Indian Institute of Technology, Goa
Curriculum(2022 batch) - BTech Mathematics and Computing

SEMESTER 1
Calculus
Quantum Physics and Applications
Introduction to Computing
Foundation for Humanities and Social Sciences
Inorganic and Organic Chemistry
Physical Chemistry
Chemistry Lab
Introduction to Manufacturing
National Sports Organization
Introduction to Profession

SEMESTER 2
Basic Linear Algebra
Ordinary Differential Equations
Electricity and Magnetism
Physics Lab
Introductory Biology
Engineering Graphics and Introduction to Computer-Aided-Drawing
Introduction to Electrical and Electronics Engineering
Software Tools
National Sports Organization

SEMESTER 3
Real Analysis
Discrete Mathematics
Probability and Statistics for Computer Science
Data Structures and Algorithms
Open Elective

SEMESTER 4
Multivariate Calculus
Algebra
Numerical Analysis
Algorithm Design
Open Elective

SEMESTER 3 ELECTIVES
Economy and Public Policy
Language and Society
Signals and Systems

SEMESTER 4 ELECTIVES
Introduction to Morphology
Complex Economic and Social Systems
Computer Graphics using OpenGL
Public Policy and Good Governance

SEMESTER 5
Measure and Probability
Differential Equations I
Differential Equations II
Complex Analysis I
Complex Analysis II
Linear Algebra and Applications
Open Elective

SEMESTER 5 ELECTIVES
Introduction To Bioinformatics
Economy and Public Policy
Language and Society
Economics of Sustainability
Technology And Society - Learning (TASLe)

SEMESTER 6
Topology
Machine Learning
Theory of Computation
Program Elective
Open Elective

SEMESTER 6 ELECTIVES
Optimization - Theory and Algorithms
Coding theory and Cryptography
Elementary Number Theory
Modeling and Simulation of Systems
Complex Economic and Social Systems
Public Policy and Good Governance
Introduction to Robotics

SEMESTER 7
Program Elective
Program Elective
Open Elective
Open Elective
OR
BTP (One BTP of six credit from MnC) **OR** (Two BTPs of total six credits from CSE)
Open Elective
Open Elective

SEMESTER 8
6 months Internship
OR
Program Elective
Program Elective
Open Elective
Open Elective
OR
BTP
Open Elective
Open Elective

SEMESTER 7 ELECTIVES
Advanced Data Structures using C++
Deep learning and Computer Vision Applications
Fundamentals of Computing Systems Design
Hyperbolic Geometry
Energy, Environment and Economics
Economics of Sustainability
Introduction to time series econometrics
Sensors and Actuators: Fabrication and Applications

SEMESTER 8 ELECTIVES
Optimization - Theory and Algorithms
Coding theory and Cryptography
Formal methods in Machine learning
Elementary Number Theory
Modeling and Simulation of Systems
Probabilistic Graphical Models
Introduction to Robotics
Public Policy and Good Governance