

Lesson Plan 2025-26 (Odd Semester)

Ramesh Kumar – Associate Professor (Computer Science)

Class : M Sc (Computer Science) – 3rd Sem

Paper : Principles of Programming Lang.

Sr No	Week (Year 2025)	Topic to be covered
1	July 22-31 July	Preliminaries: History
2	Aug 1 – 7 Aug	Impact of Programming Paradigms, Role of Programming Languages, Good Language
3	8 Aug – 16 Aug	, Effects of Programming Environment, Translators and virtual architectures, Binding and Binding time,
4	Aug 17 - 24	Language Syntax, Analysis of Program, Synthesis of Object program,
5	Aug 25 – Sept 2	Formal translation models: BNF Grammars, General parsing, Language translation, Recursive descent parsing.
6	Sept 4 - 9	Formal languages and automata: The Chomsky hierarchy of formal languages, regular grammars,
7	Sept 11 - 16	Regular expressions, Finite State Automata, Context-free grammars, Pushdown automata,
8	Sept 18- 24	Ambiguous grammars. Language Semantics: Attribute grammars, Denotational semantics, Program verification and validation,
9	Sept 25 – 1 Oct	Data objects, variables, constants, data types, declaration, type checking, type casting, type promotion, Enumerators, Composite data types.
10	Oct 3 – 9 Oct	Object Orientated concepts: Structured data types, Abstract data types, Information hiding, Subprogram concepts,
11	10 Oct – 16 Oct	Good program design, Type definitions, Type equivalence, Inheritance Derived classes, Abstract classes, Polymorphism, Inheritance and software reuse.
12	25 Oct – 2 Nov	Sequence control: Implicit and explicit sequence control, Sequence control within arithmetic expressions, sequence control between statements, sequencing with non-arithmetic expressions,

		Subprogram Sequence control.
13	3 Nov – 9 Nov	Miscellaneous topics: Parameter passing techniques, Static & Dynamic Scoping, Storage of variables, Static storage, Heap Storage management, Distributed Processing
14	10 Nov – 16 Nov	, Exceptions and Exception handlers, Co-routines, Scheduled subprograms, Parallel programming, Processor design, Hardware and Software architectures, Network Programming, Evolution of scripting languages, Applets, XML.
15	Nov 17 – 24 Nov	Revision and Test

Sr No	Week (Year 2025)	Topic to be covered
1	July 22-31 July	Introduction: Mobile Applications, Characteristics and Benefits, Application Models, Mobile devices Profiles. Basics of Android, Importance and scope, Android Versions, Features of Android, Android Architecture
2	Aug 1 – 7 Aug	, Android Stack, Android Applications Structure, Android Emulator, Android SDK, Overview of Android Studio, Android and File Structure, Android Virtual Device Manager, DDMS, LogCat, Understanding Activities.
3	8 Aug – 16 Aug	Android User Interface: Measurements – Device and pixel density independent measuring units. Layouts – Linear, Relative, Grid and Table Layouts.
4	Aug 17 - 24	User Interface (UI) Components – Editable and non-editable Text Views, Buttons, Radio and Toggle Buttons, Checkboxes, Spinners, Dialog and pickers, List View, Spinner View.
5	Aug 25 – Sept 2	Event Handling – Handling clicks or changes of various UI components. Intents and Broadcasts: Intent – Using intents to launch Activities, Explicitly starting new Activity,
6	Sept 4 - 9	Implicit Intents, Passing data to Intents, Getting results from Activities, Native Actions, using Intent to dial a number or to send SMS
7	Sept 11 - 16	Services- Callbacks and Override in application, Application Signing, API keys for Google Maps,
8	Sept 18- 24	Publishing application to the Android Market.
9	Sept 25 – 1 Oct	Fragments – Creating fragments, Lifecycle of fragments, Fragment states, Adding fragments to Activity, adding, removing and replacing fragments with fragment transactions,
10	Oct 3 – 9 Oct	interfacing between fragments and Activities, Multi-screen Activities
11	10 Oct – 16 Oct	Location and Mapping: location based services, Mapping, Google Maps activity, Working with MapView and MapActivity; Playing and Recording of Audio and Video in application;

12	25 Oct – 2 Nov	Sensors and Near Field Communication; Native libraries and headers, Building client server applications.
13	3 Nov – 9 Nov	Using Graphics: Canvas Drawing, Shadows, and Gradients. Persisting Data to files: Saving to Internal Storage, Saving to External Storage
14	10 Nov – 16 Nov	Introduction to SQLite database: creating and opening a database, creating tables, inserting retrieving and deleting data, Registering Content Providers, Using content Providers (insert, delete, retrieve and update)
15	Nov 17 – 24 Nov	Revision and Test