DHRUBA CHAND HALDER COLLEGE

(FORMERLY DAKSHIN BARASAT COLLEGE)

ESTD. - 1965

A NAAC Accredited Degree College Affiliated to University of Calcutta

P.O. - Dakshin Barasat ● Dist. - South 24 Parganas ● West Bengal ● Pin - 743372

E-mail: dchcollege@yahoo.com, Website: www.dchcollege.org

Phone: (03218) - 222550 (Prin.) / 223-668 (Off.)

Ref. No. ....

Date 20

DEPARTMENT OF COMPUTER SCIENCE (UG)

Name of the Programme: B.Sc. in Computer Science (General) (Under CBCS)

PROGRAMME OUTCOMES (PO)

PO 1: Acquiring the thorough knowledge of Hardware including gate level digital electronics portion and also knowledge of software including programming languages concept.
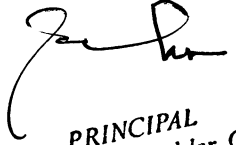
PO 2: Demonstrate the aptitude of Computer based problem-solving skill through system analysis and design.

PO 3: Developing the knowledge of appropriate theory, practical and digital tools of UG level Computer Science.

PO 4: Ability to link knowledge of Computer Science along with other chosen auxiliary disciplines of study like Mathematics and Modern Physics of UG level

PO 5: Ability to formulate, model, design solutions, procedure and to use software tools based on world modern technology based problems and evaluation.

PO 6: Ability to appreciate emerging technologies and tools.

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COURSE OUTCOMES (CO)

A. CORE COURSES (6 credits per week)

Semester-1:

CMSG-CC-1-Th (Computer Fundamentals and Digital Logic Design)

➢ **CO1:** To familiarize students about the basic fundamental design and building blocks ofcomputer system.
➢ **CO2:** Learn the Boolean logic and circuit design.
➢ **CO3:** Learn about different Combinational and Sequential Logic circuits and theirfunctionalities.

CMSG-CC-1-Pr (Word Processing, Spreadsheet, Presentation and Web Design by HTML)

➢ **CO1:** To familiarize Student about the office package (Word, Excel, and PowerPoint Presentation) in open source environment.
➢ **CO2:** Learn the webpage design using HTML

Semester -2:

CMSG-CC-2-Th (Algorithm and Data Structure)

➢ **CO1:** To be familiar with fundamental data structures and with the manner in which these datastructures can best be implemented; become accustomed to the description of algorithms in both functional and procedural styles
➢ **CO2:** Ability to choose a data structure to suitably model any data used in computer applications.

CMSG-CC-2-Pr (Programming with C)

➢ **CO1:** learn about syntax and semantics of C programming language
➢ **CO2:** Learn about the strategies of writing efficient and well-structured computer programs.
➢ **CO3:** Develop the skills for formulating iterative solutions to a problem.

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Semester-3:

CMSG-CC- 3-Th (Computer Organization)

➢ **CO1:** To familiarize the students with arithmetic and logic unit as well as the concept of the concept of pipelining.
➢ **CO2:** To familiarize the students with hierarchical memory system including cache memories and virtual memory.
➢ **CO3:** To make students know the different ways of communicating with I/O devices andstandard I/O interfaces.

CMSG-CC-3-Pr (Programming using Python)

➢ **CO1:** To familiarize the students with object oriented programming and procedure oriented programming.
➢ **CO2:** To familiarize the students with nowadays very much popularity of the softwareespecially in IT base companies for web application, database handling etc.
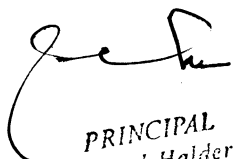
Semester-4:

CMSG-CC-4-Th (Operating System)

➢ **CO1:** Describe the important computer system resources and the role of operating system in their management policies and algorithms.
➢ **CO2:** Understanding of design issues associated with operating systems.

CMSG-CC-4-Pr (Shell Programming)

➢ **CO1:** To learn the command substitution to capture program output.
➢ **CO2:** To learn the conditional statements to control the execution of shell scripts

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B. DISCIPLINE SPECIFIC ELECTIVES (DSE) (6 credits per week)

Semester-5:

CMSG-DSE-A-5-1-Th (Database Management System)

➤ **CO1:** Gain knowledge of database systems and database management systems software.
➤ **CO2:** Ability to model data in applications using conceptual modelling tools such as ER Diagrams and design data base schemas based on the model.
➤ **CO3:** Formulate, using SQL, solutions to a broad range of query and data update problems.

CMSG-DSE-A-5-1-Pr (Database Design and Applications)

➤ CO1: Ability to create database and able to write query using SQL
➤ CO2: Practically students are able to correlate with the real life uses of databases in different sector like Bank, railways, airlines etc.
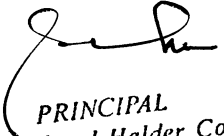
Semester 6:.

CMSG-DSE-6-B-3-Th(Computational Mathematics)

➤ **CO1:** Understand the notion of mathematical thinking, mathematical proofs, andalgorithmic thinking and be able to apply them in problem solving.
➤ **CO2:** Understand the basics of combinatory, and be able to apply the methods fromthese subjects in problem solving.
➤ **CO3:** Understand some basic properties of graphs and related discrete structures, and be ableto relate these to practical examples.
➤

CMS-G-DSE-B-6-3-Pr (Computational Mathematics Lab)

➤ CO1: Ability to write computer programming of graph theory based problem
➤ CO2: Ability to write computer programming of numerical methods like solution of system of linear and Non linear methods.

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C. SKILL ENHANCEMENT COURSES (SEC) (2 credits per week)

CMSG-SEC-A-1 (Data Communication, Networking and Internet)

- ➢ **CO1:** Understand the structure of Data Communications System and its components.
- ➢ **CO2:** Know the layered model approach explained in OSI and TCP/IP network models
- ➢ **CO3:** Identify different types of network devices and their functions within a network.

CMSG-SEC-A-2 (Software Engineering)

- ➢ **CO1:** Basic knowledge and understanding of the analysis and design of complex systems.
- ➢ **CO2:** Ability to apply software engineering principles and techniques.
- ➢ **CO3:** To produce efficient, reliable, robust and cost-effective software solutions.

CMSG-SEC-B-1 (Multimedia and its Application)

- ➢ **CO1:** To familiarize the students with the broad practical applications of multimedia.

- ➢ **CO2:** Learn about various softwares and hardwares used in multimedia.
- ➢ **CO3:** Develop basic multimedia projects using multimedia softwares

CMSG-SEC-B-2 (Information Security)

- ➢ **CO1:** Develop a basic understanding of cryptography, how it has evolved, and some key encryption techniques used today.
- ➢ **CO2:** Gain familiarity with prevalent network and distributed system attacks, defenses againstthem, and forensics to investigate the aftermath.
- ➢ **CO3:** Develop an understanding of security policies (such as authentication, integrity and confidentiality), as well as protocols to implement such policies in the form of message exchanges.

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CO-PO MAPPING FOR B.Sc. IN COMPUTER SCIENCE GENERAL

CO	PO1	PO2	PO3	PO4	PO5	PO6
CMSG-CC-1-Th	√		√	√		
CMSG-CC-1-Pr	√	√		√		√
CMSG-CC-2-Th		√			√	√
CMSG-CC-2-Pr		√		√	√	√
CMSG-CC- 3-Th	√		√			
CMSG-CC-3-Pr		√	√			√
CMSG-CC-4-Th	√		√			
CMSG-CC-4-Pr	√		√			
CMSG-DSE-A-5-1-Th	√	√	√		√	√
CMSG-DSE-A-5-1-Pr	√	√	√		√	√
CMSG-DSE-6-B-3-Th			√	√	√	
CMSG-DSE-6-B-3-Pr			√	√	√	
CMSG-SEC-A-1	√		√			√
CMSG-SEC-A-2	√	√	√		√	√
CMSG-SEC-B-1	√				√	√
CMSG-SEC-B-2				√		√

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