA EXAMINATIONS

MID SEM –II, MODEL PAPER, III SEMESTER

APPLIED ENGINEERING MATHEMATICS

TIME: 1: 00 Hours Max. Marks: 20

PART-A

Instructions: 1. Answer **ALL** questions 04 X 01 = 04

2 Each question carries **ONE** mark

1. Integrate : $\int_0^1 (x^4 + 1)\, dx$
2. Evaluate : $\int_0^{\pi} Sin3x dx$
3. Evaluate : $\int_0^1 \frac{1}{1+x^2} dx$
4. Write the formula to find area bounded by the curve y= f(x) , x-axis,between the limits x=a and x =b

PART-B

Instructions: 1. Answer any **TWO** questions 02 X 03 = 06

2. Each question carries **THREE** marks

Find the Mean value of the function y = logx on [1 , e]

5 a) Evaluate: $\int_0^{\frac{\pi}{2}} \sqrt{1 - Sin2x} dx$

Or

5 b) Evaluate : $\int_0^{\frac{\pi}{2}} sin^2 x dx$

6 a). Find the area bounded by the line 2x + y =8, x-axis and the lines x = 2 and x = 4.

Or

6 b). Find the Volume of the Solid generated by revolving the part of the Circle $x^2 + y^2 = 36$

From x = 0 to x = 4 about x – axis.

PART C

Instructions: 1. Answer any **TWO** questions 02 X 05 = 10

2. Each question carries **FIVE** marks

7 a). Evaluate: $\int_0^{\frac{\pi}{2}} \frac{\sqrt{Sinx}}{\sqrt{Sinx}+\sqrt{Cosx}}\,dx$

Or

7 b). Evaluate : $\int_0^{\frac{\pi}{2}} \log sin\, x dx$

8 a) Find the area enclosed between the Parabolas $y = 3x - x^2 and y = x^2 - x$.

Or

8 b). Find the Volume of the Solid generated by the revolution of the area bounded by the

Ellipse $\frac{x^2}{25} + \frac{y^2}{16} = 1$, about x- axis.

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SUB.CODE:18PT-301F

BOARD DIPLOMA EXAMINATION,(C-18)

MODEL PAPER

III SEMESTER EXAMINATION

APPLIED ENGINEERING MATHEMATICS

Time: 2 hours [Total Marks: 40]

PART-A

Instructions: 1. Answer **ALL** questions 08 X 01 = 08

2 Each question carries **ONE** mark

1. Integrate: $x^7 - 3/x$

2. Evaluate: $\int_0^1 (x^2 + 1)$ dx

3. Write the formula to find mean value of y = f(x), in the interval (a, b)

4. Find the Order and Degree of the Differential Equation $x\frac{dy}{dx} = \sqrt{1 + \left(\frac{dy}{dx}\right)^2}$.

5 Write Trapezoidal Rule to find the approximate value of $\int_a^b f(x)dx$.

6. Write the formula to find RMS value of y = f(x) over the range x=a and x = b.

7. Solve:$\frac{dy}{dx} = e^{2x+y}$

8. Write the condition for exactness of the differential equation M(x,y)dx + N(x,y)dy =0

PART-B

Instructions: 1. Answer any **FOUR** questions 04 X 03 = 12

2. Each question carries **THREE** marks

9 a). Evaluate:$\int_0^{\frac{\pi}{2}} \sqrt{1 - Sin2x}dx$

Or

9 b) Find the approximate value of $\int_0^6 \frac{dx}{1+x}$ by taking n = 6 using Trapezoidal rule.

10 a) Find the area bounded by the Parabola $y = x^2 - 2x + 1$ and x-axis.

Or

10 b) Form the Differential Equation from $y = Ae^x + Be^{3x}$ where A, B are arbitrary Constants.

11 a) Find the RMS value of $\sqrt{\log x}$ over the range x= 1 and x= e

Or

11 b) Calculate approximate value of $\int_0^4 \frac{dx}{1+x}$ by taking n= 4 using Simpson's 1/3 rule

12 a) Solve: $x\frac{dy}{dx} + 2y = logx$.

Or

12 b) Solve: $x(1-y^2)dx + y(1-x^2)dy = 0$

PART C

Instructions: 1. Answer any **FOUR** questions 04 X 05 = 20

2. Each question carries **FIVE** marks

13 a) Evaluate: $\int \frac{1}{x^2+2x+2}$ dx

Or

13 b) Find the RMS value of $y = \sqrt{8-4x^2}$ between x = 0 and x = 2

14 a) Find the volume of solid generated by revolving the Ellipse $\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$ about Major axis

Or

14 b) Solve: $\frac{dy}{dx} = Sin(x+y)$

15 a) A curve is drawn to passing through the points given by the following table:

x	1	1.5	2	2.5	3	3.5	4
y	3	3.4	3.7	3.8	2.7	2.6	2.1

Calculate the approximate area bounded by the curve , x-axis and the lines x= 1 and x= 4 using Simpson's 1/3 rule

Or

15 b) Evaluate: $\int_0^1 \sqrt{(1-x^2)}dx$ approximately by taking n = 4 using

Simpson's 1/3 rd Rule.

16 a) Solve : $(y^2 - xy)dx = x^2dy$.

Or

16 b) . Solve: $\frac{dy}{dx} + yCosx = y^3$Sin2x.

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III SEMESTER

SKILL UPGRADATION IN - APPLIED ENGINEERING MATHEMATICS

ACTIVITY ASSESSMENT Steps

1. **Mathematical concepts**
2. **Procedure**
3. **Explanation**
4. **Working with others**
5. **Mathematical errors**

ACTIVITIES

1 .Write a short notes on different types of integrals.

2. Prepare a notes on different methods to evaluate integrals.

3. List out Properties of definite integrals.

4. List out and explain various applications of definite integrals.

5. Explain the procedure to solve problems on Areas using integration

6. Explain the procedure to find volumes of irregular shapes of solids of revolution using integration.

7. Prepare a presentation to find Mean values and R.M.S values of any given function.

8. Explain the procedure to calculate approximate area by using Trapezoidal rule.

9. Explain the procedure to calculate approximate area by Simpson's 1/3 rule

10. Prepare a presentation on solving 1st order differential equations using any suitable method.

CO / PO - MAPPING OF ACTIVITIES

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	3	2	2	1			1	2	2	3
CO2	3	2	2	1			1	2	2	3
CO3	3	2	2	1			1	2	2	3
CO4	3	2	2	1			1	2	2	3
CO5	3	2	2	1			1	2	2	3
CO6	3	2	2	1			1	2	2	3
CO7	3	2	2	1			1	2	2	3
CO8	3	2	2	1			1	2	2	3
CO9	3	2	2	1			1	2	2	3
CO10	3	2	2	1			1	2	2	3

Rubrics for Activity assessment

CATEGORY	**4**	**3**	**2**	**1**
Mathematical Concepts	Explanation shows complete understanding of the mathematical concepts used to solve the problem(s).	Explanation shows substantial understanding of the mathematical concepts used to solve the problem(s).	Explanation shows some understanding of the mathematical concepts needed to solve the problem(s).	Explanation shows very limited understanding of the underlying concepts needed to solve the problem(s) OR is not written.
Procedures	Typically, uses an efficient and effective procedure to solve the problem(s).	Typically, uses an effective procedure to solve the problem(s).	Sometimes uses an effective procedure to solve problems, but does not do it consistently.	Rarely uses an effective procedure to solve problems.
Explanation	Explanation is detailed and clear.	Explanation is clear.	Explanation is a little difficult to understand, but includes critical components.	Explanation is difficult to understand and is missing several components OR was not included.

Working with Others	Student was an engaged partner, listening to suggestions of others and working cooperatively throughout lesson.	Student was an engaged partner but had trouble listening to others and/or working cooperatively.	Student cooperated with others, but needed prompting to stay on-task.	Student did not work effectively with others.
Mathematical Errors	90-100% of the steps and solutions have no mathematical errors.	Almost all (85-89%) of the steps and solutions have no mathematical errors.	Most (75-84%) of the steps and solutions have no mathematical errors.	More than 75% of the steps and solutions have mathematical errors.

SHEET FED OFFSET

Course Title : Sheet fed Offset	**Course Code :18PT-302C**
Semester : III	**Course Group : Core**
Teaching Scheme in Hrs (L:T:P) : 36:24:0	**Credits : 3**
Type of Course : Lecture + Assignments	**Total Contact Hours : 45hrs/60 pds**
CIE : 60 Marks	**SEE : 40 Marks**

Pre requisites

This course requires the knowledge of basic principles of sheet fed printing process

Course Outcomes

CO1 :	Choose the type of offset machine for a particular job
CO2 :	Know to operate an offset Printing machine
CO3 :	Judge the ink and water balance
CO4 :	Choose and examine the Plate, raw materials before Printing
CO5 :	Know to Prepare the machine for different types of jobs
CO6 :	Understand to solve the Printing problems occurring during Printing

Course Content

UNIT 1: INTRODUCTION TO SHEET-FED OFFSET PRESSES **Duration: 8 Pds**

Basic principles of Offset Printing-Construction/Structure of a sheet fed press-Various press configurations-Single colour press, Multi colour press, Perfecting press, Satellite type press, Common impression cylinder press-Small Offset press and-Proofing press.

UNIT 2:PRINTING UNIT **Duration: 12 Pds**

Plate cylinder-Blanket cylinder-Impression cylinder, transfer cylinder, delivery cylinder , Cylinder setting on a Bearer contact press, and Non-Bearer contact Press-Paralleling Blanket cylinder to Impression cylinder-Safety measures in the Pressroom-The Offset Blanket-Structure, types of blankets-Working requirements of Blankets-Blanket selection-Care of Blankets-Blanket mounting. Recovering from a Blanket smash and use
Of slightly damaged blankets

UNIT 3: DAMPENING AND INKING UNIT **Duration: 12 Pds**

The Dampening System–Construction of conventional dampening systems-Continuous-flow dampening system-Dampening solutions and its importance- Its composition, alcohol and alcohol substitutes-pH of a dampening solution-Setting of Rollers in conventional dampening system. Metering dampening on conventional system - Operating problems of dampening systems. The inking system –Construction of a typical inking system-Setting ink rollers, setting from roller to oscillator, setting form roller to plate-Setting the doctor roller-Inking system problems

UNIT 4: SHEET CONTROLLING DEVICES **Duration: 10 Pds**

Purpose of automatic sheet feeders-Classification-friction feeders, single-sheet feeder, Stream feeder. Setting the feed board devices, front lays and side lay and their types- Sheet detectors and trip systems-Type of grippers-Types of sheet transfer-Chain transfer, single drum, and three drum transfer systems-Sheet guiding devices. Delivery assist devices-Suction slow-down rollers-Blow down wedges and-Anti-setoff spray equipment.

UNIT5:MAKE-READYOPERATIONS **Duration: 08 Pds**

Pre make ready procedures-Make ready procedure for single colour-Extra precautions required for make ready-Make ready types-Preparing the press for run-Inking system - wash-up-Cleaning the dampening system-Checking work order instructions-Setting sheet handling devices-Installing the plate Making trial impressions–examining the trial impressions, image registering and positioning-Checking quality of print, ink and water balance, colour of print

UNIT 6: TROUBLE SHOOTING IN OFFSET PRINTING **Duration: 10 Pds**

Printing defects and their remedy-Make-ready procedure for multi colour printing Selection of colour sequence for multi colour printing-Types of sheet distortion-Ideal condition of paper for registering purposes Running the machine for production-Inspection of press sheets, random check-up-Control of press functions during press run-Quality control during the press run-Densitometry, colour control bars, controlling colour during the pressrun-Pressroom lighting and standard viewing conditions.

Specific Learning Outcomes

CO1: choose the type of offset machine for a particular job

1.1 Describe Basic principles of Offset Printing.
1.2 Explain Construction/Structure of a sheet fed press.
1.3 Explain various press configurations
1.4 Explain Single colour press, Multi colour press, Perfecting press, Satellite type Press, Common impression cylinder press.
1.5 Describe Small Offset press and
1.6 Tell about Proofing press.

CO2: Know to operate an offset Printing machine

2.1 Define plate cylinder.
2.2 Explain the blanket cylinder.
2.3 Express impression cylinder, transfer cylinder, delivery cylinder.
2.4 Explain cylinder setting on a Bearer contact press and Non-Bearer contact Press.
2.5 Identify different safety measures in the Pressroom.
2.6 Explain the offset Blanket-Structure, types of blankets.
2.7 Illustrate the working requirements of Blankets
2.8 Explain about blanket selection.
2.9 Discuss the care of Blankets.
2.10 Employ blanket mounting.
2.11 Explain about Recovering from a Blankets mash and use of slightly damaged blankets

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CO3: Judge the ink and water balance

3.1 Classify the inking system
3.2 Explain the construction of a typical inking system.
3.3 Describe setting ink rollers, setting form roller to oscillator, setting form roller to plate.
3.4 Express inking system and its problems.
3.5 Demonstrate the Dampening System and construction of conventional- Dampening systems.
3.6 Illustrate the continuous-flow dampening system.

3.7 Explain dampening solutions and its importance, its composition, alcohol and Alcohol substitutes.
3.8 Identify pH of a dampening solution.
3.9 Illustrate the setting of rollers in conventional dampening system.
3.10 Explain Metering dampening on conventional system.
3.11 Discuss operating problems of dampening systems

CO4: Choose and examine the Plate, raw materials before Printing

4.1 Express the purpose of automatic sheet feeders.
4.2 Classify friction feeders-single-sheet feeder, Stream feeder.
4.3 Feed Board sheet control devices.
4.4 Practice setting the feed board devices, front lays and side lay and their types.
4.5 Explain sheet detectors and trip systems.
4.6 Classify types of grippers.
4.7 Categorize the types of sheet transfer-Chain transfer, single drum and three drum transfer systems.
4.8 Identify delivery assist devices.
4.9 Describe suction slow-down rollers.
4.10 Explain blow down wedges.
4.11 Describe anti-setoff spray equipment

CO5: Know to prepare the machine for different types of jobs

5.1 Explain pre make ready procedures.
5.2 Describe make ready procedure for single colour.
5.3 Discuss extra precautions required for make ready.
5.4 List different make ready types.
5.5 Demonstrate how to pre pare the press for run.
5.6 Explain inking system -wash-up.
5.7 Practice cleaning the dampening system.
5.8 Check work order instructions.
5.9 Set sheet handling devices.
5.10 Install the plate.
5.11 Make trial impressions-examining the trial impressions, image registering and positioning.
5.12 Check quality of print, ink and water balance, colour of print.

CO6: Understand to solve the Printing problems occurring during Printing

6.1 Explain printing defects and their remedy.
6.2 Discuss make-ready procedure for multi colour printing.
6.3 Describe the selection of colour sequence for multi colour printing.
6.4 Classify the types of sheet distortion.
6.5 Indicate the ideal condition of paper for registering purposes.
6.6 Run the machine for production.
6.7 Explain the inspection of press sheets, random check-up.
6.8 Control press functions during pressrun.
6.9 Analyze quality control during the pressrun.
6.10.Use densitometry, colour control bars, controlling colour during the pressrun.

Suggested Students Activities:

1.) Understand and make report on types of sheet fed presses
2.) Compare the difference between plate , blanket and impression cyclinder
3.) Usage of various feeding system
4.) Understand the purpose of dampening and inking systems
5.) Know the offset printing defects

CO-PO Mapping Matrix

COURSE OUT COME		CL	Linked PO	Teaching Hrs
CO1	choose the type of offset machine for a particular job	R/U/A	1,2,4,10	10
CO2	Know to operate an offset Printing machine	R/U/A	2, 3, 4	12
CO3	Judge the ink and water balance	R/U/A	1,2,3	12
CO4	Choose and examine the Plate, raw materials before Printing	R/U/A	1,2, 3,	08
CO5	Know to Prepare the machine for different types of jobs	R/U/A	1, 2, 4, 8	08
CO6	Understand to solve the Printing p	U/A	1, 2,7,8	10

Recommended Books

1.A Manual for Lithographic Press Operations – A.S. Porter

2. Handbook of Print Media – Dr. Helmut Kipphan.

3. Sheet fed Offset Press Operating – Lloyd P. Dejidas and Thomas M. Destree, GATF.

4. Offset Lithography – S. Jaganathan, K.T. Chary.

E-Learning Links:

1.) http://sites.tech.uh.edu/digitalmedia/materials/3252/Printing_Unit_Configs.html
2.) http://sites.tech.uh.edu/digitalmedia/materials/3252/Printing_Unit.html
3.) http://printwiki.org/Feeder_Section
4.) http://shodhganga.inflibnet.ac.in/bitstream/10603/153276/15/10_chapter%202.pdf

MID SEM-I EXAM

S.No	Unit Name	R	U	A	Remarks		
1	Unit-I	1, 2	5(a) 5(b)	7(a) 7(b)			
2	Unit-II	3, 4	6(a) 6(b)	8(a) 8(b)			
Total Questions		4	4	4			

MID SEM –II EXAM

S.No	Unit Name	R	U	A	Remarks		
1	Unit-III	1, 2	5(a) 5(b)	7(a) 7(b)			
2	Unit-IV	3, 4	6(a) 6(b)	8(a) 8(b)			
Total Questions		4	4	4			

Semester End Examination

Sl No	Unit No.	Questions to be set for SEE				Remarks
		R		U	A	
1	I	4	1	9(a)	13(a)	
2	II					
3	III		2	10(a)	14(a)	
4	IV					
5	V		3	9(b)	13(b)	
			5, 6	11(a)	15(a)	
				11(b)	15(b)	
6	VI		7,8	10(b)	14(b)	
				12(a)	16(a)	
				12(b)	16(b)	
Total Questions		8		8	8	

Legend:		
	Remembering (R)	1 Mark
	Understanding (U)	3 Marks
	Application (A)	5 Marks

STATE BOARD OF TECHNICAL EDUCATION AND TRAINING, TELANGANA

MODEL QUESTION PAPER, MID – SEM – I

SHEET FED OFFSET: 18PT-302C

TIME: 1Hour Max.Marks - 20

PART - A

Answer all questions. Each question carries one mark. 4 X 1 = 4

1. Write basic principle of offset process.
2. Mention the purpose of proofing press.
3. How many cylinders are there in printing unit? List out them.
4. Define blanket smash.

PART - B

Answer all questions. Each question carries three marks. 2 X 3 = 6

5. a) Explain about perfecting press.
   OR
   b) Describe small offset press
6. a) Write briefly about blanket cylinder.
   OR
   b) List out the safety measures to be taken in a press room.

PART - C

Answer all questions. Each question carries five marks. 2 X 5 = 10

7. a) Identify the units present in the sheet fed press and explain about any three units.
   OR
   b) Briefly explain the working and uses of satellite press.
8. a) Write briefly about the plate clamping mechanism.
   OR
   b) Explain the structure of blanket and list its types.

STATE BOARD OF TECHNICAL EDUCATION AND TRAINING, TELANGANA

MODEL QUESTION PAPER, MID – SEM – II

SHEET FED OFFSET: 18PT-302C

TIME: 1Hour Max.Marks - 20

PART - A

Answer all questions. Each question carries one mark. 4 X 1 = 4

1. Write basic principle of offset process.
2. Mention the purpose of proofing press.
3. How many cylinders are there in printing unit? List out them.
4. Define blanket smash.

PART - B

Answer all questions. Each question carries three marks. 2 X 3 = 6

5. a) Explain about perfecting press.
   OR
   b) Describe small offset press
6. a) Write briefly about blanket cylinder.
   OR
   b) List out the safety measures to be taken in a press room.

PART - C

Answer all questions. Each question carries five marks. 2 X 5 = 10

7. a) Identify the units present in the sheet fed press and explain about any three units.
   OR
   b) Briefly explain the working and uses of satellite press.
8. a) Write briefly about the plate clamping mechanism.
   OR
   b) Explain the structure of blanket and list its types.

SEE - MODEL QUESTION PAPER

DIPLOMA IN PRINTING TECHNOLOGY

Sub Name: Sheet fed offset

Sub Code: 18PT-302C

Time : 2 Hours **Max. Marks = 40**

Part – A **8 X 1 = 8 Marks**

Answer all the Questions. Each Question carries one mark.

1.) Define offset Printing
2.) What are the components of offset Printing
3.) List out the metals used to make the Offset Plate
4.) Name different kinds of Presses
5.) Where do we use form rollers
6.) Why we need dampening
7.) What is power Proofing
8.) List out suitable jobs for Offset

Part – B **4 X 3 = 12 Marks**

Answer all Questions. Each Question carries 3 marks

9.) a) Describe the principles of Offset Printing.

OR

b) Explain raw materials used for offset printing

10.) a) Compare inking and dampening

OR

b) Write the three grades of blankets and their uses.

11.) a) State and compare the compressible and non compressible blanket.

OR

b) Explain briefly about Blanket to impression cylinder.

12.) a) How the image is generated in the offset press

OR

b) Which process is used to print Newspaper? And why?

Part – C **4 X 5 = 20 Marks**

Answer all Questions. Each Question carries 5 marks

13.) a) Plan the work flow of the Text Book Printing using Offset Process

OR

b) Construct the Offset cylinder

14.) a) Identify and explain different kinds of Inking systems

OR

b) Identify Printers used for taking proofing presses

15.) a) Apply Different exposures to Wipe on Plates obtain the correct exposure time

OR

b) Select the right plate to obtain multi colour printing in Offset Printing

16.) a) Write briefly about blanket cylinder.

OR

b) List out the safety measures to be taken in a press room.

GRAVURE, FLEXO& SCREEN PRINTING

Course Title : Gravure, Flexo & Screen Printing	**Course Code:18PT-303C**
Semester : III	**Course Group : Core**
Teaching Scheme in Hrs (L:T:P) : 36:24:0	**Credits : 3**
Type of Course : Lecture + Assignments	**Total Contact Hours : 45hrs/60 pds**
CIE : 60 Marks	**SEE : 40 Marks**

Pre requisites

This course requires the knowledge of basic principles of Gravure, Flexo& Screen Printing

Course Outcomes

CO1 :	Understand Flexography Printing Process, Types of Flexographic Image Carrier
CO2 :	Select Inking Unit, Impression and Plate Cylinders and Classify Flexographic Presses
CO3 :	Identify different types of cells, Know About Etching And Engraving
CO4 :	Understand Gravure Ink Manufacturing Ingredients of Inks, Solvent Recovery Method
CO5 :	Classify Gravure Substrates And Properties Of Substrates
CO6 :	Know the Working Principles Of Slitting And Rewinding Machines and Understanding Of Screen Printing

Course Content

UNIT 1: BASIC PRINCIPLES OF FLEXOGRAPHY AND IMAGE CARRIER PREPARTION

Duration: 07Pds

Principle of Flexographic Printing Process-Surface preparation-Techniques of making molded rubber plate and polymer plates-Plate mounting methods-handling-storage of plates.

UNIT 2: FLEXOGRAPHIC PRINTING WORK Duration:12 Pds

Printing units of flexography press-Construction and description-Flexographic printing machines-Plate cylinder and impression cylinder-Paper and ink qualities and controlling system-Inking system - fountain roller-Anilox roller-Types of inking system-Press types-Stack, common impression and inline presses-Ink and solvents used for Flexographic printing.

UNIT 3: GRAVURE CYLINDER PREPARATION – DOCTOR BLADE AND ITS CARE Duration: 08 Pds

Detailed study of Gravure cell structure-Different types of cells – Varying in depth, area, and depth and area-Construction of gravure cylinder-Transfer of image on the gravure cylinder – Direct and Carbon tissue method-Chemical etching-electronic engraving-Laser engraving-Precautions to be taken during preparation of gravure cylinder-Techniques of surface finishing – electroplating of gravure cylinder with Chromium and Nickel-Nature-use and maintenance of doctor blade

UNIT 4: GRAVURE PRINTING INKS Duration: 09 Pds

Manufacture of gravure inks-Ingredients of gravure inks-Various solvents used in gravure process-Solvent recovery methods

UNIT 5: GRAVURE PROCESS MATERIALS Duration: 08 Pds

Different kinds of substrates used for printing by Gravure Process like PVC, PVA, BOPP, Foil, Film, Paper, Board etc-Characteristics and properties required for substrates

UNIT 6: SLITTING, REWINDING MACHINE AND SCREEN PRINTING

Duration: 16 Pds

The purpose and working of a Slitting and Rewinding Machine-Various types of equipment used for quality control-Identifying the defects during printing-Suggest remedies

Mesh-Squeegee Selection-Screen pre treatment-Screen Tensioning-Screen Printing Machines- Container Screen Printing-Flat bed Hinged Frame (Automatic)-Rotary Screen Printing-Carousal Printing Machines-Screen Printing Inks–Types-Properties-Screen Printing Applications.

Specific Learning Outcomes

CO1: Understand Flexography Printing Process, Types of Flexographic Image Carrier

1.) Define Flexography printing
2.) Principles of flexography, surface preparation
3.) List different types of rubber plates and photopolymer plates
4.) Mounting, handling and storage of plates

CO2: Select Inking Unit, Impression and Plate Cylinders and Classify Flexographic Presses

1.) Flexography printing construction
2.) Selection of inline, stack and central impression cylinder presses
3.) Study of different rollers i.e. fountain roller, anilox roller and plate cylinder
4.) Use of different inks and solvents in flexography printing
5.) Purpose of impression cylinder in flexography

CO3: Identify different types of cells, Know about Etching and Engraving

1.) Working of gravure cells
2.) Different types of gravure cells
3.) Construction of gravure cylinder
4.) Direct and carbon tissue method
5.) Description of chemical etching- electronic engraving and laser engraving
6.) Surface finishing techniques
7.) Use and maintenance of doctor blade

CO4: Understand Gravure Ink Manufacturing Ingredients of Inks, Solvent Recovery Method

1.) Preparation of gravure inks
2.) Purpose of pigments, vehicles, driers and solvents
3.) Solvent recovery method

CO5: Classify Gravure Substrates and Properties of SubstratesPurpose of substrate

1.) Different types of substrates
2.) Know about PVC, PVA, BOPP and Foil
3.) Difference between film and paper and board
4.) Properties of substrate
5.) Characteristics of substrate

CO6: Know the Working Principles of Slitting and Rewinding Machines and Understanding the Purpose of slitting machine

1.) Uses of rewinding machine
2.) Know about quality control
3.) Identification of printing defects
4.) Working of screen printing
5.) Applications of screen printing

Suggested Students Activities:

1.) Understand and make report on flexography printing
2.) Compare the types of Flexography printing machines
3.) Distinguish between anilox roller and fountain roller
4.) Understand and make report on gravure cylinder
5.) Make a report on gravure applications

Recommended Books

1. Handbookof Print Media by Helmut Kipphan
2. Pira International, U.K. Screen process printing
3. Flexography Primer GATF
4. N. Bartlett Drive, Milwaukee

E-Learning Links:

1.) Rees, Fran. Johannes Gutenberg: Inventor of the Printing Press
2.) Thomas Franklin Carter, The Invention of Printing in China and its Spread Westward, The Ronald Press, NY 2nd ed. 1955, pp. 176–178
3.) Kipphan, Helmut (2001). Handbook of print media: technologies and production methods (Illustrated ed.). Springer. pp. 130–144. ISBN 3-540-67326-1.
4.) *Kipphan, Helmut (2001).* Handbook of print media: technologies and production methods *(Illustrated ed.). Springer. pp. 48–52.* ISBN 3-540-67326-1.

CO-PO Mapping Matrix

COURSE OUT COME		CL	Linked PO	Teaching Hrs
CO1	Understand Flexography Printing Process, Types of Flexographic Image Carrier	R/U/A	1,2,10	07
CO2	Select Inking Unit, Impression and Plate Cylinders and Classify Flexographic Presses	R/U/A	3, 4 , 5	12
CO3	Identify different types of cells, Know About Etching And Engraving	R/U/A	1,2,10	08
CO4	Understand Gravure Ink Manufacturing Ingredients of Inks, Solvent Recovery Method	R/U/A	3,4, 6	09
CO5	Classify Gravure Substrates And Properties Of Substrates	R/U/A	1, 2, 4, 7	08
CO6	Know the Working Principles Of Slitting And Rewinding Machines and Understanding Of Screen Printing	U/A	1, 2,3,9,10	16

MID SEM-I EXAM

S.No	Unit Name	R	U	A	Remarks
1	Unit-I	1, 2	5(a) 5(b)	7(a) 7(b)	
2	Unit-II	3, 4	6(a) 6(b)	8(a) 8(b)	
Total Questions		4	4	4	

MID SEM –II EXAM

S.No	Unit Name	R	U	A	Remarks
1	Unit-III	1, 2	5(a) 5(b)	7(a) 7(b)	
2	Unit-IV	3, 4	6(a) 6(b)	8(a) 8(b)	
Total Questions		4	4	4	

Semester End Examination

Sl No	Unit No.	Questions to be set for SEE				Remarks
		R		U	A	
1	I	4	1	9(a)	13(a)	
2	II					
3	III		2	10(a)	14(a)	
4	IV					
5	V		3 (5, 6)	9(b) 11(a) 11(b)	13(b) 15(a) 15(b)	
6	VI		3 (7,8)	10(b) 12(a) 12(b)	14(b) 16(a) 16(b)	
Total Questions		8		8	8	

Legend:	Remembering (R)	1 Mark
	Understanding (U)	3 Marks
	Application (A)	5 Marks

SEE - MODEL QUESTION PAPER

DIPLOMA IN PRINTING TECHNOLOGY
Sub Name: GRAVURE, FLEXO & SCREEN PRINTING
Sub Code: 18PT-303C

Time : 2 Hours **Max Marks = 40**

Part – A **8 X 1 = 08 Marks**

Answer all the Questions. Each Question carries one mark

1.) Write principles of flexography printing

2.) Write the ingredients of inks

3.) What is electro plating

4.) What is the purpose of doctor blade

5.) What is the difference between etching and engraving

6.) Write advantages with screen printing

7.) What is mesh

8.) Write any four printing defects

Part – B **4 X 3 = 12 Marks**

Answer all Four Questions. Each Question carries Three marks

9.) a.) Write advantages with screen printing

(or)

b.) Classify flexographic machines and explain in brief

10.) a.) Write the purpose of squeegee

(OR)

b.) Explain about manufacturing of gravure ink

11.) a.) What is the difference between slitting and rewinding

(OR)

b.) Which type of precautions to be taken during preparation of gravure cylinder

12.) a.) Write different printing defects and their remedies

(OR)

b.) Briefly describe about screen printing

Part – C **4 X 5 = 20 Marks**

Answer all the Four Questions. Each Question carries 5 marks

13.) A.) Describe plate mounting and storage of plates

(OR)

B.) Explain about anilox roller

14.) A.) What do you know about electroplating

(OR)

B.) Write the applications of screen printing

15.) A.) Explain about different substrates used in gravure printing

(OR)

B.) Describe rotary screen printing

16.) A.) Explain about PVC, PVA and BOPP

(OR)

b.) Explain about inking system in flexography

CIE -MODEL QUESTION PAPER

DIPLOMA IN PRINTING TECHNOLOGY

Sub Name: Gravure, Flexo & Screen Printing

Sub Code: 18PT-303C

I MID SEM

Time : 1 Hours **Max Marks = 20**

Part – A 4 X 1 = 04 Marks

Answer all the Questions. Each Question carries one mark.

1.) Who is the inventor of Flexography
2.) Write the Principle of Screen Printing
3.) What type of inks are used for Flexography
4.) Write the principle of Gravure Process

Part – B 2 X 3 = 6 Marks

Answer all the Questions. Each Question carries 3 marks

5.) A.) Explain Solvent recovery in Gravure Printing

(OR)

B.) Write about Flat hinged frame in Screen Printing

6.) A.) List the different jobs printed in flexography

(OR)

B.) Write the difference between Flexography and Gravure Process

Part – C 2 X 5 = 10 Marks

Answer all the Questions. Each Question carries 5 marks

7.) A.) Describe Gravure Cylinder Making

(OR)

B.) Explain any one type of Stencil making in Screen Printing

8.) A.) How to select different Mesh in Screen Printing

(OR)

B.) Explain the working procedure of Screen Printing

CIE -MODEL QUESTION PAPER

DIPLOMA IN PRINTING TECHNOLOGY

Sub Name: Gravure, Flexo & Screen Printing

Sub Code: 18PT-303C

II MID SEM

Time : 1 Hours **Max Marks = 20**

Part – A 4 X 1 = 04 Marks

Answer all the Questions. Each Question carries one mark.

1.) What do you know about flexography printing
2.) Write short notes on photopolymer plates
3.) Write about Anilox roller
4.) Who invented Gravure Printing Process

Part – B 2 X 3 = 6 Marks

Answer all the Questions. Each Question carries 3 marks

5.) A.) What do you know about plate mounting

(OR)

C.) Describe storage of flexographic plates

6.) A.) Explain about inking system in flexography

(OR)

B.) Classify flexographic presses and explain

Part – C 2 X 5 = 10 Marks

Answer all the Questions. Each Question carries 5 marks

7.) A.) Describe controlling system in flexographic printing

(OR)

B.) Write difference between rubber and photopolymer plates

8.) A.) Write about Cell Structure in Gravure Printing

(OR)

B.) What is the purpose of plate cylinder?

PAPER AND INK

Course Title : Paper and Ink	**Course Code:18PT-304C**
Semester : III	**Course Group : Core**
Teaching Scheme in Hrs (L:T:P) : 36:24:0	**Credits : 3**
Type of Course : Lecture + Assignments	**Total Contact Hours : 45hrs/60 pds**
CIE : 60 Marks	**SEE : 40 Marks**

Pre requisites

This course requires the knowledge of Printing Systems and Materials

Course Outcomes

CO1 :	Analyze the Pulping process and Manufacturing of Paper.
CO2 :	Classify the various paper, boards, ink used in printing industry
CO3 :	Correlate the run ability and print ability properties of paper
CO4 :	Analyse problems with paper on press
CO5 :	Select the ink ingredients for Ink Manufacturing Process.
CO6 :	Analyse problems with Ink

Course Content

UNIT 1: Paper manufacture and chemistry of pulp **Duration: 07Pds**

Manufacture of virgin and non virgin paper-raw material used in pulp making – Ground wood or mechanical pulp - thermo mechanical pulp - Chemical pulp - The sulphate and sulphite processes for making chemical wood pulp - Other materials used in making the pulps - sizing materials - mineral fillers - colouring dyes and pigments – Bleaching system – Recycling of paper

UNIT 2: Paper and Board Classification **Duration:12 Pds**

The main classes of papers and boards – common finishes of paper including special papers. Physical characteristics of various kinds of boards - methods of identification - Suitability for different classes of print jobs and printing processes.

UNIT 3: Properties of paper and conditioning in Pressroom **Duration: 08 Pds**

Brightness-opacity-smoothness-gloss-tensile strength-bursting strength-folding endurance-tear resistance-pick resistance-stiffness-internal bond strength and ink absorbency - Sophisticated instruments used for measuring these properties. – Temperature and moisture conditioning of press room - Press room RH and paper RH - Handling paper rolls - Static electricity and its elimination.

UNIT 4: Problems with paper **Duration: 09 Pds**

Fluffing-See through-Strike through-Opacity-Curling-Dimensional stability
Drying-Trapping-Hickeys-Picking-Piling-Ink set-off-Tinting-Scumming-Stripping- Mechanical ghosting, Methods of identifying problems-Causes and determining the appropriate remedial action.

UNIT 5: Printing ink ingredients, manufacture and its properties **Duration: 08 Pds**

Printing ink ingredients - pigments – vehicles - additives and chemical properties required in general-Special properties required for Letterpress-Offset-Gravure-Flexography-Screen Printing processes-Manufacturing Ink-New generation inks-Properties of inks-Mechanism of Drying

UNIT 6: Problems with paper and ink on press and their remedies **Duration: 16 Pds**

Drying methods - Drying by Oxidation, Polymerization, Absorption, and Evaporation.
Ink problems - Mottle, Chalking, Chemical ghosting, trapping, hickeys, picking, piling, set-off, tinting, scrumming, stripping and mechanical ghosting problems - causes and remedies for this problems

Specific Learning Outcomes

CO1: Analyze the Pulping process and Manufacturing of Paper.

1.) Explain the process of manufacturing paper

2.) Describe the manufacture of virgin and non virgin paper

3.) Identify the raw material used in pulp making

4.) Explain different kinds of pulp

5.) Describe the making of chemical wood pulp

6.) List the materials used for sizing

7.) Explain bleaching system

8.) Explain recycling of paper

CO2: Classify the various paper, boards, ink used in printing industry Classify different kinds of papers and boards

1.) Explain common finishes of paper, including special papers.

2.) Explain physical characteristics of various kinds of boards

3.) Identify different kinds of boards

4.) Explain suitability of different kinds of paper and boards with respect to different jobs and printing processes

5.) International Standard Paper Sizes

CO3: Correlate the run ability and print ability properties of paper

1.) Define brightness, opacity, smoothness, gloss and tensile strength.

2.) Explain bursting strength, folding endurance, tear resistance and pick resistance.

3.) Describe stiffness, internal bond strength and ink absorbency.

4.) Identify sophisticated instruments used for measuring the above properties.

5.) Explain temperature and moisture conditioning of press room

6.) Discuss Press room RH and paper RH

7.) Explain handling of paper rolls

8.) Define static electricity

9.) Explain how static electricity is eliminated

CO4: Analyse problems with paper on press

1.) Define Fluffing, See through, Strike through, opacity, Curling and Dimensional stability

2.) Explain Drying-in, Trapping, Hickeys, Picking

3.) Describe piling, Ink set-off, Tinting

4.) Explain Scumming, Stripping, Mechanical ghosting

5.) Discuss methods of identifying problems

6.) Identify causes of problems

7.) Determine appropriate remedial action

CO5: Select the ink ingredients for Ink Manufacturing Process.

1.) Classify the ingredients of ink

2.) Define pigment, vehicle, resin, additive

3.) Explain chemical properties required for the above ingredients

4.) Tell the special properties required for letterpress, offset, gravure, flexography and screen printing processes

5.) Explain manufacture of ink

6.) Identify new generation inks

7.) Explain properties of ink in general

8.) Describe the mechanism of ink drying.

CO6: Analyse problems with Ink

1.) To know different Drying methods
2.) Define Drying by Oxidation,
3.) What is Polymerization,
4.) Understand Absorption,
5.) Define Evaporation.
6.) Different Ink problems
7.) Know Mottle
8.) Define Chalking
9.) Reasons for Chemical ghosting,
10.) Determine Trapping
11.)Describe Hickeys
12.)Define Picking
13.) Explain Piling,
14.) Define set-off,
15.) Reasons for Tinting
16.) What is Scrumming,
17.) Define Stripping and mechanical ghosting problems

Suggested Students Activities:

1.) Each student will do the report on Types of Paper and Manufacture of
2.) Each student will do the report on fibrous raw materials and non fibrous.
3.) Each student will do the report on ingredients for ink.
4.) Each student will do the report on formulation of ink

Recommended Books

1.Handbook Of Print Media by Helmut Kipphan
2. Pira International, U.K. Screen process printing
3. Flexography Primer GATF
4. N. Bartlett Drive, Milwaukee

E-Learning Links:

1.) https://www.springer.com/in/book/9780948905810
2.) https://books.google.co.in/books/about/The_Printing_Ink_Manual.html?id=2PwKTqO5dioC&redir_esc=y
3.) https://books.google.co.in/books/about/The_Printing_Ink_Manual.html?id=gpanKwAACAAJ&redir_esc=y
4.) https://www.scribd.com/doc/147109800/Printing-Ink-Manual
5.) https://www.researchgate.net/publication/321599448_The_Printing_Ink_Manual

MID SEM-I EXAM

S.No	Unit Name	R	U	A	Remarks
1	Unit-I	1, 2	5(a) 5(b)	7(a) 7(b)	
2	Unit-II	3, 4	6(a) 6(b)	8(a) 8(b)	
Total Questions		4	4	4	
MID SEM –II EXAM					
S.No	Unit Name	R	U	A	Remarks
1	Unit-III	1, 2	5(a) 5(b)	7(a) 7(b)	
2	Unit-IV	3, 4	6(a) 6(b)	8(a) 8(b)	
Total Questions		4	4	4	

Semester End Examination

Sl No	Unit No.	Questions to be set for SEE				Remarks
		R		U	A	
1	I	4	1	9(a)	13(a)	
2	II					
3	III		2	10(a)	14(a)	
4	IV					
5	V		3 — 5, 6	9(b) 11(a) 11(b)	13(b) 15(a) 15(b)	
6	VI		3 — 7,8	10(b) 12(a) 12(b)	14(b) 16(a) 16(b)	
Total Questions		8		8	8	

Legend:	Remembering (R)	1 Mark
	Understanding (U)	3 Marks
	Application (A)	5 Marks

SEE - MODEL QUESTION PAPER

DIPLOMA IN PRINTING TECHNOLOGY

Sub Name: Paper and Ink **Sub Code: 18PT-304C**

Time : 2 Hours **Max Marks = 40**

Part – A **8 X 1 = 08 Marks**

Answer all the Questions. Each Question carries One mark

1.) Mention Grammage

2.) Write the role of ink in Printing industry

3.) What are the properties of Letterpress Ink

4.) Write about Picking

5.) Why Ink does not dry Properly

6.) What are virgin Papers

7.) Define Fluffing

8.) What is Scum

Part – B **4 X 3 = 12 Marks**

Answer all Four Questions. Each Question carries Three marks

9.) A.) Define Density of Paper

(OR)

b.) Write the role of Ink in Printing Industry

10.) A.) What are the properties of Offset Ink

(OR)

B.) Write about Hickeys

12.) A.) What is Ink Stripping of Rollers

(OR)

B.) Explain Chemical Pulping

12.) A.) Describe Brown Stock Washing

(OR)

B.) Write about Recycled Paperboard

Part – C **4 X 5 = 20 Marks**

Answer all the Four Questions. Each Question carries 5 marks

15.) A.) Classify Paper and Explain any Five Types

(OR)

C.)Explain any two Optical appearance of Paper

16.) A.) Write about Moisture content of Paper

`

(OR)

B.) Explain Pigment of Ink

17.) A.) Describe New Generation of Ink

(OR)

B.) Explain curling of Paper

18.) A.) Write about Dimensional Stability of Paper

(OR)

b.) Write in detail the Problems of Paper

CIE -MODEL QUESTION PAPER

DIPLOMA IN PRINTING TECHNOLOGY

Sub Name: Paper and Ink Sub Code: 18PT-304C

I MID SEM

Time : 1 Hours **Max Marks = 20**

Part – A 4 X 1 = 04 Marks

Answer all the Questions. Each Question carries two marks

1.) Define Paper
2.) What is Papyrus
3.) What is DP
4.) Draw the Molecular Structure of Cellulose Fibre

Part – B 2 X 3 = 6 Marks

Answer all the Questions. Each Question carries 3 marks

5.) A.) Write about Cellulose

(OR)

D.) What is a Fibre

6.) A.) Write the difference between paper and board

(OR)

B.) What is debarking

Part – C 2 X 5 = 10 Marks

Answer all the Questions. Each Question carries 5 marks

7.) A.) Why do Pin holes during Printing

(OR)

B.) Define Chalking

8.) A.) Why is Evaporation needed while Printing

(OR)

B.) Write about Mottle

CIE -MODEL QUESTION PAPER

DIPLOMA IN PRINTING TECHNOLOGY

Sub Name: Gravure, Flexo & Screen Printing

Sub Code: 18PT-303C

II MID SEM

Time : 1 Hours **Max Marks = 20**

Part – A 4 X 1 = 04 Marks

Answer all the Questions. Each Question carries two marks

1.) Which ingredient gives color to Ink
2.) List the Raw materials used to make Pulp
3.) What is Chemical Wood Pulp
4.) What is Press Room RH

Part – B 2 X 3 = 6 Marks

Answer all the Questions. Each Question carries 3 marks

5.) A.) How to handle Paper Rolls

(OR)

E.) Define Static Electricity

6.) A.) Why do Tinting Problem Occurs

(OR)

B.) What are the materials used for Sizing

Part – C 2 X 5 = 10 Marks

Answer all the Questions. Each Question carries 5 marks

7.) A.) Explain Bleaching System

(OR)

B.) Explain Drying-in

8.) A.) Write the Process of Paper Manufacturing

(OR)

B.) Explain the ingredients of Ink

PRINT FINISHING OPERATIONS

Course Title	**: Print Finishing Operations**	**Course Code**	**:18PT- 305C**
Semester	**: III**	**Course Group**	**: Core**
Teaching Scheme in Hrs (L:T:P) : 36:24:0		**Credits**	**: 3**
Type of Course	**: Lecture + Assignments**	**Total Contact Hours : 45hrs/60 pds**	
CIE	**: 60 Marks**	**SEE**	**: 40 Marks**

Pre requisites

This course requires basic knowledge of Printing Systems and Materials

Course Outcomes

CO1 :	Analyze various Binding process
CO2 :	Organize Ware house, materials used in binding
CO3 :	Differentiate Style of book covering
CO4 :	Illustrate Post press operations
CO5 :	Differentiate Folding machine , cutting machine
CO6 :	Evaluate Perfect binding, Wire Stitching Machine ,Rounding and backing machine

Course Content

UNIT - I Introduction to Binding

History of book binding - Earlier books; Classification of Book Binding- Quarter Bound Book, Half Bound Book – Old Style and New style, Full bound Book; End Paper – Types and Uses – Single End Paper, Made End Paper, Reinforced End Paper, Cloth joint End Paper; Zig Zag End Paper; Paper – Various sizes of Conventional and ISO papers – Their sub divisions – GSM system.

UNIT - II Materials used in Binding

Ware House, Types of Ware House – white Paper ware house, Printed paper ware house; Covering Materials – Binding cloth, Buckram Cloth, Rexene leather, Paper fabric, PVC; Reinforcing Materials – Mull Cloth, Calico Cloth, Tapes and cords; Securing Materials – Thread, Wire, Metal and Plastic Units; Adhesives – Paste, Glue, Synthetic Adhesive, Hot melt, Gum; Book Finishing Materials – Gold leaf, Blocking foil

UNIT - III Methods of Binding & Modern Commercial Binding

Styles of Book covering – Hard cover – Paper back – Thermally Activated binding;
Letterpress Binding; and compare Stationery Binding with Publisher's Binding;
and compare Loose leaf Binding with Adhesive Binding; Edge Decoration; Conservation and Restoration

UNIT - IV Forwarding Operations

Cutting, Trimming, Difference between Cutting and Trimming, Folding – Types of Folding – Folding to paper, Folding to print, Lump folding; Creasing, Gathering, Collating, Binder's/Collating mark, Inserting; Perforating - Types of Perforating, Punching and Drilling, Numbering – Horizontal numbering and vertical numbering; Die Cutting and Slitting operations

UNIT - V Automation in Binding

Programmable Cutting Machine and its Operations – machine bed, Clamp, Back guage, Knife and safety mechanisms; Folding Machine and its operations – Buckle folding, knife folding and combination folding stations.

UNIT-VI Modern Binding

Perfect Binding-Advantages and Disadvantages, Thermal Lamination Machine, Combo Binding, Edge Cutter, Wire Stitching Machine and its Operations – wire unwind, wire straightened, cutter block; Rounding and Backing Machine and its operations; Gathering Machines and its operations.

Specific Learning Outcomes

CO1: Analyze various Binding process

1 Describe History of book binding
2 Classification of Book Binding
3 End Paper
4 Binding and Finishing Tools
5 Define GSM system

CO2: Organize Ware house, materials used in binding

1 Ware House
2 Covering Materials
3 Reinforcing Materials
4 Securing Materials
5 Adhesives
6 Book Finishing Materials

CO3: Differentiate Style of book covering

1 Styles of Book covering – Hard cover – Paper back – Thermally Activated binding
2 Letterpress Binding
3 Compare Stationery Binding with Publisher's Binding
4 Compare Loose leaf Binding with Adhesive Binding
5 Edge Decoration
6 Conservation and Restoration

CO4: Illustrate Post press operations

1 Cutting
2 Folding
3 Creasing
4 Perforating
5 Die Cutting and Slitting Operations

CO5: Differentiate Folding machine, cutting machine

1 Programmable Cutting Machine
2 Folding Machine
3 Buckle folding
4 Knife folding
5 Combination folding stations.

CO6: Evaluate Perfect binding, Wire Stitching Machine, Rounding and backing machine

1 Perfect Binding-Advantages and Disadvantages
2 Thermal Lamination Machine,
3 Combo Binding, Edge Cutter,
4 Wire Stitching Machine and its Operations – wire unwind, wire straightened, cutter block
5 Rounding and Backing Machine and its operations; Gathering Machines and its operations

Suggested Students Activities:

1.) Understand and make report on history of book binding
2.) Compare the types of Differentiate Folding machine, cutting machine
3.) Distinguish between Binding and Finishing Materials
4.) Understand and make report Folding machine, cutting machine.
5.) Differentiate Styles of book covering

Recommended Books

- Modern Book Binding by Alex J. Vaughan
- Finishing Process in Printing by A.G. Martin
- Manual of Book Binding by W. Johns
- Folding in Practice – by Alfred Furler
- Printing and Die Cutting - by Vanessa Bailey
- Hand Book of Print Media – byHelmut Kippan Ed., Heidelberg
- Introduction to Printing and Finishing – by Hugh M. Spiers
- What the Printer should know about paper – by Lawrence A. Wilson
- Printing Technology – by Michael Adams J. and Penny Ann Dohn

.

E-Learning Links:

1.) Rees, Fran. Johannes Gutenberg: Inventor of the Printing Press
2.) Thomas Franklin Carter, The Invention of Printing in China and its Spread Westward, The Ronald Press, NY 2nd ed. 1955, pp. 176–178
3.) Kipphan, Helmut (2001). Handbook of print media: technologies and production methods (Illustrated ed.). Springer. pp. 130–144. ISBN 3-540-67326-1.
4.) *Kipphan, Helmut (2001).* Handbook of print media: technologies and production methods *(Illustrated ed.). Springer. pp. 48–52.* ISBN 3-540-67326-1.

MID SEM-I EXAM

S.No	Unit Name	R	U	A	Remarks
1	Unit-I	1, 2	5(a) 5(b)	7(a) 7(b)	
2	Unit-II	3, 4	6(a) 6(b)	8(a) 8(b)	
Total Questions		4	4	4	

MID SEM –II EXAM

S.No	Unit Name	R	U	A	Remarks
1	Unit-III	1, 2	5(a) 5(b)	7(a) 7(b)	
2	Unit-IV	3, 4	6(a) 6(b)	8(a) 8(b)	
Total Questions		4	4	4	

Semester End Examination

Sl No	Unit No.	Questions to be set for SEE				Remarks
		R		U	A	
1	I	4	1	9(a)	13(a)	
2	II					
3	III		2	10(a)	14(a)	
4	IV					
5	V		3 5, 6	9(b) 11(a) 11(b)	13(b) 15(a) 15(b)	
6	VI		7,8	10(b) 12(a) 12(b)	14(b) 16(a) 16(b)	
Total Questions		8		8	8	

Legend:	Remembering (R)	1 Mark
	Understanding (U)	3 Marks
	Application (A)	5 Marks

SEE - MODEL QUESTION PAPER

DIPLOMA IN PRINTING TECHNOLOGY

Sub Name: Print Finishing Operations

Sub Code: 18PT-305C

Time : 2 Hours **Max Marks = 40**

Part – A **8 X 1 = 08 Marks**

Answer all the Questions. Each Question carries One mark

1.) Write short notes on quarter bound

2.) Define GSM

3.) What is the importance of buckram cloth

4.) Write about hard cover

5.) What is the purpose of trimmimg

6.) Define perforating

7.) Write importance of clamp

8.) Define cutter block

Part – B **4 X 3 = 12 Marks**

Answer all Four Questions. Each Question carries Three marks

9.) A.) classify endpapers and explain

(or)

b.) what is the importance of ISO paper sizes

10.) A.) define warehouse

(OR)

B.) list out covering materials

13.) A.) define Adhesive and classify

(OR)

B.) write about thermally activated binding

12.) A.) list out folding and explain any one

(OR)

B.) what is the purpose of numbering

Part – C **4 X 5 = 20 Marks**

Answer all the Four Questions. Each Question carries 5 marks

18.) A.) Describe history of book binding

(OR)

B) Explain about securing materials

19.) A.) compare stationery binding with publishers binding

(OR)

B.) explain about gathering machine

15.) A.) write difference between die cutting and slitting

(OR)

B.) explain about programmable cutting machine

16.) A.) what is the difference between buckle and knife folding

(OR)

b.) explain about thermal lamination

CIE -MODEL QUESTION PAPER

DIPLOMA IN PRINTING TECHNOLOGY

Sub Name: PRINT FINISHING OPERATIONS

Sub Code: 18PT-305C

I MID SEM

Time : 1 Hours **Max Marks = 20**

Part – A 4 X 1 = 04 Marks

Answer all the Questions. Each Question carries two marks

1.) Define GSM
2.) Write about adhesive binding
3.) List out end papers
4.) Write about folding

Part – B 2 X 3 = 6 Marks

Answer all the Questions. Each Question carries 3 marks

5.) A.) Explain about ISO paper sizes

(OR)

F.) Explain about history of binding

6.) A.) write about stationery binding

(OR)

B.) Write the difference between cutting and trimming

Part – C 2 X 5 = 10 Marks

Answer all the Questions. Each Question carries 5 marks

7.) A.) Describe edge decoration

(OR)

B.) Explain any one type of folding

8.) A.) explain about slitting

(OR)

B.) Explain the working procedure of cutting machine

CIE -MODEL QUESTION PAPER

DIPLOMA IN PRINTING TECHNOLOGY

Sub Name: PRINT FINISHING OPERATIONS

Sub Code: 18PT-305C

II MID SEM

Time : 1 Hours **Max Marks = 20**

Part – A 4 X 1 = 04 Marks

Answer all the Questions. Each Question carries two marks

1.) Write about half bound book
2.) Write short notes on covering materials
3.) Write about hard press
4.) Write about sigle end paper

Part – B 2 X 3 = 6 Marks

Answer all the Questions. Each Question carries 3 marks

5.) A.) What do you know about thermal laminating

(OR)

G.) Describe finishing materials

6.) A.) Explain about gathering machine

(OR)

B.) Classify folding and explain

Part – C 2 X 5 = 10 Marks

Answer all the Questions. Each Question carries 5 marks

7.) A.) Describe letter press binding

(OR)

B.) Write difference between publishers and loose leaf binding

8.) A.) Write about backing machine

(OR)

B.) What is the purpose of hot melt

SHEET FED OFFSET LAB

Course Title:	**Sheet fed Offset Lab**	Course Code :	**18C-306P**
Semester:	**III Semester**	Course Group :	**Core**
Teaching Scheme in Hrs(L:T:P):	**7.5:00:37.5**	Credits :	**1.5**
Type of Course :	**Lecture+Practical**	Total Contact Hours :	**45 Periods**
CIE :	**60 Marks**	SEE :	**40 Marks**

Pre requisites

Availability of Sheet fed offset printing machine and materials

Course Content

UNIT 1: Offset Lithographic Presses **Periods-15**

1.) Construction of sheet fed press
2.) Draw the various Press configurations
3.) Prepare a copy on hand proof press

UNIT 2: In feed and Printing Unit **Periods-15**

1.) Practice on various feeding systems
2.) Dampening and inking system
3.) Plate cylinder
4.) Blanket cylinder
5.) Impression cylinder

UNIT 3: Make ready Operations **Periods-15**

1.) Pre make ready operations
2.) Make ready operations
3.) Safety precautions while working on press

CO-PO Mapping Matrix

Course Outcome		CL	Linked PO	Teaching Hours
CO1	Know different types of Offset lithographic presses used for various printing jobs	R/U/A	1,2,3,4,5,6,7,8	15
CO2	Prepare the automatic feeder and plate clamping and blanket fixing	R/U/A	1,2,3,4	15
CO3	Understand the Make ready Operations	R/U/A	1,2,3	15

GRAVURE, FLEXO & SCREEN PRINTING LAB

Course Title:	**Gravure, Flexo& Screen Printing Lab**	Course Code :	**18PT-307P**
Semester:	**III Semester**	Course Group :	**Core**
Teaching Scheme in Hrs(L:T:P):	**7.5:00:37.5**	Credits :	**1.5**
Type of Course :	**Lecture+Practical**	Total Contact Hours :	**45Periods**
CIE :	**60 Marks**	SEE :	**40 Marks**

Pre requisites

Availability of Gravure, Flexo and Screen printing machines and materials

Course Content

UNIT 1: Various aspects of flexography printing **Periods-15**

4.) Prepare a maintenance schedule for a four colour schedule
5.) Identify different materials
6.) Collect various samples of flexo printing
7.) Sort out the substrates according to their thickness
8.) making gravure cylinder through conventional etching process

UNIT 2: Tools Used In Gravure Section **Periods-15**

6.) List out tools used on a gravure machine and write down their purposes
7.) Feeding the substrate roll from unwind unit to rewind unit
8.) Setting the doctor blade and arranging inking system
9.) usage of heating chamber and control panel

UNIT 3: Post Printing Operations **Periods-10**

1.) Operate slitting and rewinding machine
2.) Proper cleaning of flexographic plates
3.) Changing of gravure cylinder
4.) Packing and quality control

UNIT 4: Screen printing machines **Periods-05**

1.) Stencil usage
2.) Mesh and nylon threads
3.) Purpose of squeegee
4.) Applications in screen printing.

CO-PO Mapping Matrix

Course Outcome		CL	Linked PO	Teaching Hours
CO1	Field visit to a flexo printing unit for observing the operation of flexoplate making. Write down the sequence of platemaking and plate mounting	R/U/A	1,2,3,,5,6,7,8,	15
CO2	Changing the gravure cylinders of the same and different diameters in accordance with the nature of the job.	R/U/A	1,2,4,6,10	15
CO3	Operate slitting and rewinding machine	R/U/A	1,2,3,4	10
C04	Screen Printing Machines	R/U/A	1,3,4,6,9	05

PRINT FINISHING LAB

Course Title:	**Print Finishing Lab**	Course Code :	**18PT-308P**
Semester:	**III Semester**	Course Group :	**Core**
Teaching Scheme in Hrs(L:T:P):	**7.5:00:37.5**	Credits :	**1.5**
Type of Course :	**Lecture+Practical**	Total Contact Hours :	**45 Periods**
CIE :	**60 Marks**	SEE :	**40 Marks**

Pre requisites

Knowledge on Printing Workshop

Course Content

CO1: Binding tools

1.) Study of equipment's, tools and materials in binding department.
2.) Prepare different styles of Endpaper.
3.) Prepare books by using different styles of Sewing.
4.) Prepare books by using different styles of Binding.

CO2: Types of book bound

1.) Prepare a book of Quarter bound cut flush and turned in with squares.
2.) Prepare a book of half bound conventional and modern.
3.) Prepare a book of Full bound.
4.) Prepare a book with Case making.
5.) Prepare a book with Account book binding.

CO3: Indexing

1.) Do Indexing.
2.) Do one letter index.
3.) Do two letter index.
4.) Do Vowel index.
5.) Do Edge decoration to a bound book.
6.) Do Marbling.

CO-PO Mapping Matrix

Course Outcome		CL	Linked PO	Teaching Hours
CO1	Binding tools and equipment	R/U/A	1,2,3,4,5,6,7,8	15
CO2	Case making, account book binding	R/U/A	1,2,3,4	15
CO3	Vowel index, edge decoration to a bound book	R/U/A	1,2,3	15

IMAGE PROCESSING LAB

Course Title:	**Image Processing Lab**	Course Code :	**18C-309P**
Semester:	**III**	Course Group :	**Core**
Teaching Scheme in Hrs(L:T:P):	**7.5:00:37.5**	Credits :	**1.5**
Type of Course :	**Lecture + Practical**	Total Contact Hours :	**45 Periods**
CIE :	**60 Marks**	SEE :	**40 Marks**

Pre requisites

Knowledge on Computer Fundamentals

Course Content

UNIT 1: TYPES OF ORIGINALS **Periods-15**

1) Collection of different types of originals for reproduction.
2) Continuous tone originals in Flatbed Scanners.
3) Scan line in flat bed scanners
4) Image capturing techniques.

UNIT 2: FILM PROCESSINGPeriods-15

1) Mounting of reflection and transparent original on different cameras
2) Making a continuous tone negative through indirect method
3) Making a halftone positive through indirect method

UNIT 3: COMPUTER TO FILM **Periods-15**

1) Computer to film (CTF)
2) Use of percentage screens for tints
3) Developing, stopping and fixing of exposed film
4) Automatic film processing
5) Use of Densitometers
6) Use of image setters

CO-PO Mapping Matrix

Course Outcome		CL	Linked PO	Teaching Hours
CO1	CLASSIFY TYPES OF ORIGINALS	R/U/A	1,2,4,9	15
CO2	LEARN ORIGINATE FILM PROCESSING	R/U/A	2,4,6,9	15
CO3	INTERPRET COMPUTER TO PLATE	R/U/A	1,4,7,10	15

Communication Skills and Life Skills

Course Title	**Communication Skills and Life Skills**	Course Code	**18 PT-310 P**
Semester	**III**	Course Group	**Foundation**
Teaching Scheme in Periods- L: T:P	**15:0:30**	Credits	**1.5**
Methodology	**Lecture + Practical**	Total Contact Hours	**45 Periods (3 Periods per Week)**
CIE	**60 Marks**	SEE	**40 Marks**

Rationale:

This course is designed to impart communication skills and life skills to the students of diploma which will help them a great deal in personal and professional fronts.

Prerequisites:

This course requires the basic knowledge of vocabulary, grammar, and four language learning skills, viz. Listening, Speaking, Reading and Writing.

Course Outcomes:

	At the end of the course the students will have the ability to:
Listening Skills	Identify the main or the central idea. Listen for specific details. Learn the pronunciation.
Communication Skills – I	Learn relevant vocabulary to make introductions. Learn to introduce oneself in formal and informal situations. Learn vocabulary and expressions useful for describing objects Describe objects
Communication Skills – II	Learn vocabulary to talk about the past Describe the incidents that happened in the past Learn the techniques of organising the matter / content for one-minute speech. Speak fluently and accurately using appropriate body language.
Life Skills – I	Think positively. Develop positive attitude. Overcome negative attitude. Know the importance of setting goals. Set goals using SMART features.

Life Skills – II	Know the reasons for a problem. Learn to overcome problems. Learn the various techniques to solve the problems. Learn to make proper decisions on time. Think 'out of the box'. Learn to be creative. Think innovatively. Think critically.
Life Skills – III	Know how to be a leader. Learn the qualities of a good leader. Learn the qualities of a good team. Learn the advantages and disadvantages of a team. Manage time effectively. Learn various time management techniques. Learn the importance of prioritisation.

CO-PO Matrix

	Course Outcome		**Linked PO**
CO 1	Listening for main idea and specific details	**R/U/A**	**1, 2, 3, 4, 5,7,8, 9,10**
CO 2	Introduce oneself and Describe Objects	**R/U/A**	**1,2,3,8,9,10**
CO 3	Talk about the past and speak fluently for one minute	**R/U/A**	**1,2,3,7,8.9,10**
CO 4	Develop positive attitude and set short term and long term goals	**R/U/A**	**1,2,3,7,8,9,10**
CO 5	Learn to solve a problem, make decisions and think innovatively	**R/U/A**	**1,2,3,7,8,9,10**
CO6	Learn to become a good team member and leader	**R/U/A**	**1,2,3,7,8,9,10**

Course Contents:

I. Listening Skills **Duration: 9**

1. Listening – I
    - Digital Camera
    - A Dialogue
    - Wild Animal / Human conflict
2. Listening – II
    - A Recipe

- A Telephone conversation
- An Interview

II. Communication Skills – I **Duration:6**

3. Introducing Oneself
4. Describing Objects

III. Communication Skills – II **Duration:6**

5. Talking About the Past
6. Just A Minute

IV. Life Skills – I **Duration:6**

7. Attitude
8. Goal Setting

V. Life Skills – II **Duration:9**

9. Problem Solving and Decision-Making Skills
10. Critical Thinking & Creativity

VI. Life Skills – III **Duration:9**

11. Leadership and Teamwork
12. Time Management

Suggested Student Activities:

- Listening Comprehension
- Seminars
- Paper Presentations
- Line ups for introducing oneself
- Describing persons / places / things
- Picture description
- Role Plays
- Dumb charades
- What is in the bag? (Identify the objects)
- Games using Online Dictionaries
- Sharing the information using emails, chats and groups
- Just A Minute
- Writing diary events
- Find a solution to the problem
- Making innovative things through recycling
- Creating advertisements
- Five-minute activities on Life Skills
- Watching videos on life skills and making presentations
- Case studies

Evaluation Pattern:

I. Continuous Internal Examination: **60 Marks**

a. **Mid Sem- I** 20 marks

Syllabus:

i. Listening Skills
ii. Communication Skills - I

b. **Mid Sem – II** 20 Marks

Syllabus:

i. Communication Skills - II
ii. Life Skills - I

c. **Internal assessment**: 20 marks

i. Seminars: 10 marks
ii. Assignments: 5 marks
iii. Lab record submission: 5 marks

II. Semester End Examination : 40 Marks

a. Listening: 10 Marks
b. JAM or Role plays: 15 Marks
c. *Viva Voce* on any life skills topic : 15 Marks

References:

Flint, Chrisand Jamie Flockhart*Listening: A2 (Collins English for Life: Skills)*Collins. 2013

Brown, Stephen E. English in Everyday Life. McGraw-Hill Education.2008

1 Mohanraj, Jayashree. *Let Us Hear Them Speak: Developing Speaking-Listening Skills in English*.Sage. 2015
2 Susan Earle – Carlin. Q Skills for Success: Listening and Speaking 5: Student Book with Online Practice. Oxford University Press. 2013
3 Kumar, Sanjay and Pushpa Latha. Communication Skills: A Work Book.Oxford University Press. 2018
4 Carnegie, Dale.The Leader in You. Simon & Schuster: 1995
5 Carnegie, Dale.The Art of Public Speaking. Prabhat Prakashan. NewDelhi.2013
6 Kaye, Martin. Goal Setting (Workbook Included): Goals & Motivation: Introduction To A Complete & Proven Step-By-Step Blueprint For Reaching Your Goals (Goal Setting Master Plan 1). Kindle Edition. MK Coaching.2016.
7 West, Steven. Critical Thinking Skills: Practical Strategies for Better Decision making, Problem-Solving *and Goal Setting.* Kindle Edition.2018
8 Tracy, Brain. Goals. Berret-Koehler PublishersInc. San Francisco. 2017
9 Tracy, Brain. Master your Time Master your Life. Penguin Random House Inc. New York. 2017
10 Sean Covey . *The 7 Habits of Highly Effective Teens.* Simon and Schuster,2011

E-Learning Resources:

http://www.bbc.co.uk/worldservice/learningenglish/youmeus/learnit/learnitv39.shtml
https://www.examenglish.com/leveltest/listening_level_test.htm
https://www.oxfordonlineenglish.com/listening?utm_referrer=https%3A%2F%2Fwww.google.co.in%2F
https://takeielts.britishcouncil.org/prepare-test/free-ielts-practice-tests/listening-practice-test-1
https://learnenglish.britishcouncil.org/en/listening
https://www.cambridgeenglish.org/learning-english/activities-for-learners/?skill=listening
https://www.businessenglishsite.com/business-english-listening.html

BOARD DIPLOMA EXAMINATION (C-18)

THIRD SEMESTER 18 COMMON-310P

COMMUNICATION SKILLS AND LIFE SKILLS

MID SEM - I

Time : 1 Hour **Total Marks: 20 Marks**

Part – A **10 marks**

1. Listening Comprehension: 5 X 2 = 10

(Teacher should give the questions before reading the passage given below)

Florence Nightingale was an English social reformer and a statistician, and the founder of modern nursing. She was born in Florence, Italy, on May 12, 1820. Part of a wealthy family, Nightingale defied the expectations of the time and pursued what she saw as her God-given calling of nursing during the Crimean War. She and a team of nurses improved the unsanitary conditions at a British base hospital, greatly reducing the death count. Her writings sparked worldwide health care reform, and in 1860 she established St. Thomas' Hospital and the Nightingale Training School for Nurses. A revered hero of her time, she died on August 13, 1910, in London. Nightingale came to prominence while serving as a manager and trainer of nurses during the Crimean War, in which she organized care for wounded soldiers. She gave nursing a favourable reputation and became an icon of Victorian culture, especially in the persona of "The Lady with the Lamp" making rounds of wounded soldiers at night.

Questions:

1. Who was Florence Nightingale?
2. When and where was she born?
3. What does the passage convey?
4. When did she pass away?
5. Where did she establish nursing school?

PART- B **10 Marks**

Instruction: Answer any one of the questions in 150 words.

2. How do you introduce yourself formally in an interview?

3. Describe your polytechnic.

BOARD DIPLOMA EXAMINATION (C-18)

THIRD SEMESTER 18 COMMON-310P

COMMUNICATION SKILLS AND LIFE SKILLS

MID SEM - II

Time : 1 Hour **Total Marks: 20 Marks**

Part – A **10 marks**

Instruction: Answer any one of the following questions in 150 words.

1. Describe how you have spent your summer vacation.

2. What are the features of good JAM presentation? What precautions do you before speaking for one minute on the given topic?

Part – B **10 marks**

Instruction: Answer any one of the following questions in 150 words.

3. What is positive attitude? Give examples of positive attitude from your life.

4. Mention your long term goal with SMART features. How do you achieve it?

BOARD DIPLOMA EXAMINATION (C-18)
THIRD SEMESTER 18 COMMON-310P
COMMUNICATION SKILLS AND LIFE SKILLS
SEMESTER END EXAM

Time : 3 Hours **Total Marks: 40 Marks**

Part – A **10 marks**

1. Listen to the following passage and answer the questions give below it**. 5 X 2 = 10**

(Teacher should give the questions before reading the passage)

Answer the following questions after teacher reads the following paragraph.

Prof. Jayashankar was born to Mahalaxmi and Laxmi Kantha Rao on 6th August 1934 in Akkampet village, Warangal District. He was a Doctorate in Economics. He worked as a Vice-Chancellor of Kakatiya University. He worked in many capacities. He was popularly known as "Pedda Sir." He inspired many a people to fight for the cause of Telangana Statehood.

At the age of twelve, Jayashankar refused to sing songs in praise of the Nizam and insisted on singing Vande Mataram instead. As an intermediate student, in 1952, he protested against State Reorganization Committee plan to merge with the Andhra Rashtra. He took an active part in the agitations of "Non – Mulki go back" and " Idli Sambar go back." He took an active part in Telangana separate statehood agitation in 1969 too. In 1999, Prof. Jayashankar started the Telangana Development Forum in the USA which helped to propagate the injustice, discrimination and exploitation meted out to Telangana region and people in the aspects of employment, funds and water resources. He relentlessly put his efforts to end the struggle of Telangana people. He passed away on June 21, 2011. He was 76 years old at the time of his death.

Questions:

1. Where was Prof. Jayashankar born?
2. Why didn't he sing songs in praise of the Nizam?
3. Why did Jayashankar start the Telangana Development Forum in USA?
4. What are the two agitations in which he took an active part?
5. What is the meaning of 'relentlessly'?

Part – B **15 marks**

2. JAM / Role Plays

Part – C **15 marks**

3. Viva Voce on Life Skills topics