

# Government College for Women (Autonomous), Mandya.

## Department of Computer Science

Academic Year-2020-21

(Revised CBCS Scheme 2018-19 Onwards)

B.Sc. (Physics, Mathematics, Computer Science)

### Criterion –II- Teaching - Learning and Evaluation

#### 2.6 Teaching – Learning Process

##### 2.6. Student Performance and Learning Outcomes

2.6.1 Programme outcomes, programme Specific outcomes and Course outcomes for all programs offered by the institution are stated and displayed in website of the institution (to provide web link)

#### **Programme Outcomes(POs): PMCs**

The B.Sc. PMCs programme enables students to:

1. Demonstrate an understanding of core theories and principles of Physics, Mathematics, and Computer Science.
2. Understand the interrelations between the different subjects and develop the ability to identify the links.
3. Develop skills necessary to plan, design and conduct experiments to test, demonstrate, verify, and extend theoretical knowledge reliably and safely.
4. Be acquainted with the contemporary issues, latest trends in technological development and thereby innovate new ideas and solutions to existing problems.
5. Acquire ability to face competitive exams for higher study in a chosen subject and procedural knowledge required for professional engagement in industry, teaching, research, or other service.
6. Contribute to the knowledge base of Science by being innovative having been exposed to the recent developments in the field of science. Exhibit a scientific temperament.
7. Engage in current discussions of advanced topics in Physical and Applied Sciences. Apply standard Software Engineering practices and strategies in software project development using open-source programming environment to deliver a quality product for the society.

#### **PROGRAMME OUTCOMES:COMPUTER SCIENCE**

Semester	Subject/ QP Code	Title of Paper	Learning Objectives	Program Outcome
I Sem	A0260 / 17126	DSC-3 A: Computer Concepts and C Programming	<ul style="list-style-type: none"><li>• It aims in providing exposure to problem-solving through programming.</li><li>• It aims to train the student</li></ul>	<ul style="list-style-type: none"><li>• Identify situations where computational methods and computers would be useful.</li><li>• Students are capable to understand programming</li></ul>

			<p>to the basic concepts of the C-programming language.</p> <ul style="list-style-type: none"> <li>• This is an introductory course and covers the key features of the C language and its usage.</li> <li>• It helps in thoroughly understanding the C syntax.</li> <li>• This course involves a lab component which is designed to give the student hands-on experience with the concepts.</li> </ul>	<p>tasks using techniques like algorithm and flowchart writing.</p> <ul style="list-style-type: none"> <li>• Students are capable to choosing the right data representation formats based on the requirements of the problem.</li> <li>• Students are ready to understand the problem and write the C program on a computer, edit, compile, debug, correct, recompile and run it.</li> </ul>
II Sem	B0260 / 17226	DSC-3 B : Data Structures and File Processing	<ul style="list-style-type: none"> <li>• This course provide the knowledge of basic concepts of data structures and their implementations.</li> <li>• Students will understand the importance of data structures in context of writing efficient programs.</li> <li>• It develops skills to apply appropriate data structures in problem solving.</li> <li>• To understand concepts about searching and sorting techniques</li> <li>• To Understand basic concepts about stacks, queues, lists, trees and graphs</li> <li>• To understanding about writing algorithms and step by step approach in solving problems with the help of fundamental data structures</li> </ul>	<ul style="list-style-type: none"> <li>• Students learn the basic types of data structure, implementation and application.</li> <li>• Students understand the strength and weakness of different data structures.</li> <li>• Use the appropriate data structure in context of solution of given problem.</li> <li>• Develop programming skills which require to solve given problem.</li> <li>• Ability to analyse algorithms and algorithm correctness.</li> <li>• Ability to summarize searching and sorting techniques</li> <li>• Ability to describe stack, queue and linked list operation.</li> <li>• Ability to have knowledge of tree and graphs concepts.</li> </ul>
III Sem	C0260 / 17326	DSC-3 C: Object Oriented Programming Using Java	<ul style="list-style-type: none"> <li>• This course provide the knowledge about basic Java language syntax and semantics to write Java</li> </ul>	<ul style="list-style-type: none"> <li>• Students learn to Identify classes, objects, members of a class and relationships among them needed for a</li> </ul>

			<p>programs and use concepts such as variables, conditional and iterative execution methods etc.</p> <ul style="list-style-type: none"> <li>• Understand the fundamentals of object-oriented programming in Java, including defining classes, objects, invoking methods etc and exception handling mechanisms.</li> <li>• Understand the principles of inheritance, packages and interfaces.</li> </ul>	<p>specific problem.</p> <ul style="list-style-type: none"> <li>• Students learn to write Java application programs using OOP principles and proper program structuring.</li> <li>• Demonstrate the concepts of polymorphism and inheritance.</li> <li>• Write Java programs to implement error handling techniques using exception handling.</li> </ul>
IV Sem	D0260 / 17426	DSC-3 D: Database Management Systems	<ul style="list-style-type: none"> <li>• This course introduction database management systems, with an emphasis on how to organize, maintain and retrieve - efficiently, and effectively - information from a DBMS.</li> <li>• This course provide concepts of ER-models and Normalization forms need to use while designing database.</li> <li>• In this course introduce the MS-Access and SQL software for designing DB and writing queries.</li> </ul>	<ul style="list-style-type: none"> <li>• Students are capable to describe the fundamental elements of relational database management systems.</li> <li>• Explain the basic concepts of relational data model, entity-relationship model, relational database design, relational algebra and SQL.</li> <li>• Students are capable to design ER-models to represent simple database application scenarios</li> <li>• Convert the ER-model to relational tables, populate relational database and formulate SQL queries on data. Improve the database design by normalization.</li> <li>• Students get familiar with basic database storage structures and access techniques: file and page organizations, indexing methods including B tree, and hashing.</li> </ul>
V Sem	E0270 / 17527	DSE-1: Data Communication and Computer Networks	<ul style="list-style-type: none"> <li>• This course describe the general principles of data communication.</li> <li>• It describe how computer networks are organized with the concept of layered</li> </ul>	<ul style="list-style-type: none"> <li>• Students understand basic computer network technology.</li> <li>• Students Understand and explain Data</li> </ul>

			<p>approach.</p> <ul style="list-style-type: none"> <li>• It explain the concepts and functions of OSI and TCP/IP model.</li> <li>• Describe how signals are used to transfer data between nodes.</li> <li>• Describe how packets in the Internet are delivered.</li> <li>• Analyze the contents in a given data link layer packet, based on the layer concept.</li> <li>• Design logical sub-address blocks with a given address block.</li> <li>• Decide routing entries given a simple example of network topology</li> <li>• Describe how routing protocols work.</li> </ul>	<p>Communications System and its components.</p> <ul style="list-style-type: none"> <li>• Identify the different types of network topologies and protocols.</li> <li>• Enumerate the layers of the OSI model and TCP/IP. Students are capable in explaining the function(s) of each layer.</li> <li>• Identify the different types of network devices and their functions within a network</li> <li>• Students understand the concepts of Analog-to-Digital and Digital-to-Analog Conversions and its techniques applied in conversions.</li> <li>• Students understand the concepts and techniques of guided and unguided Medias used in networking.</li> </ul>
	E0280 / 17528	Software Engineering		
	E0290 / 17529	Analysis Algorithm & Data Structure		
	E5160 / 17556	SEC-1: Cyber Security		
VI Sem		DSE-2:		
		SEC-2:		

**Skill Oriented Course**

SEC-1 :: DTP (Page Maker and CorelDraw)	(L;T:P::1:0:1)
SEC-2 :: Cyber Security	(L;T:P::1:0:1)
SEC-3 :: Accounting Software (Tally)	(L;T:P::1:0:1)
SEC-4 :: Android Programming	(L;T:P::1:0:1)

