

ST. FRANCIS XAVIER SCHOOL
SYLLABUS FOR CLASS XII SCIENCE
ACADEMIC SESSION 2026- 27
ENGLISH LANGUAGE

TEXT BOOK : PEARLS OF ENGLISH LANGUAGE

HALF YEARLY		ANNUAL	
CHAPTER NO./TITLE	TOPICS	CHAPTER NO./TITLE	TOPICS
1	The pattern of English Language	2	The Art of Writing Essays
2	The Art of Writing Essays		The Narrative Essay
	The Narrative Essay		The Descriptive Essay
	The Descriptive Essay		The Reflective Essay
	The Reflective Essay		The Argumentative Essay
	The Argumentative Essay		One Word Essay
	One Word Essay		Short Story
	Short Story		
3	Article Writing	3	Book Review
	Report Writing		Statement of Purpose
	Blog Writing		Blog Writing
	ii) Proposal Writing		
4	Comprehension	4	Comprehension
5	Subject -Verb Agreement	5	Conditional Sentences

Tense
The Voice Change
Direct Indirect Speech
Comparison of adjectives
Phrasal verbs

6

Test Papers 1-12

7

Oral and Aural

Transformation of sentences I
Transformation of sentences II
Prepositions
Phrasal Verbs

6

Test Papers 13-25

7

Oral and Aural

Revision

PROJECT TOPIC : Prepare the text of a brochure on an event to be conducted in your school

Project submission date Ist project :on or before 18-08-26

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PROJECT TOPIC : A process description (e.g. instruction to operate a device, a recipe, a scientific experiment)

Final: on or before 05-01-2027

SYLLABUS FOR UNIT TEST

Will be notified by the subject teacher at the appropriate time

ST. FRANCIS XAVIER SCHOOL
SYLLABUS FOR CLASS XII SCIENCE
ACADEMIC SESSION 2026 - 27
ENGLISH LITERATURE
Prescribed Text Books : Macbeth, Prism, Rhapsody

HALF YEARLY		REHEARSAL	
CHAPTER NO./TITLE	TOPICS	CHAPTER NO./TITLE	TOPICS
Macbeth	Act - III and Act IV	Macbeth	Act - V
Prism		Prism	
11	Atithi - Rabindranath Tagore	14	Indigo - Satyajit Ray
12	Cookie Lady -Philip K Dick	15	The Medicine Bag -Virginia Driving Hawk
13	There Will Come Soft Rains - Ray Bradbury		
Rhapsody		Rhapsody	
11	Telephone Conversation - Wole Soyinka	14	Small Towns and The River - Mamang Dai
12	Tithonus - Alfred Lord Tennyson	15	Death Be Not Proud - John Donne
13	Beethoven -Shane Koyczan		
	PROJECT TOPIC :		PROJECT TOPIC :
	Analysis of the theme of 'Telephone Conversation'		Analysis of the theme of 'The Medicine Bag' / 'Death Be Not Proud'
	Project submission date : 1st project :on or before 17th August 2026		
	Final :on or before 23rd November 2026		

SYLLABUS FOR UNIT TEST

Will be notified by the subject teacher at the appropriate time

ST. FRANCIS XAVIER SCHOOL
SYLLABUS FOR CLASS XII SCIENCE
ACADEMIC SESSION 2026 - 27
PHYSICS

Prescribed Text Book : ISC PHYSICS XII - Nootan, Nageen Prakashan

HALF YEARLY		REHEARSAL	
CHAPTER NO./TITLE	TOPICS	CHAPTER NO./TITLE	TOPICS
1/ELECTROSTATICS	<p>Electric charges, coulomb's law, electric field, lines of force, gauss' law, dipole, field due to dipole, torque on a dipole.</p> <p>potential, potential energy, potential due to point charge, potential due to dipole, work done in rotating a dipole.</p> <p>dielectric, dielectric constant, capacitance, combination of capacitance, energy stored in a capacitance, dielectric in capacitance, dielectric strength.</p> <p>photo electric effect, lenard experiment, outcomes and graphical representation, analysis. Einstein equation, planck constant from the graph.</p>	7/MAGNETIC FIELDS AND MAGNETIC SUBSTANCES, EARTH MAGNETISM.	<p>Distinction between magnetic field and electric field, magnetic field lines due to a magnetic dipole, expression for magnetic field due to magnetic dipole, magnetic flux.</p> <p>Earth's magnetic field, the component of earth's magnetic field, angle of dip, angle of inclination- their definitions and relations.</p> <p>types of magnetic material, paramagnetic, diamagnetic and ferromagnetic material. Concepts of magnetic substance, and relative permeability.</p> <p>Faraday's laws, induced emf and current; Lenz's Law, eddy currents. Self-induction and mutual induction. Transformer.</p>

2/PHOTO ELECTRIC
EFFECT AND DUAL
NATURE OF MATTER
AND RADIATION

dual nature of matter and radiation, davisson germer experiment, wave nature of electron, exhibition wave nature through diffraction. Experimental observation.

3/CURRENT
ELECTRICITY

Basics of electricity, drift motion, derivation for the expression for current, ohm's law, prove of ohm's law. Expression for conductivity, mobility, resistivity, etc.

d.c. circuits and measurement, kirchoff's law, combination of cells, potentiometer, application of potentiometer, terminal voltage, internal resistance. electrical energy, joule heating, basics

4/OPTICS (RAY OPTICS)

reflection of light on spherical mirror, basics of reflection.
refraction through plane surface, real depth and apparent depth, refraction through prism, minimum deviation, dispersion, angular dispersion, rayleigh's theory of scattering of light. refraction through spherical surface, ray to the denser medium, lens maker formula, combination of lens, magnification, power of a

8/ELECTROMAGNETIC
INDUCTION.
AND
ALTERNATING
CURRENT

Peak value, mean value and RMS value of alternating current/voltage; their relation in sinusoidal case; reactance and impedance; LC oscillations (qualitative treatment only), LCR series circuit, resonance; power in AC circuits, wattless current. AC generator.

9/OPTICS (WAVE
OPTICS)

Wave front and Huygen's principle. Proof of laws of reflection and refraction using Huygen's principle. Interference, Young's double slit experiment and expression for fringe width(β), coherent sources and sustained interference of light, Fraunhofer diffraction due to a single slit, width of central maximum; polarisation, plane polarised light, Brewster's law, uses of plane polarised light and Polaroids.

10/ATOMIC
PHYSICS

Alpha-particle scattering experiment; Rutherford's atomic model; Bohr's atomic model, energy levels, hydrogen spectrum. formulae for wavelength in Lyman, Balmer, Paschen, Brackett and Pfund series. Rydberg constant. frequency and wavelength of different lines of emission spectra;

	optical instruments, simple microscope, compound microscope, derivation of the magnifying power, refracting telescope, derivation of the magnifying power, reflecting telescope, advantages and disadvantages and uses.		
	Biot-Savart law, vector form, application, (all) with graphical explanation. Ampere's circuital law, application, solenoid. force on a moving charge, Lorentz force, force on a current carrying conductor, force between two parallel current carrying conductor. Working and limitation of cyclotron. Derivation of the torque experienced by a current carrying conductor. Moving coil galvanometer, current and voltage sensitivity, conversion of galvanometer into an ammeter and voltmeter.	11/NUCLEAR PHYSICS	Composition and size of nucleus, Radioactivity, Mass-energy relation, mass defect; binding energy per nucleon and its variation with mass number; Nuclear reactions, nuclear fission and nuclear fusion.
5/MAGNETIC EFFECT OF CURRENT AND MAGNETISM		12/ELECTRONIC DEVICES	Semiconductor Electronics: Materials, Devices and Simple Circuits. Energy bands in conductors, semiconductors and insulators (qualitative ideas only). Intrinsic and extrinsic semiconductors. Semiconductor diode: I-V characteristics in forward and reverse bias, diode as a rectifier; Special types of junction diodes: LED, photodiode, solar cell and Zener diode and its characteristics, Zener diode as a voltage regulator.
6/ ELECTROMAGNETIC WAVES	Basic idea of displacement current, E M waves characteristics, transverse nature, order of electromagnetic wave, source, properties and -----		

PROJECT TOPICS : Interference of light and sound, Capacitor and inductance and its applications in electrical appliance, Reflection on spherical mirror, Alternating Current, Radio activity, Diodes and its applications, Astronomical telescopes (James Webb telescope and Hubble Space Telescope), Diffraction of light, Nuclear physics, Refraction through lens and prism, Wireless Communications, Electromagnetic waves, Transistor and its applications, Atomic physics, Digital electronics, Photo electric effect and recent research trend, Moving coil Galvanometer and conversion of galvanometer into an ammeter and voltmeter. Semiconductor physics, Earth magnetism and cosmic rays

Project submission date 1st project : on or before 25th August 2026

Final : on or before 30th November 2026

SYLLABUS FOR UNIT TEST

Will be notified by the subject teacher at the appropriate time

ST. FRANCIS XAVIER SCHOOL
SYLLABUS FOR CLASS XII SCIENCE
ACADEMIC SESSION 2026 - 27
CHEMISTRY

Prescribed Text Book : ISC CHEMISTRY by Dr H.C Srivastava(Nootan Publications)

HALF YEARLY		REHEARSAL	
CHAPTER NO./TITLE	TOPICS	CHAPTER NO./TITLE	TOPICS
Aldehyde, Ketones & Carboxylic acids	General Classification, Manufacture, Preparation, Properties, Conversion Aldehydes & Ketones, Aliphatic & Aromatic Aldehydes, Nucleophilic Addition Reactions, Distinguish	d- and f-Block elements	d-block(Oxidation state, magnetic property, catalyst, interstitial compounds) f-block-4f and 5f series -oxidation state, lanthanoid Contraction, Basicity, Magnetic Behaviour
Coordination Compounds	Important terms of Co-ordination Compounds, Nomenclature of co-ordination compounds, Isomerism, bonding, d-d transitions, -VBT & CFT & Limitations.	Chemical Kinetics	Rate of Reaction, Law of Mass Action, Concept Of reversible Reactions Equilibrium Constant in terms of Graphical Representations, Order & Molecularity
Solutions	Raoult's law, Colligative properties, Depression in Freezing point, Elevation in Boiling, Osmotic Pressure, Van't Hoff Factor-association and dissociation	Biomolecules	Carbohydrates- reducing and non-reducing Nucleic Acids -RNA and Properties of Fibrous Protein, Amino acid- isoelectric point, Peptide linkage
Alcohol & Phenols	Nomenclature, preparation, Basic Character, Properties-		

Lucas Test, Conversion of one alcohol to another
Organometallic compounds.

Organic Compounds Containing Amines
Types of Amines ,chemical properties,Distinguishing Tests between primary ,Secondary and Tertiary Amines

Electrochemistry
Cell Notation , Nernst Equation, Electromotive Force, Conductance, Faraday's Law Of Electrolysis, Eletrode Potential, Specific Conductance, Molar Conductance, Kohlrausch"s Law

Haloalkanes and Haloarenes
Nomenclature, preparation, Properties-
Chlorobenzene, Organometallic Compounds

PROJECT TOPICS: Finger Printing , Forensic Sciences , Chemistry in Industrial Field, Co-ordination Chemistry in Medicinal Field, Biomolecules ,Natural Polymers.

Project submission date 1st project :On or before 25th August 2026

Final :On or before 28th November 2026.

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ST. FRANCIS XAVIER SCHOOL
SYLLABUS FOR CLASS XII SCIENCE
ACADEMIC SESSION 2026 - 27
MATHEMATICS

Prescribed Text Book : ISC MATHEMATICS by M.L.Agarwal

HALF YEARLY		REHEARSAL	
CHAPTER NO./TITLE	TOPICS	CHAPTER NO./TITLE	TOPICS
Inverse trigonometric	Inverse trigonometric function	Probability (II)	Mean, Variance of Random Variable
Matrices	Operations, Martin's Rule		
Determinants	Properties	Increasing and	Increasing and decreasing Function
Relations	Properties and Equivalence Relation	Equation of Tangent and Normal & Rate	Equation of Tangent and Normal & Rate Measurer
		Definite	Properties and its application,by
Functions	Real valued function and invertibility	integration,Indefinite	Substitution,Standard Methods, By
		Integration (Revision)	Parts,Special Integrals
		Differential Equations	Order, Degree identification, Variable
Continuity	Continuity of functions		Separable, Homogeneous type, Linear of 1st Order

		Straight Line in Space	Cartesian & Vector Equation, Angle between two planes, Equation of Plane through Intersection of Planes.
Differentiability	Concept of differentiability		
Differentiation	implicit functions	Linear Programming	Linear Programming (Graphically)
Differentiation	Successive differentiation		
Indefinite Integration	By Substitution,Standard Methods, By	Area under the curve The Plane	Application of definite integration Cartesian & Vector Equation, Angle between two planes, Equation of Plane through Intersection of Planes.
Probability (I)	Conditional probability,independent events, Bayes' theorem.		
Vectors	Scalar or dot product, Cross Product, Scalar Triple Product		

PROJECT TOPICS : To be assigned by the subject teacher based on the topics given in the CISCE website

Project submission date:: 1st project :on or before : 25th August, 2026.

Final :on or before 28th November, 2026.

SYLLABUS FOR UNIT TEST

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**ST. FRANCIS XAVIER SCHOOL
SYLLABUS FOR CLASS XII SCIENCE
ACADEMIC SESSION 2026 - 27
BIOLOGY**

Prescribed Text Book : ISC BIOLOGY by Dr. S C Tripathy, Balaji Publication

HALF YEARLY		REHEARSAL	
CHAPTER NO./TITLE	TOPICS	CHAPTER NO./TITLE	TOPICS
Sexual reproduction in flowering plants	Flower structure; development of male and female gametophytes; pollination - types, agencies and examples; outbreeding devices; pollen-pistil interaction; artificial hybridisation; double fertilization; post fertilization events - development of endosperm and embryo, development of seed and formation of fruit; special modes - apomixis, parthenocarpy, polyembryony; Significance of seed dispersal and fruit formation.	Evolution	Origin of life; biological evolution and evidences for biological evolution (palaeontology, comparative anatomy, embryology and molecular evidences); Darwin's contribution, modern synthetic theory of evolution; mechanism of evolution - variation and natural selection with examples, types of natural selection; gene flow and genetic drift; Hardy - Weinberg's principle; adaptive radiation; human evolution.
Human Reproduction	Male and female reproductive systems; microscopic anatomy of testis and ovary; gametogenesis - spermatogenesis and oogenesis; menstrual cycle; fertilisation, embryo development upto blastocyst formation, implantation; pregnancy and placenta formation (elementary idea); parturition (elementary idea); lactation (elementary idea).	Human Health and Diseases	Pathogens; parasites causing human diseases (viruses, bacteria, protozoans, helminths and fungi); Basic concepts of immunology - vaccines; cancer, HIV and AIDS; Adolescence - drug and alcohol abuse.

Reproductive Health

Need for reproductive health and prevention of Sexually Transmitted Diseases (STDs); birth control - need and methods, contraception and medical termination of pregnancy (MTP); amniocentesis; infertility and assisted reproductive technologies - IVF, ZIFT, GIFT (elementary idea for general awareness).

Principles of inheritance and variation

Heredity and Variation: Mendelian inheritance; deviations from Mendelism- incomplete dominance, co-dominance, multiple alleles and inheritance of blood groups, pleiotropy; elementary idea of polygenic inheritance; sex determination; linkage and crossing over; mutation; sex linked inheritance; Mendelian disorders in humans; chromosomal disorders in humans.

Molecular basis of Inheritance

Search for genetic material; structure of DNA and RNA; DNA packaging; DNA replication; central dogma; transcription, genetic code, translation; gene expression and regulation - lac operon; human genome project; DNA fingerprinting

Microbes in Human Welfare

In household food processing, industrial production, sewage treatment, energy generation and microbes as biocontrol agents and biofertilisers. Antibiotics.

Biotechnology - Principles and processes

Genetic Engineering (recombinant DNA technology)

Biotechnology and its applications

Applications of biotechnology in health and agriculture: human insulin and vaccine production, stem cell technology, gene therapy; genetically modified organisms - Bt crops; transgenic animals; biosafety issues, biopiracy and biopatents.

Organisms and Populations

Population; population interactions; population attributes - growth, birth rate and death rate, age distribution.

Ecosystem

Ecosystems: patterns, components; productivity and decomposition; energy flow; pyramids of number, biomass, energy.

Biodiversity and its Conservation	Concept of biodiversity; patterns of biodiversity; importance of biodiversity; loss of biodiversity; biodiversity conservation; hotspots, endangered organisms, extinction, Red Data Book, biosphere reserves, national parks, sanctuaries and Ramsarsites
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PROJECT TOPICS: DNA fingerprinting, Autism, Stem cell therapy, Robotics in surgery, AI in cancer treatment, Gene Therapy etc.

Project submission date 1st project :on or before 25th August 2026

Final :on or before 28th November 2026

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ST. FRANCIS XAVIER SCHOOL
SYLLABUS FOR CLASS XII SCIENCE
ACADEMIC SESSION 2026 - 27
COMPUTER SCIENCE

Prescribed Text Book : ISC Computer Science using Java by Dheeraj Mehrotra

HALF YEARLY		REHEARSAL		
CHAPTER NO./TITLE	TOPICS	CHAPTER NO./TITLE	TOPICS	TOPICS
Boolean Algebra	Propositional logic, Binary quantities, theorems, Karnaugh-maps, minterms, maxterms,SOP,POS and related problems.	Functions /Methods		Function invocation - call by value, call by reference, Constructors, Formal/actual argument, Overloading, programs etc
Computer Hardware	Logic Gates- AND, OR, NOT, NAND, NOR, XOR, XNOR. Applications- Adders,Encoders,Decoders,Multiplexers	Arrays, Strings		1-D Arrays, 2-D Arrays, String concept, syntax and applications in computer programs etc.
Objects and Classes	Attributes, behaviour, Objects, Classes and their examples	Compiling and Running Java Programs		Writing , Compiling and executing Java Programs (In Blue Java) etc
Java Revision Tour	Anatomy of java,fundamentals, Exceptions etc.	Classes-An OOP Perspective		OOP Concept, characteristics of OOP,features of OOP, Classes, JVM etc.
Primitive values, Datatypes	Basic concepts, Token, Variable, different datatypes, their behaviour, casting, precedence	Recursion		Difference with Iteration, Merits, Demerits,Programs etc
Statements, Control Structures and Scope	if, if – then - else, switch, loops, different types, their syntax, use and differences etc.	Concept of Inheritance		Concept,Types of Inheritance, method overriding, base, derived class, super keyword, Programs etc
Functions /Methods	Functions - Concept and terminologies, need, advantages, disadvantages	Simple Data Structures		Stack, Queue,Linked list concept, types of linked list, singly linked list.

Recursive Data Structures Trees, terminologies, Types of Traversal Techniques -Inorder, Preorder, Postorder.

Computational Complexity Definition, Big O Notation, Best, Worst, Average case complexity.

PROJECT TOPICS: Total 15 Programs (from Loop, Class and Method based Programs), Chapter 8(1D arrays, 2D arrays, Strings)

PROJECT TOPICS :Total 10 Programs (from Recursion, Simple Data Structures,Inheritance.)

Project submission date 1st project :on or before 25th August 2026

Final :on or before 10th November 2026

SYLLABUS FOR UNIT TEST

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**ST. FRANCIS XAVIER SCHOOL
SYLLABUS FOR CLASS XII SCIENCE
ACADEMIC SESSION 2026 - 27
BENGALI**

Prescribed Text Book : 1. PROBONDHO O GODHYA SONKOLON, 2. KABITA SONKOLON, 3. KONI.

HALF YEARLY		REHEARSAL	
CHAPTER NO./TITLE	TOPICS	CHAPTER NO./TITLE	TOPICS
PROSE		PROSE	
7	আদাব	9	একটি তুলসী গাছের কাহিনী
8	লছমেনের মা	10	না পাহারার পরীক্ষা
POEM		POEM	
7	যদি নির্বাসন দাও	9	স্বাধীনতা তুমি
8	রাস্তা কারোর একার নয়	10	নুন
KONI	পরিচ্ছেদ ৯-১২	KONI	পরিচ্ছেদ ১৩-১৪
			FULL SYLLABUS as per ISC
GRAMMAR		GRAMMAR	
	রচনা		রচনা
	বোধপরীক্ষণ,বাক্য পরিবর্তন ,বাচ্য পরিবর্তন,অনুকার অব্যয়		বোধপরীক্ষণ,বাক্য পরিবর্তন ,বাচ্য পরিবর্তন,অনুকার অব্যয়
	এককথায় প্রকাশ ,বাগধারা , বানান /বাক্য শুদ্ধ,সাধু চলিত ,উক্তি পরিবর্তন।		এককথায় প্রকাশ ,বাগধারা , বানান /বাক্য শুদ্ধ,সাধু চলিত ।

PROJECT TOPIC:- কৃত্রিম বুদ্ধিমত্তার যুগে পড়াশুনা ও দৈনন্দিন
জীবনে প্রযুক্তির প্রভাব।

PROJECT TOPIC:-১৯৭১ সালের মুক্তিযুদ্ধের প্রেক্ষাপটে রচিত স্বাধীনতা 'তুমি
কবিতায়' কবি স্বাধীনতার স্বরূপকে কিভাবে প্রকাশ করেছেন -তা আলোচনা করো।

Project submission date :HY project : on or before 30.06.26

Project submission date :Final project : on or before: 31.07.26

SYLLABUS FOR UNIT TEST

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ST. FRANCIS XAVIER SCHOOL
SYLLABUS FOR CLASS XII SCIENCE
ACADEMIC SESSION 2026-27
HINDI

Prescribed Text Book : गद्य संकलन, काव्य मंजरी, आषाढ़ का एक दिन, व्याकरण मंजूषा

HALF YEARLY		REHEARSAL	
CHAPTER NO. /TITLE	TOPICS	CHAPTER NO. /TITLE	TOPICS
गद्य संकलन		गद्य संकलन	
7	क्या निराश हुआ जाए -हजारी प्रसाद द्विवेदी	9	संस्कृति क्या है -रामधारी सिंह दिनकर
8	भक्तिन- महादेवी वर्मा	10	मज़बूरी - मन्नू भंडारी
काव्य मंजरी		काव्य मंजरी	
1	साखी - कबीरदास	9	बादल को घिरते देखा है - नागार्जुन
8	उद्यमी नर -रामधारी सिंह दिनकर	10	अँधेरे का दीपक - हरिवंश राय बच्चन
आषाढ़ का एक दिन व्याकरण	अंक 1,2,3 अशुद्ध वाक्य को शुद्ध करना मुहावरों का वाक्य में प्रयोग करना निबंध लेखन,अपठित गद्यांश	आषाढ़ का एक दिन व्याकरण	Whole syllabus of class XI and XII अंक 1,2, 3 अशुद्ध वाक्य को शुद्ध करना मुहावरों का वाक्य में प्रयोग करना निबंध लेखन ,अपठित गद्यांश
PROJECT TOPICS: अँधेरे का दीपक आशा और सकारात्मकता का प्रतीक हैं। कवि का परिचय देते हुए कुछ प्रेरणादाई कहानियाँ लिखें जो हमे सकारात्मक रहने की प्रेरणा देता है।		PROJECT TOPICS प्रेमचंद का परिचय देते हुए पुत्र प्रेम के मुख्य पात्रों का चरित्र चित्रण करें।	

Project submission date: 1st project :on or before 13th July 2026

Final project :on or before 13th July 2026

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