

12-সেমিস্টার একাডেমিক সুপার-করিকুলাম (৭টি বিষয়)

Subjects

1. Physics
2. Chemistry
3. Higher Math
4. English
5. Biology
6. Anatomy (Medical 1st Year Level)
7. Arts & Commerce Essential Knowledge

Languages: বাংলা • English • العربية

Target Level: MBBS + Engineering + Commerce + General Education equivalent.

★ SEMESTER 1 – Core Foundations

PHYSICS

Units & Dimensions

পরিমাপ ও মাত্রা

القياس والأبعاد

Kinematics (1D/2D)

গতিবিদ্যা

الحركة الخطية

Newton's Laws

নিউটনের সূত্র

قوانين نيوتن

CHEMISTRY

Structure of Atom

পরমাণুর গঠন

تركيب الذرة

Periodic Table Basics

Chemical Bonding

HIGHER MATH

Algebra Refresher

Trigonometry Basics

Matrices Intro

ENGLISH

Academic Grammar

Reading Skills

Paragraph & Summary Writing

BIOLOGY

Life Characteristics

Cell Structure

Biomolecules

★ ANATOMY (Medical First Year Level – Part 1)

1. Basic Anatomical Terminology

Anatomical planes, positions

বাংলা: অ্যানাটমিকাল টার্ম, শরীরের অক্ষ

العربية: المصطلحات التشريحية

2. Osteology (Bones) Introduction

Functions of bone

Types of bones (long, short, flat)

Skeleton overview

3. Upper Limb – Overview

Bones: Clavicle, Scapula, Humerus

Joints (shoulder basics)

Nerves (Brachial Plexus intro)

ARTS/COMMERCE ESSENTIAL KNOWLEDGE

Basic Economics (Demand–Supply)

অর্থনীতি: চাহিদা-যোগান

الاقتصاد: العرض والطلب

Introduction to Civics & Society

World Geography Basics

★ SEMESTER 2 – Scientific Thinking + Human Body Intro

PHYSICS

Work, Energy, Power

Circular Motion

CHEMISTRY

Gas Laws

Intermolecular Forces

HIGHER MATH

Geometry

Quadratic Functions

ENGLISH

Basic Essay Writing

Spoken English Fluency

BIOLOGY

Cell Cycle

Enzymes

★ ANATOMY (Medical — Part 2)

4. Thorax Anatomy (MBBS 1st Year)

Thoracic Wall, Ribs

Lungs: Lobes, Bronchial Tree

Heart: Chambers, Valves, Great Vessels

Pericardium

5. Histology Introduction

Epithelial Tissue

Connective Tissue

ARTS/COMMERCE

Accounting Basics

হিসাববিজ্ঞান পরিচিতি

المحاسبة المبدئية

World History Timeline

Basic Political Science

★ SEMESTER 3 – Analytical Development + Organ Systems

PHYSICS

Rotational Dynamics

Gravitation

CHEMISTRY

Equilibrium

Acids–Bases

HIGHER MATH

Limits

Complex Numbers

ENGLISH

Analytical Reading

Report Writing

BIOLOGY

Genetics (Mendelian)

DNA–RNA

★ ANATOMY (Medical – Part 3)

6. Abdomen Anatomy

Abdominal wall

GI Tract (Esophagus → Stomach → Intestine)

Liver, Gallbladder, Pancreas

Peritoneum

7. Neuroanatomy — Beginner

Brain Regions Intro

Spinal Cord Structure

ARTS/COMMERCE

Introduction to Business

Cultural Studies / Anthropology Basics

Psychology Basics

★ SEMESTER 4 – Advance Foundation + Human Systems

PHYSICS

Fluid Mechanics

Thermal Physics

CHEMISTRY

Thermodynamics

Electrochemistry

HIGHER MATH

Derivatives (Advanced)

Vector Algebra

ENGLISH

Referencing Styles

Academic Research Skills

BIOLOGY

Photosynthesis

Respiration

★ ANATOMY (Medical – Part 4)

8. Pelvis & Perineum

Pelvic organs overview

Urinary bladder

Reproductive organs (male & female)

9. Lower Limb Anatomy

Bones: Femur, Tibia, Fibula

Major nerves (Sciatic nerve)

ARTS/COMMERCE

Microeconomics Basics

Logic & Critical Thinking

Communication Skills

★ SEMESTER 5 – Pre-Professional Core

PHYSICS

Oscillation (SHM)

Waves

CHEMISTRY

Organic Chemistry Intro

Hydrocarbons

HIGHER MATH

Integration

DEQ Intro

ENGLISH

Public Speaking

Presentation Skills

BIOLOGY

Human Anatomy Intro

Digestive System

★ ANATOMY (Medical – Part 5)

10. Clinical Anatomy Essentials

Surface Anatomy

Anatomical Imaging (X-ray, CT basics)

ARTS/COMMERCE

Marketing Basics

Sociology

Entrepreneurship Intro

★ SEMESTER 6 — Mid-Level Advance

PHYSICS – Optics & Thermodynamics

Geometric Optics

Reflection & Refraction

বাংলা: প্রতিফলন ও প্রতিসরণ

العربية: الانعكاس والانكسار

Lenses, Mirrors

Wave Optics Basics

Blackbody Radiation Intro

CHEMISTRY – Organic Depth & Kinetics

Reaction Mechanisms (SN1, SN2, E1, E2)

Stereochemistry: Chirality, Optical Activity

Chemical Kinetics: Rate Law, Activation Energy

Bengali & Arabic naming included

HIGHER MATH – Multivariable Foundations

Partial Derivatives

Double & Triple Integrals

Probability & Statistics (Mean, Variance, Normal Distribution)

বাংলা: বহু পরিবর্তী ক্যালকুলাস

العربية: حساب التفاضل متعدد المتغيرات

ENGLISH – Creative & Analytical

Creative Writing Techniques

Descriptive & Narrative Writing

Literary Devices

Academic Tone vs Creative Tone

BIOLOGY – Human Circulatory & Immune Systems

Blood Composition

Hemoglobin

Heart Structure & Cardiac Cycle

Immunity (Innate/Adaptive)

★ **ANATOMY** – Cardiovascular System

Heart Anatomy (Atria, Ventricles, Valves)

Coronary Circulation

Major Arteries & Veins

Lymphatic System Anatomy

বাংলা + العربية টার্মসহ

ARTS/COMMERCE – Global Economics Intro

GDP, Inflation, Recession

Economic Systems

ফিন্যান্সের বেসিক টার্ম

العربية: مفاهيم الاقتصاد الأساسية

★ **SEMESTER 7 — Engineering + Medical Systems**

PHYSICS – Electricity & Magnetism

Electric Field, Potential

Capacitance

DC Circuits: Series, Parallel

Basic Magnetism

CHEMISTRY – Spectroscopy & Solutions

UV, IR Basics

Beer-Lambert Law

Solubility & Colligative Properties

HIGHER MATH – Linear Algebra Advanced

Determinants

Systems of Linear Equations

Eigenvalues & Eigenvectors

ENGLISH – IELTS/TOEFL Preparation

Academic Reading

Listening Skills

Structured Essay

Formal Email Writing

BIOLOGY – Respiratory System

Lung Structure

Gas Exchange

Transport of Oxygen & CO₂

★ **ANATOMY** – Respiratory System

Nasal cavity, Pharynx, Larynx

Trachea & Bronchial Tree

Lung Lobes, Pleura

Diaphragm Anatomy

বাংলা + العربية

ARTS/COMMERCE – World Politics & Diplomacy

UN Structure

International Relations Basics

Globalization

العربية: السياسة العالمية

★ **SEMESTER 8 — Technology Integration**

PHYSICS – Advanced Electromagnetism

Faraday's Law

Transformers

AC Circuits

Maxwell's Equations (Intro)

CHEMISTRY – Polymers, Biochemistry, Environmental

Polymer Chemistry

Protein Structure

Water Chemistry

Environmental Pollutants

HIGHER MATH – Differential Equations (Advanced)

First & Second Order ODE

Laplace Transform (intro)

Applications in Biology & Physics

ENGLISH – Technical English

Technical Reports

Research Reading Skills

Scientific Abstract Writing

BIOLOGY – Nervous System

Neuron Structure

CNS vs PNS

Synapses & Neurotransmitters

Reflex Arcs

★ **ANATOMY** – Neuroanatomy (Detailed)

Cerebrum, Cerebellum, Brainstem

Cranial Nerves (I–XII)

Spinal Cord Sections

Meninges & CSF Pathways

ARTS/COMMERCE – Accounting (Intermediate)

Ledger

Trial Balance

Financial Statements

★ SEMESTER 9 — Modern Science & Commerce

PHYSICS – Modern Physics

Quantum Basics
Photoelectric Effect
Bohr Model
Nuclear Physics

CHEMISTRY – Industrial Chemistry

Fertilizers
Petrochemicals
Metal Extraction

HIGHER MATH – Vector Calculus

Divergence, Curl, Line Integrals & Surface Integrals

ENGLISH – Argumentation & Debate

Logical Fallacies
Debate Structure
Analytical Reasoning Writing

BIOLOGY – Human Reproductive System

Male & Female Reproduction
Hormonal Regulation
Pregnancy Basics

★ **ANATOMY** – Reproductive Anatomy

Male organs (Testis, Vas deferens, Prostate)
Female organs (Uterus, Ovaries, Fallopian Tubes)
Pelvic Floor Anatomy

ARTS/COMMERCE – Global Business

International Trade
Entrepreneurship
Branding & Marketing

★ SEMESTER 10 — Pre-University Advanced

PHYSICS – Atomic & Semiconductor Physics

Atomic Spectra

Lasers

Semiconductor Diodes

Transistors Basics

CHEMISTRY – Drug Chemistry & Analytical Methods

NMR, IR (detailed)

Drug Design Basics

Chromatography

HIGHER MATH – Real Analysis (Intro)

Sets

Functions

Limits & Continuity

ENGLISH – Research Essay

Long-form Academic Writing

Using Evidence

Persuasive Argumentation

BIOLOGY – Evolution & Genetics (Advanced)

Natural Selection

Population Genetics

Speciation

★ **ANATOMY** – Embryology (MBBS Level)

Fertilization

Early Development

Fetal Period

Placenta & Umbilical Cord

ARTS/COMMERCE – Philosophy & Ethics

Logic

Moral Philosophy

Islamic Ethical Framework

★ SEMESTER 11 — Research & Global Understanding

PHYSICS – Relativity & Cosmology Intro

Special Relativity Basics

Time Dilation

Big Bang Theory

CHEMISTRY – Nanochemistry & Materials

Nanoparticles

Surface Chemistry

HIGHER MATH – Discrete Mathematics

Sets, Graph Theory

Recurrence Relations

Algorithms

ENGLISH – Debate Mastery + Critical Thinking

Structured Argument

Rhetoric

Evaluating Sources

BIOLOGY – Ecology

Ecosystems

Biogeochemical Cycles

Population Dynamics

★ **ANATOMY** – Neurophysiology

Nerve conduction

Synaptic transmission

Reflexes

ARTS/COMMERCE – Financial Literacy

Banking

Savings

Personal Finance

Investments Basics

★ SEMESTER 12 — Professional & Life-Ready

PHYSICS – Applied Physics

Robotics Sensors

Medical Imaging (X-Ray, MRI, CT)

Renewable Energy Systems

CHEMISTRY – Material Science & Forensics

Metals, Ceramics, Polymers

Forensic Chemical Analysis

HIGHER MATH – Mathematical Modelling + AI Math

Data Analysis

Statistics for AI

Optimization

ENGLISH – Professional Communication

CV & Resume

SOP

Presentation Mastery

Workplace English

BIOLOGY – Biotechnology & Applied Biology

Genetic Engineering

CRISPR

Bioinformatics Intro

★ **ANATOMY** – Final Comprehensive Revision

All regions review

Clinical correlations

Radiological Anatomy

ARTS/COMMERCE – Leadership & Management

Teamwork

Communication

Business Decision Making

Islamic Leadership Principles
