

**BIRLA INSTITUTE OF TECHNOLOGY MESRA, RANCHI**  
**B.E. CS COURSE STRUCTURES**

**SEMESTER I**

<b>Course Name</b>
HU1101 Technical English
PH1101 Physics-I
CH1301 Engg.Chemistry
MA1101 Mathematics-I
ME1101 Engg. Mechanics
ME1102 Engineering Graphics
CS1202 Unix & C Programming
CH1202 Chemistry Lab
PE1102 Workshop Practice-I
GA 1002 NCC/NSS/PT & Games/Creative Arts

**SEMESTER II**

<b>Course Name</b>
MA2101 Maths-II
EE2101 Basic Electrical Engineering
CS2201 Data Structure in C++
CH2203 Environmental Science
PH2103 Physics-II
ME2102 Computer-Aided Drafting
PH1102 Physics Lab
ME2104 Engg. Mechanics Lab
CS2102 Data Structure Lab
PE2102 Workshop Practice- II
GA2002 NCC/NSS/PT & Games/Creative Arts

**SEMESTER III**

<b>Course Name</b>
EC3101 Basic Electronics
ME 3207 Principle of Mechanical Engg.
CS3101 Java Prog & Web Technology
CS3103 Digital Logic Design
CS5103 Fundamentals of Data Communication
CS4101 Discrete Mathematical Structure
EE3102 Basic Electrical Engineering Laboratory
EC3102 Basic Electronics Lab
CS3102 Java Prog. Lab
CS3104 Digital Logic Design Lab
GA3002 NCC/NSS/PT & Games/Creative Arts

**SEMESTER IV**

<b>Course Name</b>
CS4109 Computer System Architecture
CS4105 Database Management System
CS4107 Operating Systems
EC5101 Microprocessor and Interfacing
CP6107 Computer Networks
CP6109 Software Engineering
CP4106 Database Management System Lab
CP4108 Operating Systems Lab
CP6108 Computer Networking Lab
CP6110 Software Engineering Lab
EC5102 Microprocessor Application Lab

**SEMESTER V**

<b>Course Name</b>
CS5101 Formal Languages and Automata Theory
CS5105 Soft Computing
EE3101 Introduction to System Theory
MA3101 Mathematics-III
CP7101 Principles of Programming Languages
CP7103 Computer Graphics
CS5106 Soft Computing Lab
CS5108 Linux Programming Lab
GA4002 NCC/NSS/PT&Games/Creative Arts
CP7104 Computer Graphics Lab.

**SEMESTER VI**

<b>Course Name</b>
CP6101 Design and Analysis of Computer Algorithm
CP6105 Compiler Design
CP6103 System Programming
MA4101 Scientific Computing
EC4105 Discrete & Integrated Analogue Circuits
CS8101 Artificial Intelligence & Expert Systems
MA4102 Scientific Computing Lab
CP6106 Compiler Design Lab
EC4106 Discrete & Integrated Analogue Circuits Lab.
CP8102 Artificial Intelligence Lab.

**SEMESTER VII**

<b>Course Name</b>
CP7105 Parallel Computing
CP7107 Digital Image Processing
EC4107 Semiconductor Devices
CP8104 Simulation & Modeling Lab
Elective I(Group-I)
Elective II(Group-II)
CP8203 Simulation & Modeling Lab
CP7106 Parallel Computing Lab.
CP7108 Digital Image Processing Lab.
CP7112 Project

<b>List of electives (Elective I and Elective II)</b>	
<b>Group I (Elective-I)</b>	
CP 7111	Genetic Algorithms
CP 7117	Optimization Techniques
CP 7119	Advanced Computer Architecture
<b>Group II (Elective-II)</b>	
CP 7123	Bio- informatics
CP 7115	Neural Networks and Applications
CP 7125	Object Oriented Analysis and Design

## SEMESTER VIII

Course Name
EE5107 Digital signal Processing
CP8105 Distributed Systems
MB8101 Principles of Management
EC6111 VLSI Design
Elective – III
Elective – IV
EE5108 Digital signal Processing Lab
EC6112 VLSI Design Lab
CP8112 Project

List of Electives	
CP 8111	Natural Language Processing
CP 8113	Computational Geometry
CP 8115	Embedded System Design
CP 8117	Multimedia Computing & Communications
CP 8119	Advanced Computer Graphics
CP 8121	Pattern Recognition
CP 8123	Real Time Systems
CP 8125	Computer Vision
CP 8127	Computing & Complexity Theory
IT 8101	Data Mining & Warehousing