Sidho-Kanho-Birsha University, Purulia

Department of Computer Science

w.e.f Academic Session 2020-21

Curriculum Structure

Semester I

I. Principle Programming Languages (Procedural, Functional, Logic, Object Oriented)

II. Advanced Operating System (Network, Distributed, Real-time, Cloud)

III. Design and Analysis of Algorithms

IV. Mathematical Foundations (Statistical techniques, Statistical inferences, Linear algebra, Tensor, Optimization techniques)

V. Operating system Lab (Network OS, Multi-thread Programming, Open Source Cloud)

VI. Programming & Algorithm Analysis Lab (Java, Python, Functional Programming)

	Paper Code	Paper Title	Credits	Marks
SEM-I	MCSCCT101	Programming Languages	4	40+10
	MCSCCT102	Advance Operating Systems	4	40+10
	MCSCCT103	Design and Analysis of Algorithms	4	40+10
	MCSCCT104	Mathematical Foundations	4	40+10
	MCSCS105	Operating System Lab	4	50
	MCSCS106	Programming & Algorithm Analysis Lab	4	50

(Internal Assessment: 10 Marks, Term End Exam: 40 Marks)

Semester II

I. Formal Languages & Automata Theory

II. Advanced DBMS (Distributed, Data warehouse)

III. Advanced Computer Networks (Fog, Cloud, Edge, Sensor, Wireless)

IV. Information Security (Coding theory, Cryptography, Crypto analysis)

V. Network Lab

VI. Database Lab

	Paper Code	Paper Title	Credits	Marks
SEM-II	MCSCCT201	Formal Languages and Automata Theory	4	40+10
	MCSCCT202	Advanced Database Management	4	40+10
	MCSCCT203	Advanced Computer Networks	4	40+10
	MCSCCT204	Information Security and Coding Theory	4	40+10
	MCSCS205	Network Lab	4	50
	MCSCS206	Database Lab	4	50

Semester III

I. Compiler Design

II. Artificial Intelligence

III. Open Elective

IV. Major Elective-I

V. Artificial Intelligence Lab

VI. Compiler Design Lab

	Paper Code	Paper Title	Credits	Marks
SEM-III	MCSCCT301	Compiler Design	4	40+10
	MCSCCT302	Artificial Intelligence	4	40+10
	MCSOET303	Open Elective	4	40+10
	MCSMET3204	Major Elective-I	4	40+10
	MCSCS305	Artificial Intelligence Lab	4	50
	MCSCS306	Compiler Design Lab	4	50

Semester IV

I. Data Analytics (Statistical analysis, Optimization, Neural network, Regression, Mining, Machine learning)

II. Advanced Software Design (Object oriented, UML, Testing, Verification, Quality analysis)

III. Major Elective – II

IV. Major Elective – III

V. Add on Course--- Data Analytics/Advanced Software Design

VI. Major Project

VII. Seminar and Grand Viva

	Paper Code	Paper Title	Credits	Marks
SEM-IV	MCSCCT401	Data Analytics	4	40+10
	MCSCCT402	Data Analytics/ Advanced Software Design	4	40+10
	MCSMET403	Major Elective – II	4	40+10
	MCSMET404	Major Elective – III	4	40+10
	MCSCS405	Major Project	4	50
	MCSCS406	Seminar and Grand Viva	4	50

MAJOR ELECTIVES:

Group-I: Data Science

Machine Learning, Deep Learning, Computer Vision & Pattern Recognition, Business Intelligence, Soft Computing

Group-II: Cyber Security

Network Security, Digital Forensic, Post Quantum Cryptography, Hardware Security, Cyber Law

Group-III: Distributed System & Resources

Cloud Computing, IOT, Service Oriented Computing, Semantic Web, Multimedia Systems & Database