WEST BENGAL COUNCIL OF HIGHER SECONDARY EDUCATION
VIDYASAGAR BHAVAN
9/2 , BLOCK –DJ , SECTOR II , SALT LAKE
KOLKATA – 700091

Memo No : L/PR/089/2025 **Date : 28/02/2025**

NOTIFICATION

Kind Attn : All Heads of affiliated Madhyamik Institutions , Madhyamik examinees of 2025

As you know, the Council has already introduced several subjects based on Computer Science and its applications namely Artificial Intelligence and Data Science, Cyber Security and Applied Artificial Intelligence in the H.S Curriculum. The Syllabus of the two existing subjects Modern Computer Application and Computer Science have been upgraded to keep them relevant and contemporary. In this situation, the Council feels that a basic warm-up course is needed for the Madhyamik Examinees of 2025, who are interested in taking up any one of the subjects among Modern Computer Applications , Computer Science , Artificial Intelligence and Data Science , Applied Artificial Intelligence and Cyber Security. Moreover, the Council feels that a short guidance program on Physics , Chemistry , Biology and Statistics will also be useful for the students. Along with this, the Council is also offering a short career guidance program based on several subject combinations in the H.S curriculum.

The Council is going to conduct a Bootstrap Program on the following topics for the Madhyamik Examinees of 2025 in offline or online mode, as opted by the students.

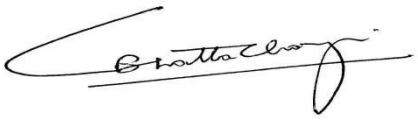
- **H.S Subjects based on Computer Science and Applications- 3 days workshop**
- **Physics - 1 day workshop**
- **Chemistry - 1 day workshop**
- **Biology - 1 day workshop**
- **Statistics - 1 day workshop**
- **Career Guidance based on Subject Combinations under H.S curriculum - 3 hours workshop**

[Program Contents in details mentioned later]

Offline mode option will be provided for students of North 24 Parganas, South 24 Parganas, Kolkata, Howrah only

Process of Application : A Google Form will be floated on 4th of March,2025. Link to the Google form will be provided on the Council website. Interested students will have to select topic(s) and mode of orientation and submit the Google Form with a requisite Registration fee.

Registration fee per topic for online mode : Rs. 50
Registration fee per topic for offline mode : Rs. 100
Based on applications submitted through the Google form, the dates of offline/online programs will be decided and the students will be notified at their registered Email id.
All participants will be provided with a participation certificate at their registered Email id.



PRESIDENT
West Bengal Council of Higher Secondary Education

COMPUTER SCIENCE AND ITS APPLICATIONS		
Day	Topics	Timing
1	Introductory session- New Subject introduction in H.S curriculum with special emphasis on the subjects related to Computer Science	11.30 AM to 12 Noon
	Computer Fundamentals *History of computer . Basic Computer hardware. Input and Output Devices. Basic Computer Architecture . Memory and CPU. Types of computer (workstation, desktop, smartphone, embedded system etc.). Overview of Software (system software and Application software with examples). Operating System. Types of Operating System. Bit, Byte and Word, Number system (Base, Binary , Decimal , Octal , Hexadecimal). Basics of Computer Programming (three levels: high level language , assembly language , machine language). Compiler & Interpreter.*	12 Noon to 2 PM
	Lunch Break	2 PM to 3 PM
	Computer Networking Fundamentals *What do Computer Networks do? Network Topologies- Advantages and Disadvantages. Networking Protocols.*	3 PM to 4.30 PM
2		
	Basic Concept of Programming , Algorithms and Flowcharts Concept of Constants , Variables , Operators , Loops , Functions used in Programming with C. Some Basic Programs	11 AM to 1 PM
	Basics of Web Design and Web Technology *key concepts of visual web design. basics of HTML . CSS & other terms related to Web Technology.*	1 PM to 2 PM
	Lunch Break	2 PM to 3 PM
	Basic Concept of Object-oriented Programming. Difference between C and C++, Java , Python	3 PM to 4.30 PM
3		
	Basic Python Programming *Fundamentals. Identifiers. Operators. Control Statements. Loop Control. Collections. User Defined Functions.*	11 AM to 1 PM
	Basic Concept of Artificial Intelligence , Data Science and applications of Artificial Intelligence .	1 PM to 3 PM

BIOLOGY	
Addressing from council	11.15am-11.30am
SESSION 1	11.30am-1.30pm
Biological Classification Plant kingdom & Animal Kingdom Morphology & Anatomy of Flowering Plants Cell & Biomolecules Cell Cycle & Cell Division Plant Physiology	
LUNCH BREAK	1.30pm-2pm
SESSION 2	2pm-3pm
Human Physiology	
TEA BREAK	3-3.15pm
SESSION 3	3.15pm-4.15pm
Principles of Inheritance & Molecular biology	
QUESTION –ANSWER Session	4.15 pm-5 pm

CHEMISTRY	
Addressing from the Council	11.15 AM - 11.30 AM
SESSION 1	11.30 AM - 1.30 PM
• Laws of chemical combinations. • Mole concept and molar mass, volume • Empirical and Molecular formula. • Bohr's model and its limitations • Concept of shell and sub-shells, orbitals • Modern periodic law and the present form of the periodic table • Periodic trends in properties of elements – atomic radii, ionization enthalpy, electron gain enthalpy, electronegativity, valency.	
LUNCH BREAK	1.30 PM - 2 PM
SESSION 2	2 PM - 3 PM
• Concept of oxidation and reduction, redox reactions, oxidation number , balancing of reactions in terms of change in oxidation number • Chemical and Ionic equilibrium , dynamic nature of equilibrium , equilibrium constant and its significance	
TEA BREAK	3 PM – 3.15 PM
SESSION 3	3.15 PM – 4.15 PM
• Organic Chemistry : some basic principles General Introduction, classification and IUPAC nomenclature of organic compunds	
QUESTION-ANSWER SESSION	4.15 PM – 5 PM

PHYSICS	
Addressing from the Council	11.15 AM - 11.30 AM
SESSION 1	11.30 AM - 1.30 PM
• Basic Mathematical Operation (Especially about trigonometrical function and introduction of calculus) Dimensional analysis and its applications. • Motion in a straight line, position - time graph, speed and velocity. • Graphical analysis: position - time and velocity - time graph and calculation of relevant quantities • Introduction of Vector algebra, position and displacement vectors, concept of null, equal and parallel/ anti parallel and unit vector. Vector operation – addition, multiplication. Concept of vector subtraction – in connection of relative velocity. • Newton's laws of motion. Derivative form of the laws. Momentum, impulse and concept of impulsive force. • Law of Conservation of Linear Momentum and its application • Dynamics of uniform circular motion, centripetal force and centrifugal reaction force, centrifugal force – a pseudo force.	
LUNCH	1.30 PM - 2 PM
SESSION 2	2 PM - 3 PM
• kinetic energy and Potential energy • Work - energy theorem, power. • Conservative forces, conservation of mechanical energy (kinetic and potential energies). • The universal law of gravitation. Acceleration due to gravity and its variation with altitude, depth and rotation of earth. Concept of Kepler's Laws of planetary motion.	
TEA BREAK	3 PM - 3.15 PM
SESSION 3	3.15 PM - 4.15 PM
• Thermal equilibrium and definition of temperature, Zeroth law of thermodynamics. • Kinetic theory of gases, RMS speed of gas molecules, degrees of freedom. • Concept of pressure, kinetic energy and temperature in the light of kinetic theory, ideas of gas laws in the light of kinetic theory of gases.	
QUESTION - ANSWER SESSION	4.15 PM - 5 PM

STATISTICS	
Addressing from the Council	11.15 AM - 11.30 AM
SESSION 1	11.30 AM - 1.30 PM
• Introduction: Meaning of statistics Why do we study Statistics? • Importance ofstatistics in different fields of study	
LUNCH	1.30 PM - 2 PM
SESSION 2	2 PM - 3 PM
• Four steps involved in Statistics Data Collection Presentation Analysis of collected data Conclusion	
TEA BREAK	3 PM - 3.15 PM
SESSION 3	3.15 PM - 4.15 PM
• Different opportunities of Statisticians • New Development [Data Science , AI , Cryptography , Bio-statistics , Machine Learning]	
QUESTION - ANSWER SESSION	4.15 PM - 5 PM