PLANNED SYLLABUS COVERAGE(Theory)

GPK-F-17

G P Kangra

SYLLABUS COVERAGE

Department: Computer Engg. Subject Internet of Things

Course Diploma Duration 3 years

Total Periods 42 Theory 42

Sr. No.	Period Nos.	Topic	Details	Instruction Reference	Additional Study Recommended	Remarks
1.	1-7	Introduction to IOT	Embedded systems, M2M IOT, Characteristics of IOT, Advantages of IOT, IOT enabling technologies, Smart objects & Smart environments, IOT applications - Home Automation, Smart Cities, Smart Grids, Industrial IOT, Smart farming, IOT framework, IOT challenges.	IOT: Architecture & design Principles by Raj Kamal, MGH.		
2.	8-15	Physical & logical design of IOT	IOT devices - Micro controller unit (MCU), Transducers, Actuators, Hydraulic, Pneumatic, Electrical, thermal, Magnetic & relay actuators, sensors - location, Biometric, Acoustic, Environmental, Motion, Components of IOT - things, Gateway, Cloud, Analytics, User interface, Physical design of CoAP, MQTT, logical design	-do-		

o be approved from concerned HOD within seven days from beginning of semester & will be kept with the concerned teacher his file.

Sr. No.	Period Nos.	Topic	Details	Instruction Reference	Additional Study Recommended	Rem
			of IOT? IOT fundamental blocks, IOT Levels & Deployment templates			
3.	16-23	IOT architecture & Comm. Technologies	One M2M architecture, IOT World Forum (IoTWF) standardized architecture, IOT comm. technologies: ZigBee, BLE, Wifi 802.15.4, RPID, NFC, IOT preprocessing On site & off site processing, Processing offloading			
4.	24-30	IOT Supporting technologies & Applications	Overview of edge computing, Cloud computing study of IOT applications in agriculture, healthcare, Smart homes, Connected vehicles			
5.	31-42	IOT Implementation	Arduino Boards for Arduino UNO, - features, functional blocks, Eg: Blink, Analog pins, arduino IDE sketch: Setup() & Loop() functions, Serial Monitor, Raspberry Pi - features, components, Comparision with UNO, R.P. OS's, IOT COTS devices, & WSN IOT overview			

Extra Topics to be covered beyond the scope of the syllabus (as required by industry/ as recommended by Teacher which he/ she finds necessary)

Sr. No.	Period No.	Topic Covered	Instruction Reference	Additional Study recommended	Remarks

Approved / Not approved	
Date 01/8/25	HOD Sign
Date	Principal Sign

Use additional sheets (if required).

GPK-F-17

PLANNED SYLLABUS COVERAGE(Theory)

G P Kangra

SYLLABUS COVERAGE

Department: Computer Engg. Subject Intro. To E-Governance

Course Diploma Duration 3 years

Total Periods 56 Theory 56

Sr. No.	Period Nos.	Topic	Details	Instruction Reference	Additional Study Recommended	Remarks
1.	1-10		Exposure to emerging trends in ICT for the development, understanding of design & implementation of e-governance projects. e-governance life cycle	Managing IT Transformation (T. Satyanarayana)		
2.	11-20		Need for Govt. Process Re-engineering (GPR), National E-governance plan (NeGP) for India, SMART govt. & thumb rules	e-Govt. The Science of Possible J. satyanarayana)		
3.	21-33		Architecture & models of e-Governance including PPP (Public Private Partnership), Need for Innovation & change management for E-Governance Critical sucess factors, Major issues including Corruption, resistance for change, e-security & Cyber Laws.			
			[Architecture & models of e-Governance, including PPP, Need]			

To be approved from concerned HOD within seven days from beginning of semester & will be kept with the concerned teach in his file.

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Sr. No.	Period Nos.	Topic	Details	Instruction Reference	Additional Study Recommended	Remar
4.	34-46		focusing on Indian initiatives & their impact on citizens sharing case studies to highlight best practices in managing e-Governance projects in Indian context. Visits to local e-governance sites (CSC, eSeva, Post office, Passport Seva kendra etc) as part of tutorials.			
5	47-56.		Mini projects by students in groups – primarily evaluation of various e-governance projects.			

Extra Topics to be covered beyond the scope of the syllabus (as required by industry/ as recommended by Teacher which he/ she finds necessary)

Sr. No.	Period No.	Topic Covered	Instruction Reference	Additional Study recommended	Remarks
		NIL		-	

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Date 01/8/25	HOD Sign
Date	Principal Sign

additional sheets (if required).

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GPK-F-17

PLANNED SYLLABUS COVERAGE(Theory)

Department: Computer Engg Subject OOP Using Java

Course Program Elective-III Duration 6 month

Total Periods 42 56 Theory 42

Period Nos.	Topic	Details	Instruction Reference	Additional Study Recommended	Remarks
-8	OOP Concepts & Java Prog. Overview	→ Procedure vs object oriented Prog. → Advantage of OOP, Concept of OOP → Characteristics of OOP → History of Java, feature → Java Prog. Terminology - JVM, JRE, JDK, JVS, WORA Java Compiler, Java Interpreter Source code, byte code coding Conventions.			
-16	Fundamentals of Java Prog.	→ Structure of Java Program → Comments → main(), Java tokens, Statements → Variables, scope & lifetime → Data types, literals, Console based I/O using Sys.in & out. → operators, precedence & associativity.			
-24	Control Statements	→ if, if-else, if-else if ladder → Switch-case, → while, do-while, for loop → for each loop. Jump statements			
-32	Object Oriented Programming in Java	→ Class, Instance, methods, Object, Constructor, Static → member, final variables/methods, final class, garbage collection, finalize method, Packages → Access modifier, Wrapper Class → Compile vs Run time Polymorphism → method overloading, → Inheritance, method overriding → abstract method, class → Multiple Inheritance using Interface			

ved from concerned HOD within seven days from beginning of semester & will be kept with the concerned teacher

Period Nos.	Topic	Details	Instruction Reference	Additional Study Recommended	Remarks
5. 33-42	Array, String & Exception Handling	→ Array definition → one dimensional Array → multidimensional Array → String, literals, escape sequences, string methods → Concept of exceptions Checked / Unchecked Exp. → Exception Handling → try & catch & finally blocks, Using multiple catch statements, User-defined exceptions throw & throws			

Extra Topics to be covered beyond the scope of the syllabus (as required by industry/ as recommended by Teacher which he/ she finds necessary)

Period No.	Topic Covered	Instruction Reference	Additional Study recommended	Remarks
	NIL			

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Date 01/08/25	HOD Sign
Date	Principal Sign

additional sheets (if required).

GPK-F-18

G P Kangra

Practical Planning & Coverage Status

Department: Computer Engg.
Course: Program Elective

Laboratory:
Subject: OOP using Java

Sr. No.	Details of Practical	Availability of Equipment Set up	Availability of STD Ref. Write up	Likely Turn/Date (G1) (G2)	Actual Date	Responsibility	HOD Sign.	Remarks
1.	To install & Configure JDK on Windows/Linux. To display simple message like hello Java.	Latest Computer System with Window / Linux OS.		08/08 13/08 07/08				
2.	To demonstrate the use of various operators.			19/08 20/08 17/08				
3.	To demonstrate the use of diff. Control statements.			26/08 03/09 21/08				
4.	To define class & its objects. To demon. use of Constructor & finalize method. to Create Packages.			01/09 10/09 28/08				
5.	To inherit classes from existing class & use of diff. access modifiers			09/09 17/09 04/09				
6.	To demonst. method overloading & overriding.			16/09 24/09 11/09				
7.	To demonst. use of Abstract. method, classes & multiple inheritance using Interfaces.			23/09 01/10 18/09				
8.	To demost. the use of arrays & various string functions & Exception Handling mechanism			03/10 08/10 25/09				

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HOD Sign with date

Principal Signature with date

GPK-F-17

PLANNED SYLLABUS COVERAGE(Theory)

P angra

Department: Comp. Engg. Subject Introduction to IT Systems

Course Program Core Duration

YLLABUS OVERAGE

Total Periods 28 Theory 28

	Period Nos.	Topic	Details	Instruction Reference	Additional Study Recommended	Remarks
1.	1-5	Basics of Computer System	→ Block diagram of Comp System → H/w Components:- -CPU, memory CRT, LCD Monitors, Keyboard, Mouse HDD.			
2	6-10	Software Concepts	→ Software & its types → Operating System, types & function of OS → Booting (Cold & warm)			
3.	11-15	Internet Skills	→ Internet, Web browser, → Search Engine, WWW → Types of Networks → Govt Portals (state & national) → Institute Portals.			
	16-20	Working with MS-word	→ File Management (Create, Save, Print, Edit. a document. → Use of HOME, INSERT, Design Layout Ribbon.			

roved from concerned HOD within seven days from beginning of semester & will be kept with the concerned teacher

	Period Nos.	Topic	Details	Instruction Reference	Additional Study Recommended	Remarks
5.	21-25	Working with MS-Excel	→ Spreadsheets, Entering data into cell → Merging a cell, formulation → Simple functions:- sum, average, min, max Percentage, round, floor ceiling, Conditional Formatting of cells.			
6.	26-28	Information Security.	→ Concept of Online Frauds, Threats of Online Crime → Virus Attacks → Use of Antivirus.			

Extra Topics to be covered beyond the scope of the syllabus (as required by industry/ as recommended by Teacher which he/ she finds necessary)

Period No.	Topic Covered	Instruction Reference	Additional Study recommended	Remarks
	NIL			

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Date 01/08/25	Principal Sign

additional sheets (if required).

GPK-F-17

PLANNED SYLLABUS COVERAGE(Theory)

G P Kangra	Department: Computer Engg Subject OE-I				
	Course Diploma Duration 6 Months-				
SYLLABUS COVERAGE	Total Periods 56 Theory 56(T)				

Sr. No.	Period Nos.	Topic	Details	Instruction Reference	Additional Study Recommended	Remarks
1		Unit-1: Cyber Ethics & Etiquettes	History of Internet Major Applications of the Internet- Email, www, Social Media, Online Payment, Online Gaming Digital Footprints Cyber world, Digital Society & Netizen, Net Etiquettes, Cyber Ethics; Impact of the Internet on Society, Impact of Digital Technologies on Health. Government Guidelines & Digital Media Ethics Code.	Cyber laws & Ethics by Mark Grabowski	https// www. w3schools com.	
2		Unit-2: Basics of Cybersecurity.	Need for Cyber-security, Challenges in Cybersecurity; Cybersecurity Framework. Cybercrime Hacking, Phishing, Fraud Emails, Identity			

To be approved from concerned HOD within seven days from beginning of semester & will be kept with the concerned teacher in his file.

Sr. No.	Period Nos.	Topic	Details	Instruction Reference	Additional Study Recommended	Remarks
3		Unit-3: IPR.	Theft, Ransomware, Cyber Stalking/Harassment, Cyberbullying, Pornography, Cyber Terrorism, Cyber Defamation, Combatting & Prevention from Cybercrime using self-regulation; National Cyber Security Strategy. Data Protection, Right to Privacy	do-		

Extra Topics to be covered beyond the scope of the syllabus (as required by industry/ as recommended by Teacher which he/ she finds necessary)

Sr. No.	Period No.	Topic Covered[1]	Instruction Reference	Additional Study recommended	Remarks

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Date	Principal Sign

Use additional sheets (if required).

PLANNED SYLLABUS COVERAGE(Theory)

G P Kangra	Department: Computer Engg Subject OE-I				
	Course Diploma Duration 6 Months				
SYLLABUS COVERAGE	Total Periods 56 Theory 56(T)				
Sr. No.	Period Nos.	Topic	Details	Instruction Reference	Additional Study Recommended	Remarks
			& Data Protection, Intellectual Property Right (IPR), Copy-right, Patent, Trade-mark, Scopes of Copyrights, Patents & Trademark, Violation of IPR, Plagiarism, Copyright Infringement Trademark Infringe-ment.	Cyber laws & Ethics by Mark Grabow-ski	https// www.-cs3schools.com.
4.		Unit-4: Cyber Laws in India	Major Provisions for Cybercrime under Indian Penal Code (IPC), Indian IT Act -2000 (Sections 65, 66, 67, 69); Digital Personal Data Protection Act 2023, Intellectual Property Rights, Patent law, Copyright			

To be approved from concerned HOD within seven days from beginning of semester & will be kept with the concerned teacher in his file.

Sr. No.	Period Nos.	Topic	Details	Instruction Reference	Additional Study Recommended	Remarks
			Law, Digital signatures.	-do-		

Extra Topics to be covered beyond the scope of the syllabus (as required by industry/ as recommended by Teacher which he/ she finds necessary)

Sr. No.	Period No.	Topic Covered	Instruction Reference	Additional Study recommended	Remarks

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Date 01/05/25	HOD Sign
Date	Principal Sign

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GPK-F-17

PLANNED SYLLABUS COVERAGE(Theory)

G P Kangra	Department: Computer Engg. Subject SOFTWARE ENGG.				
	Course Diploma Duration 3 years				
SYLLABUS COVERAGE	Total Periods 04/week Theory 56				

Sr. No.	Period Nos.	Topic	Details	Instruction Reference	Additional Study Recommended	Remarks
1	1-8	Unit-1 (Intro. to S/w Engg.)	S/w Definition, S/w char., S/w Crisis, Attributes of good s/w, Prog. vs product, Exploratory style of s/w dev, Shortcomings, S/w engg., SDLC, S/w process framework, framework activities- Comm, planning, Modeling, Construction & deployment, S/w appln domains System s/w, Appln s/w, Scientific Engg s/w, embedded s/w, web Applications-	S/w Engg. by Pankaj Jalote, Narosa Publication.	Fundamentals of S/w Engg, by Rajib Mall PHI.	
2	9-20	Unit-2 (S/w life Cycle Models)	Classical Models- Waterfall Model, Iterative Waterfall Model, V-model, Prototyping Model, Incremental Model, Evolutionary Model, Rapid appln dev. (RAD) Agile dev. Models- Extreme programming, Scrum, Lean, Spiral Model	— do —		
3	21-29	Unit-3 (S/w Project Mgmt.)	S/w Project Manager- Skills & responsibilities, project planning Sliding window planning, SPMP project planning, Project size Estimation- lines of code, fun Pt, Project estimation Techniques- empirical, Heuristic & Analytical Estimation Techniques, Expert Judgement, COCOMO, COCOMO2, Project scheduling- PERT & GANTT charts, Staffing, Risk Mgmt, S/w Conf. Mgmt.	— do —		

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Sr. No.	Period Nos.	Topic	Details	Instruction Reference	Additional Study Recommended	Remarks
4	30-38	Unit-4 (Req^n Analysis & Specification)	Req^n gathering, Req^n Elicitation Tech, Interviews, surveys, Questionnaire Brainstorming, Req^n analysis, S/w req^n spec. (SRS), Role, Char., Feasibility Study, Review of req^n, Traceability	— do —		
5	39-47	Unit-5 (S/w design)	Overview of design process, Outcome of design process, abstraction, design patterns, Refactoring, Classification of design Methodologies, Cohesion & Coupling, S/w design Approaches - function oriented object oriented, User Interface design, User Exp.	— do —		
6	48-56	Unit-6 (Coding & Testing)	S/w coding, Coding Standards, Code review - code walkthrough, Code inspection S/w documentation, Internal & External doc, S/w Testing, Testing activities, Unit Integration, Sys & Acceptance testing, Black box & White box testing.	— do —		

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Sr. No.	Period No.	Topic Covered	Instruction Reference	Additional Study recommended	Remarks

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