Gems Akademia
International School

SYLLABUS GRADE X

SESSION: 2022-23

Term I Syllabus:

Group I:

Syllabus 2022 - 2023

CLASS X

ENGLISH LANGUAGE

A. Aims and Objectives:

- To develop and integrate the use of the four fold language skills of listening, speaking, reading and writing,
- build up the ability to communicate effectively by mimicking in the classroom what happens in real life communication,
- enrich their vocabulary,
- develop correct pronunciation skills,
- grasp a functional understanding of grammar, structure and idiom of the language,
- comprehend a given passage independently,
- think independently and present their ideas suitably.

B. Topics:

TERM I

1. Composition – Descriptive, First Person Narrative, Story Writing, Argumentative Writing, Picture Composition
2. Letter Writing – Formal and Informal
3. Notice and Email Writing
4. Comprehension
5. Functional Grammar - Tenses, Prepositions and Phrasal Verbs, Transformation of Sentences, Synthesis of Sentences
6. Internal Assessment – Aural and Oral

ENGLISH LITERATURE

A. Aims and Objectives:

- Develop and integrate the use of the four fold language skills of listening, speaking, reading and writing,
- develop spellings based on the lessons,
- build new vocabulary drawn from the lesson,
- develop an appreciation for literature,
- demonstrate expertise in giving an appropriate account of the prose/poem,
- develop correct pronunciation skills,
- develop skills of prediction, synthesis, reflection and critical thinking,
- appreciate and apply some of the poetic licence as used by the poet in the present and related poems,
- understand the text with due emphasis on interpretation and evaluation

B. Topics:

TERM I

DRAMA: The Merchant of Venice – William Shakespeare

- Act III - Scene I to V,
- Act IV - Scene I & II
- Act V – Scene I

(Revision of Grade IX syllabus – Act I, Act II)

POETRY: Treasure Trove

- The Bangle Sellers
- The Patriot
- Abou Ben Adhem
- I Know why the Caged Bird Sings

(Revision of Grade IX Syllabus – Heart of a Tree, The Cold Within, After Blenheim, Television, Daffodils)

PROSE: Treasure Trove

- The Little Match Girl
- The Blue Bead
- My Greatest Olympic Prize

(Revision of Grade IX Syllabus – A Horse and Two Goats, Chief Seattle's Speech, Old Man at the Bridge, Hearts and Hands, A Face in the Dark, An Angel in Disguise)

C. Activities/ Projects:
As per Council Syllabus

Second Language:

BENGALI

GRADE: X (ICSE)

TERM – I

Sl No	TOPIC
১	নাম
২	গন্ধটা খুব সন্দেহজনক
৩	একই শব্দের ভিন্ন অর্থের প্রয়োগ
৪	বাচ্য পরিবর্তন
৫	জাম্বো: প্রথম দৃশ্য, তৃতীয় দৃশ্য
৬	বাগধারা
৭	এক কথায় প্রকাশ
৮	বাক্য পরিবর্তন

৯	ছেদ চিহ্ন
১০	সাধু ও চলিত ভাষা
১১	প্রবন্ধ রচনা
১২	পত্র রচনা
১৩	বোধ পরীক্ষণ
১৪	উক্তি পরিবর্তন
১৫	শুদ্ধ বানান
১৬	চিত্র পর্যবেক্ষণ

HINDI

GRADE: X (ICSE)

TERM - I

Sl No	TOPIC
1.	**भिक्षुक**
2.	**विनय के पद**
3.	**मातृ मंदिर की ओर**
4.	**स्वर्ग बना सकते हैं**
5.	**काकी**
6.	**भेड़ और भेड़िया**
7.	**दो कलाकार**
8.	**बात अठन्नी की**
9.	**पत्र लेखन (ओपचारिक तथा अनौपचारिक)**
10.	**निबंध लेखन**
11.	**अपठित गद्यांश**
12.	**व्याकरण – सम्पूर्ण (According to ICSE Board syllabus)**
18.	**वाक्य परिवर्तन**

HISTORY AND CIVICS

GRADE X (ICSE)

Term - I or Half Yearly

CIVICS

1) The Union Parliament
2) The Union Executive: President and Vice President
3) The Union Executive Prime Minister and Council of Ministers

HISTORY

1) The First War of Independence (1857)
2) Factors Leading to the Growth of Nationalism and Foundation of the Indian National Congress
3) Objectives and methods of Struggle of the Early Nationalists
4) Second Phase of the Indian National Movement: Partition of Bengal and Other Developments
5) Muslim League and its Objectives
6) National Movement During the First World War
7) National Movement (1919 -1934)
8) The Cripps Mission and the Quit India Movement
9) Subhas Chandra Bose, Forward Bloc and the Indian National Army
10) Independence and Partition of India

GEOGRAPHY

A. Aims and Objectives:

¬ To develop an understanding of terms, concepts and principles related to Geography.

¬ To explain the cause-effect relationships of natural phenomena.

¬ To understand the use of natural resources and development of regions.

¬ To acquire knowledge of and appreciate the interdependence of nations and different regions of the world.

¬ To know the availability of resources, understand, explain their uses and appreciate the problems of development in India.

¬ To understand and encourage human efforts made to conserve and protect the natural environment.

¬ To acquire practical skills related to the meaning and use of maps and their importance in the study of Geography.

B. Topics:

1. EARTH AS A PLANET.
2. EARTH AS A GLOBE.
3. MOTIONS OF THE EARTH.
4. STRUCTURE OF THE EARTH.
5. LANDFORMS OF THE EARTH.
6. MATERIALS OF THE EARTH'S CRUST.
7. VOLCANOES
8. EARTHQUAKES
9. WEATHERING AND DENUDATION.
10. MOVEMENTS OF THE OCEANS.
11. MAP WORK:WORLD

Group II:

SCIENCE: (Physics, Chemistry, Biology, Mathematics), Economics and Environmental Science.

PHYSICS

Syllabus

Grade X

A. Aims and Objectives:

- To acquire knowledge and understanding of the terms, facts, concepts, definitions, laws, principles and processes of Physics.
- To develop skills in practical aspects of handling apparatus, recording observations and in drawing diagrams, graphs, etc.
- To develop instrumental, communication, deductive and problem solving skills.
- To discover that there is a living and growing Physics relevant to the modern age in which we live.

THEORY SYLLABUS

B. Topics:

Term - I

1. Force

(i) Turning forces concept; forces in equilibrium; centre of gravity, (discussions using simple examples and simple direct problems).
(ii) Uniform circular motion.

2. Work, Power and Energy

(i) Work, Energy, Power and their relation with force.
(ii) Different types of energy (e.g., Chemical Energy, Mechanical Energy, Heat Energy, Electrical Energy, Nuclear Energy, Sound Energy, Light Energy).
(iii) Principle of conservation of energy.

3. Machines

(i) Machines as force multipliers; load, effort, mechanical advantage, velocity ratio and efficiency.
(ii) Simple treatment of Levers
(iii) Pulley systems showing the utility of each type of machine: Single fixed, single movable, block and tackle: MA, VR and η in each case.

4. Refraction of Light at Plane Surfaces

(i) Refraction of light through a glass block and a triangular prism, qualitative treatment of simple applications such as real and apparent depth of objects in water and apparent bending of sticks In water. Applications of refraction of light.
(ii)Total internal reflection; critical angle; examples in triangular glass prism; comparison with reflection from a plane mirror (qualitative only). Application of total internal reflection.

5. Refraction through a Lens

Lenses: (converging and diverging) including characteristics of images formed (using ray diagrams only), magnifying glass, location of images using ray diagrams and thereby determining magnification.
Power of a Lens: (Concave and Convex only), simple direct numerical problems.
Magnifying glass or Simple Microscope, location of Image and Magnification from ray diagram only.
(Formula and Numerical Problems not included). Application of Lenses.

6. Spectrum:

(i) Using a triangular prism to produce a visible spectrum from white light;

(ii) Electromagnetic spectrum.

7. Sound

(i) Reflection of sound waves; echoes, their use; simple numerical problems on echoes.

(ii) Natural vibration, damped vibration, forced vibration and resonance- a special case of forced vibration.

(iii) Loudness, pitch and quality of sound: Meaning of the terms and factors affecting them, no examples.

8. Current Electricity

(i) Ohm's Law, concept of e.m.f., potential difference, resistance; resistances in series and parallel; internal resistance. Simple numerical problems using formula for resistances in series and parallel (simple network involving not more than four external resistors in a circuit).

(ii) Electrical power and energy.

9.Household Circuits

Household circuits- main circuit; switches, fuses, earthing, safety precautions, three pin plugs colour coding of wires.

10.Calorimetry

(i) Calorimetry: Meaning, Specific heat capacities, Principle of method of mixtures, numerical problems on Specific heat capacity using heat lost and gain and the method of mixtures.

(ii) Latent heat: loss and gain of heat involving change of state for fusion only.

CHEMISTRY

Syllabus

Grade X

Term - I

Chapters -

Topics:

1. Periodic Table
2. Chemical Bonding
3. Acids, Bases and Salts
4. Analytical Chemistry
5. Mole Concept and Stoichiometry

6. Electrolysis
7. Organic Chemistry
8. Ammonia
9. Hydrogen chloride
10. Nitric acid

BIOLOGY

Syllabus

Grade X

A. Aims and Objectives:

- Acquire the ability to observe experiment, hypothesize, infer, handle equipment accurately and make correct recordings.
- Develop an understanding of the inter-relationship between sustainability and environmental adaptations.
- Acquire the knowledge of the economic importance of plants and animals.
- Develop an understanding of the interdependence of plants and animals so as to enable pupils to acquire a clearer comprehension of the significance of life and its importance in human welfare.
- Understand the capacities and limitations of all the biological and economic activities so as to be able to use them for a better quality of life.
- Develop a keen civic sense.

B. Topics:

TERM - I

1. Structure of Chromosomes, Cell cycle and Cell division

a) Cell cycle- Interphase and mitotic phase

b) Cell division: i) Mitosis and its stages ii) Basic understanding of meiosis

c) Structure of chromosome- understanding of chromatin, chromatid, centromere and gene structure of DNA

2. Genetics

a) Mendel's law of inheritance

b) Sex linked inheritance of diseases

3. Absorption by Roots

a) Imbibition, diffusion and osmosis

b) Osmotic pressure, root pressure, turgidity, flaccidity, plasmolysis and deplasmolysis

c) Absorption of water and minerals

d) Active and passive transport

e) Ascent of sap

4. Transpiration

a) Process and significance

b) Ganong's potometer and its limitations

c) Factors affecting rate of transpiration

d) Experiments on transpiration

e) Guttation and bleeding

5. Photosynthesis

a) Process and its importance to life

b) Experiments on photosynthesis

c) Carbon cycle

6. Chemical Coordination in Plants

a) Plant growth regulators

b) Tropic movements in plants

7. The Circulatory system

a) Blood and lymph

b) The structure and working of the heart

c) Blood vessels and circulation of blood

d) Lymphatic system

8. The Excretory system

a) Introduction to the excretory organs

b) Parts of the urinary system

c) Structure and function of the kidneys

d) Blood vessels associated with kidneys

9. The Nervous system

a) Structure of neuron

b) Central, autonomous and peripheral nervous system

c) Brain and spinal cord

d) Reflex action

10. Sense organs

a) Eye: structure, functions, defects and corrective measures

b) Ear: parts and functions of the ear

C. Activities/Projects

- **Practical work**
- **Group discussion**

ECONOMICS

Syllabus
Grade X

Term - I

Chapters - 1. The productive mechanism.

2. Land

3. Labour

4. Capital

5. Enterprise

6. The theory of demand.

7. The theory of supply.

8. Alternative market structures.

9. Money and banking (only money portion in Term I).

Project topics for grade XB ECONOMICS:

1. Bioenergy, pollution and economic growth.

MATHEMATICS

Syllabus

GRADE X

TERM - I

1. Linear Inequations
2. Factorisation of Polynomials
3. Matrices
4. Quadratic Equations with problems
5. Goods and Service Tax
6. Banking
7. Arithmetic Progression & Geometric Progression
8. Trigonometry
9. Similarity
10. Circle
11. Measure of Central Tendency.
12. Graphical Representation: Histogram & Ogive.
13. Probability

Project : Two projects to be done as per ICSE syllabus.

ENVIRONMENTAL SCIENCE

SYLLABUS

GRADE X

Term - I

A. Aims and Objectives:

- Acquire knowledge of the functioning of the ecosystem.
- Develop an understanding that human beings, plants and animals are part of a natural phenomenon and are interdependent.

- Understand the importance of biodiversity and its conservation.
- Develop an awareness of the need and responsibility to keep the natural system in a condition that it sustains life; understanding the need for sustainable development.
- Develop sensitivity in personal attitude to environmental issues.
- Develop a keen civic sense.

B. Topics:

Term I

1. Controlling Air Pollution

a) From domestic combustion

b) From industries

c) From vehicles

2. Addressing Population

a) The link between growing population and environmental degradation

b) The demographic transition

c) Strategies for controlling growth of population

d) Development framework for poverty alleviation

3. Managing the Urban environment

a) Urbanisation – a challenge to the future

b) Planning environmental improvement

c) Rural development to counter migration

d) Development of secondary cities to counter migration

e) Community participation and contribution of private enterprises

4. Managing Soil and Land

a) Conserving soil

b) Land reforms

c) Integrated rural development

d) Role of women and community in conservation

e) Combating deforestation

f) Managing forest grazing

g) Alternatives to timber

5. Food

a) Sustainable agriculture

b) Problem of global food security, food aid.

6. Biodiversity

a) Biodiversity at risk due to human actions

b) Conserving our genetic resource: in-situ and ex-situ; harvesting wildlife.

c) Conservation strategies at national and international levels.

7. Energy

a) Fossil fuels used to produce electricity

b) Nuclear energy

c) A sustainable energy future

8. Waste

a) Solid waste: the throwaway society

b) Solid waste: options for the future

C. <u>Activities/Projects</u>

- Group discussion
- Quiz
- Research work

Group III:

Application: (Commercial Application, Computer Application), Home Science and Art

COMMERCIAL APPLICATION

GRADE X

A. Aims and Objectives:

- Ability to discriminate between different facts and different concepts in commercial operations.
- Develops an ability to critically examines new developments in the field of business, trade and commerce
- Discuss social, economic and commercial problems, with their fellows, teachers and parents.
- Ability to locate, classifies, compare and contrast commercial information.

B. Topics:

TERM I

- Markets and Marketing
- Marketing Mix – 4 P's
- Advertising and Brand Promotion
- Sales and Selling Process
- Generally Accepted Accounting Principles (GAAP)
- Financial Accounting and Reporting
- Banking and Bank Transactions

Project:

- Make a report on the new forms of markets and marketing such as tele-markets (marketing through phones), home-shopping (catalogues like Burlingtons, etc.), Direct Marketing (example Eureka-forbes). What according to you is their relevance in future and why?

- Study the marketing strategies of a service sector company such as a courier service and a production company such as a pen manufacturer. Explain the differences and similarities in both the strategies. What do you think is the reason for these differences?
- Study the working of the commercial banks in India by studying the working of the branch office of any Public sector commercial bank such as Canara bank, SBI, Bank of Boroda, etc.
- Write an essay on the role of the Central Bank (Reserve Bank of India) in any economy with special references to the Indian scenario.

COMPUTER APPLICATION

Grade X

A. Aims and Objectives:

- To empower students by enabling them to build their own applications.
- To introduce students to some effective tools to enable them to enhance their knowledge, broaden horizons, foster creativity, improve the quality of work and increase efficiency.

B. Topics:

Term 1

1. Revision of Class IX Syllabus
2. Class as the Basis of all Computation
3. User - defined Methods
4. Constructors
5. Library classes
6. Encapsulation
7. String Handling

C. Activities:

INTERNAL ASSESSMENT - Programming Assignments

1. This segment of the syllabus is totally practical oriented. The students should complete a minimum of 20 laboratory assignments during the whole year to reinforce the concepts studied in class.

HOME SCIENCE

GRADE – X

Term - I

CHAPTERS

1. Budgeting and savings
2. Space organisation in the kitchen
3. Home furnishings
4. Milestones of development
5. Role of family, peer group and school
6. Learning disabilities in children
7. Balanced diet
8. Meal planning

ART

Grade X (ICSE)

A. Aims and Objectives:

To encourage creative expression and interest in the World of Art.

To develop the power of aesthetic appreciation and artistic values through the study of Art

B. Topics:

Term 1

Continue with the syllabus of Class IX (Revision)

1. Phad Painting / Cartoon Drawing / Poster Making
2. Tie and Dye / Block Printing / Paper Collage
3. Drawing and/or Painting from Still Life
4. Drawing and/or Painting from Nature

Activities (Continuous Evaluation)

Candidates will be required to submit assignments containing the practical works related to syllabus throughout the year.

Syllabus is planned according to the number of working days in the Academic Calendar 2022 - 23. Syllabus is subject to change due to unforeseen circumstances.