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

Memo No :   L/PR/154/2024   Date : 01/04/2024

NOTIFICATION

Kind Attn : All Heads of affiliated H.S Institutions

As you know, the Council has already introduced Artificial Intelligence and Data Science as two new subjects in the H.S Curriculum from the academic year 2023-24. Applied Artificial Intelligence and Cyber security are the two new subjects going to be introduced from the academic year 2024-25. 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 2024, who are interested in taking up any one of the subjects amongst Modern Computer Applications , Computer Science , Artificial Intelligence , Applied Artificial Intelligence , Data Science and Cyber Security.

The undersigned is pleased to suggest a Computer Course of short duration for the Madhyamik Examinees of 2024 from your school, which would give the students a basic platform to take up any one of the Courses as mentioned earlier. This Course has been named as " **Bootstrap Program** "   and the details of the Course has been attached herewith.

Please note that, the Schools are only being suggested [not being compelled] to conduct this course for the students who have appeared Madhyamik Examination in 2024 and are interested in taking up any one of the above-mentioned subjects. The months of April and May can be used for this Course before the start of core H.S Curriculum. Theory classes may be conducted in Class room or in online mode, as per convenience of the school.

In case a certain school is not in a position to conduct this Course, the study materials provided by the Council may be shared amongst the interested students. The student can at least do some self-study with the help of these study materials and prepare themselves for the H.S Curriculum.

If the school is planning to conduct this course as suggested by the Council, the Head of the Institution is being requested to drop a mail at **as_academic@wbchse.net** mentioning the Name of the School, Date Schedule of the Course , expected number of participants and any suggestions/ recommendations in this regard. The Council is planning to publish a detailed report on this Course mentioning the Name of the participating Schools on our website and in Sansad Parichiti 2024.

PRESIDENT
West Bengal Council of Higher Secondary Education

Why the Name ?

In the language of Computer Science, a **Bootstrap program** is the first code that is executed when the Computer System is started. The entire operating system depends on the bootstrap program to work correctly as it loads the operating system.

The Council feels that a basic warm-up course is needed for the Madhyamik Examinees of 2024, who are interested in taking up any one of the subjects amongst Modern Computer Applications , Computer Science , Artificial Intelligence , Applied Artificial Intelligence , Data Science and Cyber Security. This Course will work as a Bootstrap Program before the beginning of their core H.S curriculum which would introduce them with some basic terms related to Computer Science and give them a preliminary idea about the important concepts and methodologies involved in the subject. This Course will also give them a basic idea about the objectives , contents and practical importance of the new subjects being introduced by the Council. This Course will have 14 classes each of 1.5 hours to 2 hours duration, comprising of both Theory and Practical Classes.

Course Content :

Class 1	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).*	Theory
Class 2	Computer Fundamentals (Continued) *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 , definition and block diagrams). Compiler & Interpreter.*	Theory
Class 3	Computer Networking Fundamentals *What do Computer Networks do? Network Topologies-Advantages and Disadvantages. Networking Protocols.*	Theory
Class 4	Basics of Web Design and Web Technology *key concepts of visual web design. basics of HTML . CSS & other terms related to Web Technology.*	Theory
Class 5	Basic Concept of Programming , Algorithms and Flowcharts	Theory
Class 6	Concept of Constants , Variables , Operators , Loops , Functions used in Programming with C.	Theory
Class 7	Programming with C (Continued)	Theory
Class 8	Some Basic Programs (Hands-on session)	Practical
Class 9	Basic Concept of Object-oriented Programming. Difference between C and C++, Java , Python	Theory
Class 10	Basic Python Programming *Fundamentals. Identifiers. Operators. Control Statements. Loop Control. Collections. User Defined Functions.*	Theory

Class 11	Hands-on session on Python Programming	Practical
Class 12	Basic Concept of Artificial Intelligence and Data Science *Comparison between AI and Data Science. AI , ML , DL- Basic Concepts.* *Supervised and Unsupervised Learning. Use of Statistics in Data Science.*	Theory
Class 13	Applications of Artificial Intelligence and Data Science *Intelligent Agent. Natural language Processing. Large Language Model.* *Impact of AI on Medical Science, E-commerce. Impact of Data Science on* *Business Analytics and future predictions.*	Theory
Class 14	Cyber Security and Use of AI *Threats and Attacks. Malware. Basic idea of Plain Text and Cipher Text.* *Introduction to Cryptography. Network Security. Cloud Security.* *Challenges in Cyber security.*	Theory

Salient Features :

- Study Material for this course will be available under "Download Center" of the Council Website www.wbchse.wb.gov.in within 20th of April,2024.
- Exercises will be provided for practice during the Practical Classes.
- Theory classes may be conducted in Class room or in online mode, as per convenience of the school.
- In case of any guidance or assistance needed, Subject teacher or Head of the Institution may contact **as_academic@wbchse.net** .