



St. JOHN'S COLLEGE OF ARTS & SCIENCE

(Accredited with B++ by NAAC & Approved by UGC under section 2(f) & 12(B) status)

(Affiliated to Manonmaniam Sundaranar University, Tirunelveli)

(A Christian Minority Institution)

**St. John's College Road, Ammandivilai, Kanyakumari District - 629 204,
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DEPARTMENT OF COMPUTER SCIENCE - BSC ELECTIVE PAPERS

	IV	31	Non-Major Elective	1. HTML 2. Programming in C	2	2	0	0	2
		32	Common	Computers for Digital Era *	2	2	0	0	2
	V	33	Extension Activity	NCC, NSS, YRC, YWF	0	0	0	0	1
		Subtotal (Excluding Computer for Digital Era)			30	25	0	5	28
V	III	34	Core-5	Relational Database Management Systems	5	5	0	0	4
	III	35	Core-6	Data Communication and Computer networks	4	4	0	0	4
	III	36	Core-7	PHP and mySQL	4	4	0	0	4
	III	37	Major Practical - V	PHP	4	0	0	4	2
	III	38	Major Practicals VI	Machine Learning lab	4	0	0	4	2
	III	39	Major practicals - VII	Green Foot Lab	3	0	0	3	2
	III	40	Major Elective – I (Anyone)	1. Mobile application Development 2. Introduction to Security in Computing 3. Cloud Computing	4	4	0	0	4
	III	41	Skill Based Common	Personality Development/ Effective Communication/ Youth Development	2	2	0	*	2
	Subtotal				30	19	0	11	24
VI	III	42	Core-8	Operating System	4	4	0	0	4
	III	43	Core-9	Software Engineering and Testing	4	4	0	0	4
	III	44	Core-10	Computer Graphics and Visualization	4	3	1	0	4
	III	45	Major Practical - VIII	Computer Graphics Lab	4	0	0	4	2

	III	46	Major Practical IX	My SQL Lab	4	0	0	4	2
	III	47	Major Elective II	1. Internet of Things (IoT) 2. Introduction to Digital Image Processing 3. Neural Networks	4	4	0	0	4
	III	48	Project	Digital Image Processing using SciLab	6	0	0	6	6
	Subtotal				30	15	1	14	26
	Total credits (including Yoga & Computers for Digital Era)								150

L-Lecture T-Tutorial P-Practical

Distribution of marks between External and Internal Assessment is

For Theory , External -75 , Internal- 25

For Practical External -50 , Internal- 50

Internal Marks for Practical shall be allotted in the following manner

Continuous Assessment: 25 marks "N" number of practical's being conducted based on the practical prescribed in the syllabus and the marks should be distributed equally for each practical.

Calculation of marks: Sum of marks awarded to number of practicals + the average marks of two tests (25 marks)

Total-50 marks

Internal Test: 20 marks . Three tests should be conducted and the average of best two tests be taken for 20 marks. Assignment – 5 marks

Passing minimum 40 out of 100

Program Educational Objectives(PEO's)

The B.Sc Computer Science Program will enable the student to

PEO1: Provide with the educational experiences that will enable them to cope with the rapidly changing subject of computer science

PEO2: Provide with up - to - date training in the discipline so as to prepare them to take on entry level positions in the local Information Technology sector , (with the exception of hardware engineer and technician) and to grow into other positions with one or two years working experience

PEO3 : Provide with a sufficiently broad range of courses to enable them to be successful in

LOCF MAPPING

Course code and title : GREEN FOOT LAB											
CO/PO	PO					PSO					
	1	2	3	4	5	1	2	3	4	5	% of co's
CO1	3	2	2	2	2	2	3	2	2	2	2.2
CO2	2	3	2	3	3	2	3	2	3	3	2.6
CO3	2	2	3	3	3	2	2	3	3	3	2.6
CO4	2	3	2	3	2	2	2	3	3	3	2.5
CO5	2	3	3	3	3	2	2	2	3	3	2.6
Average of CO's = 2.5(high)											
Strongly correlated -3 Moderately correlated -2 weakly correlated-1 No correlation -0											

**MSU/ 2021-22 / UG-Colleges /Part-III (B.Sc. Computer Science) / Semester –
V/Major Elective- I**

**LTPC
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MOBILE APPLICATION DEVELOPMENT**Objective:**

CO1: To recall the basics, field of computing sciences and Multidiciplinary of Mobile Applications

CO2: To build interactive applications

CO3: To develop multiple activities and indent in mobile applications

CO4: To understand Fragments of mobile application development

CO5: To develop mobile application development using Sqlite Database

Unit-I:

12 Hours

Getting Started: Diving in - Welcome to Android ville - The Android platform -
Install Android Studio - How to build the app - Activities and layouts - first Android

more to an activity's life than create and destroy - The updated StopwatchActivity code - when the app is run - when an app is only partially visible - The activity lifecycle: the foreground lifetime - Stop the stopwatch if the activity's paused - Implement the onPause() and onResume() methods - The complete StopwatchActivity code - Your handy guide to the lifecycle methods.

UNIT-III:

12 Hours

Views and View Groups: Enjoy the view - Your user interface is made up of layouts and GUI components - LinearLayout displays - Add a dimension resource file - Using margins - change a basic linear layout - adding weight to a view - Values you can use with the android:gravity attribute - The full linear layout code - Frame layouts stack their views - Add an image to your project - The full code to nest a layout - FrameLayout: a summary - Playing with views - Editable text view - Toggle button - Switch - Checkboxes - Radio buttons - Spinner - Image view - Adding images to buttons - Scroll views - Toasts.

Constraint Layouts: Put things in their place - Nested layouts can be inefficient - the Constraint Layout the Constraint Layout Library - Add the String resources to strings.xml - Use the blueprint tool - Position views using constraints - Add a vertical constraint - Changes to the blueprint are reflected in the XML - center views - Adjust a view's position by updating its bias - change a view's size - align views - build a real layout.

UNIT-IV:

12 Hours

List views and Adapters: Getting organized - Every app starts with ideas - Use list views to navigate to data - The drink detail activity - The Starbuzz app structure - The Drink class - The top-level layout contains an image and a list - The full top-level layout code - Get list views to respond to clicks with a

listener - Set the listener to the list view - A category activity displays the data for a single category - Update activity_drink_category.xml - For nonstatic data, use an adapter - Connect list views to arrays with an array adapter - Add the array adapter to DrinkCategoryActivity - App review - How clicks are handled in TopLevelActivity - The full DrinkCategoryActivity code - Update the views with the data - The DrinkActivity code - when the app is run.

Fragments: Make it modular - Your app needs to look great on ALL devices -

Your app may need to behave differently too - Fragments allow you to reuse code - The phone version of the app - Create the project and activities - Add a button to MainActivity's layout - How to add a fragment to your project - The fragment's onCreateView() method - Add a fragment to an activity's layout - Get the fragment and activity to interact - The Workout class - Pass the workout ID to the fragment - Get the activity to set the workout ID - The fragment lifecycle - Set the view's values in the fragment's onStart() method - How to create a list fragment - The updated WorkoutListFragment code - The code for activity_main.xml - Connect the list to the detail - The code for WorkoutListFragment.java - MainActivity needs to implement the interface - DetailActivity needs to pass the ID to WorkoutDetailFragment.

UNIT-V:

12 Hours

SQLite Databases: Fire up the database - Back to Starbuzz - Android uses SQLite databases to persist data - SQLite classes - The current Starbuzz app structure - change the app to use a database - The SQLite helper manages database - Create the SQLite helper - Inside a SQLite database - create tables using Structured Query Language (SQL) - Insert data using the insert() method - Insert multiple records - The StarbuzzDatabaseHelper code - What the SQLite helper code does - What if changes to the database is needed? - SQLite databases have a version number - when the version number is changed - Upgrade your database with onUpgrade() - Downgrade your database with onDowngrade() - upgrade the database - Upgrade an existing database - Update records with the update() method - Apply conditions to multiple columns - Change the database structure - Delete tables by dropping them - The full SQLite helper code.

Basic cursors: Getting data out - The new Starbuzz app structure - change DrinkActivity to use the Starbuzz database - The current DrinkActivity code - Get a reference to the database - Get data from the database with a cursor - Return all the records from a table - Return records in a particular order - Return selected records - The DrinkActivity code so far - To read a record from a cursor, you first need to navigate to it - Navigate cursors - Get cursor values - The DrinkActivity code - The current

DrinkCategoryActivity code - Get a reference to the Starbuzz database - replace the

1. INTERNET OF THINGS

LTPC
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COURSE OUTCOMES

On Successful completion of the course, the student will be able to

- CO1: To define the fundamentals of IOT
- CO2: To outline about IOT working
- CO3: To discuss the Architecture of IOT
- CO4: To outline how IOT is used in Education and Agricultural level
- CO5 : To explain security in IOT

UNIT I:

12 Hours

Fundamentals of Internet of Things: Introduction – Characteristics of IoT – The Physical Design of IoT – Iot Architecture an Components – Logical design of IoT – Communication Models – IoT Communication API – IoT Architecture and Protocols – Introduction –Fog based Architecture of IoT – Near Field Communication – Wireless Sensor Networks – IoT Network protocol stack – IoT technology stack – Blue tooth – Zig Bee – and 6LowPAN.

UNITII:

12 Hours

Programming Framework for IoT: Interoperability – Programming Paradigm – Assembly – Introduction to Arduino Programming – Introduction to Python Programming – Introduction to Raspberry Pi . Virtualization: Introduction – Types – Virtualization and IoT – Embedded Virtualization.

UNIT III:

12 Hours

IoT Application Area: Introduction – Homes – Health care – Agriculture – Military applications – Politics – Constructions – Other application areas . Cloud an IoT : Introduction – Cloud – IoT – Difference between cloud and IoT – Cloud IoT architecture –challenges.

UNIT IV:

12 Hours

Smart City using IoT: Introduction – Concept – The emergence – Dimensions and Components – Design strategies – Factors affecting automation – IoT applications in smart cities – Education – E- governance – Industry . IoT Use Cases: Industrial IoT

Use Case – IoT and smart energy – Smart transportation – Smart health – Smart home – Smart Education system – Governance use case – Smart cities.

UNIT V:

12 Hours

Network Security for IoT and M2M communications: Introduction – Network Technologies for IoT and M2M – Security for IoT and M2M Technologies – Securities in IETF M2M network Technologies – Security in ETSI M2M Network Technologies – Other M2M standard Efforts.

Text Books:

1. Internet of Things – Principles, Paradigms and Applications of IoT by Dr.Kamlesh Lakhwani, Dr.Hemant Kumar Gianey, Joseph Kofi Wireko, Kamal Kant Hiran (BPP publication First Edition 2020)
2. Internet of Things(IoT) Systems and Applications By Jamil Y . Khan & Mehmet R.Yuce Jenny Stanford Publishing.

Reference Book

- 1.Jan Holler, Vlasios Tsiatsis, Catherine Mulligan, Stefan Avesand, Stamatis Karnouskos, David Boyle, “From Machine-to-Machine to the Internet of Things: Introduction to a New Age of Intelligence”, 1st Edition, Academic Press, 2014

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Course code and title : . INTERNET OF THINGS												
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CO3	2	3	3	2	2	2	3	3	2	2	2.4	
CO4	2	2	2	3	3	2	2	3	3	3	2.5	
CO5	2	2	3	3	3	2	2	3	3	2	2.5	
Average of CO's = 2.48(high)												

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DECLARATION

I hereby declare that the details and information given above are complete and true to the best of my knowledge and belief.


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