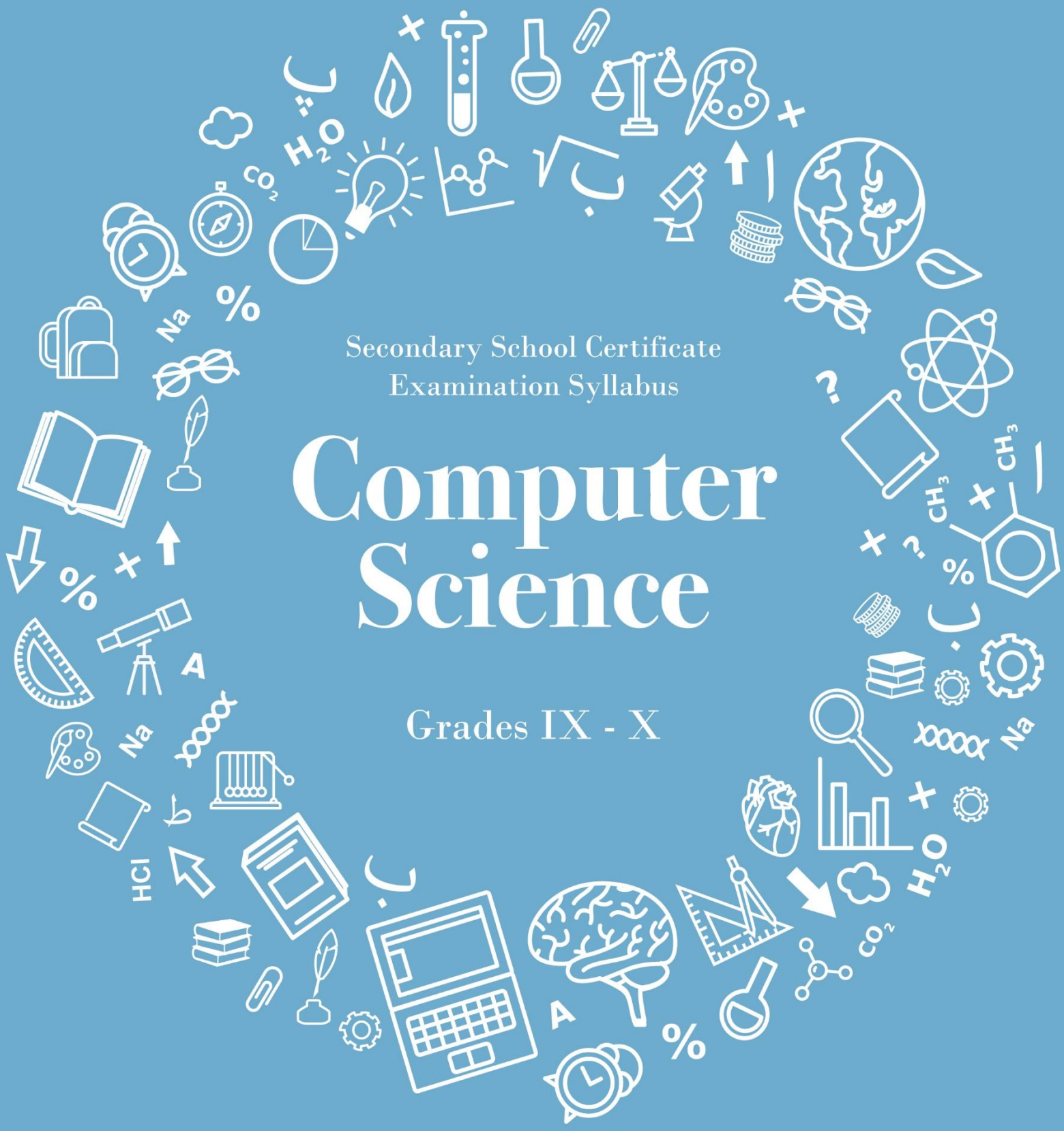
آغا خان یونیورسٹی ایگزامینیشن بورڈ

AGA KHAN UNIVERSITY EXAMINATION BOARD



Secondary School Certificate
Examination Syllabus

Computer Science

Grades IX - X

(Based on New National Curriculum 2022-2023)

FOR ANNUAL EXAMINATION 2026 AND ONWARDS

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Secondary School Certificate Examination Syllabus

COMPUTER SCIENCE

GRADES IX-X

This syllabus will be examined in both Annual and September Examination sessions from Annual Examinations 2026 for Grade IX and Annual Examinations 2027 for Grade X

FOR ANNUAL EXAMINATION 2026 AND ONWARDS

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Preface

Established in 2002 through the Pakistan government's ordinance, the Aga Khan University Examination Board (AKU-EB) is country's first private autonomous qualification awarding body for Secondary School Certificate (SSC) and Higher Secondary School Certificate (HSSC). Its vision is to be a model of excellence and innovation in education in Pakistan and the developing world.

AKU-EB achieves its vision by developing examination syllabi which inculcates conceptual thinking and higher order learning and is aligned with the National Curriculum and mapped with provincial curricula and international standards. AKU-EB revises its syllabi periodically to support the needs of students, teachers and society.

The aims of the syllabus review of SSC and HSSC are to:

- Ensure continued compatibility with the goals of the National Curriculum of Pakistan.
- Review the content for inclusion of new knowledge and deletion of obsolete knowledge.
- Review the content for clarity and relevance as per the changing needs of students, teachers and society.
- Enhance and strengthen continuation and progression of content both within and across grades IX - XII (SCC and HSSC).
- Ensure the readiness of students for higher education.

During the syllabus review, the needs of all the stakeholders were identified through a needs-assessment survey. Students and teachers of AKU-EB affiliated schools from across Pakistan participated in the survey. Thereafter, a revision panel, which consisted of examiners, teachers of affiliated and non-affiliated schools, teacher trainers and university academicians, reviewed and revised the syllabus following a planned, meticulous and standardised syllabi review process.

The development of the revised syllabus has been made possible by the creativity and relentless hard work of the Curriculum and Examination Development unit and the constant support provided by all the other units of AKU-EB. We are particularly thankful to our Principal Syllabus Reviewers, Syllabus Revision Panelists and all other reviewers for their contribution. We are also thankful to all the students and teachers who took part in the needs-assessment survey and to the principals of AKU-EB affiliated schools who made this endeavor possible by facilitating and encouraging their teachers and students to be a part of the survey and the syllabus revision panel.

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With your support and collective hard work, AKU-EB has been able to take the necessary steps to ensure effective implementation of the National Curriculum of Pakistan through this syllabus. We are confident that this syllabus will continue to provide the support that is needed by students to progress to the next level of education, and we wish the very best to our students and teachers in implementing this syllabus.



Dr Naveed Yousuf
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Associate Professor of Practice, Educational Development, Faculty of Health Science, Aga Khan University

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Understanding of AKU-EB Syllabi

1. The AKU-EB syllabi guide the students, teachers, parents and other stakeholders regarding the topics that will be taught and examined in each grade (IX, X, XI and XII). In each syllabus document, the content progresses from simple to complex, thereby facilitating a gradual, conceptual learning of the content.

2. The topics of the syllabi are divided into subtopics and **student learning outcomes (SLOs)**. The subtopics and the SLOs define the depth and the breadth at which each topic will be taught, learnt and examined. The syllabi also provide enabling SLOs where needed to scaffold student learning.

3. Each SLO starts with an achievable and assessable **command word** such as describe, relate, evaluate, etc. The purpose of the command words is to direct the attention of teachers and students to specific tasks that the students are expected to undertake during their studies. The examination questions are framed using the same command words or their connotations to elicit evidence of these competencies in students' responses.

4. The SLOs are classified under the following **cognitive levels** of Bloom's Taxonomy: Remember (R), Understand (U), Apply and beyond [Apply (A), Analyse (An), Evaluate (E), Create (C)]. This is to facilitate effective planning for teaching, learning and assessment. In addition, some SLOs are identified as Formative Assessments (FA), where applicable.

5. Where applicable, SLOs are followed by the **Practical Activities** section to elaborate regarding the assessment in the Practical Examination.

6. The **Examination Specification** is also provided within this syllabus which elucidates the weightage of each topic in the examinations determined based on the content as well as the relevance of the topic. In addition, **Marks Distribution of Cognitive Level** is provided to explain the weight assigned based on the cognitive level.

7. To implement this syllabus, students and teachers can take support from additional materials provided by the board to its affiliated schools including **Learning Resource Guides**, **Pacing Guides** and **Model Papers**.

8. The AKU-EB syllabi for Secondary School Certificate (SSC) and Higher Secondary School Certificate (HSSC) are designed to foster not only conceptual understanding but also critical thinking and problem-solving skills. These syllabi ensure students develop the cognitive, affective and psychomotor skills essential for success at the university and beyond.

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Subject Rationale of AKU-EB Computer Science

Why study Computer Science?

Studying Computer Science undoubtedly opens doors to an impressive array of career opportunities, ranging from software development to cutting-edge artificial intelligence. This field equips you with essential problem-solving skills, critical thinking, and creativity, enabling you to tackle innovative projects that significantly impact various industries. As technology continues to shape nearly every aspect of modern life, the demand for computer science skills is skyrocketing. The ever-evolving nature of this field guarantees lifelong learning and continuous growth. Whether your passion lies in creating groundbreaking apps, analysing complex data, or building robust systems, computer science offers both intellectual fulfillment and the chance to make a tangible difference in the world. Furthermore, the potential for high salaries and job security only enhances its attractiveness, making it a compelling choice for anyone looking to make their mark in the tech industry.

Why study AKU-EB Computer Science?

Computer Science is a field of study that will help you as a student to learn theoretical and practical concepts of computation. You must have used the computer for playing games, surfing the internet, streaming videos, using media networking websites, preparing presentations and reports, etc. However, this syllabus would add to your knowledge, understanding and skills about some advanced uses of computers such as programming, web designing, computer networking, artificial intelligence, entrepreneurship, etc.

While learning through the AKU-EB syllabus of Computer Science, you will learn theoretical concepts of computer hardware and software, programming languages, data analysis and applications to solve real-life problems.

To be more specific, you will learn the following content areas in the syllabus:

- Computer Systems
- Data Communication and Computer Networks
- Web Designing
- Data and Analysis
- Computational Thinking
- Programming Languages
- Application and Impact of Computers
- Entrepreneurship

Where will it take you?

The subject will take you from simple real-life problems to different computational solutions and from basic computing technologies to emerging advanced hardware and software technologies. The set of skills learned in this syllabus will help you to select your career in the areas of computer science such as:

- Software Development
- Computer Hardware Engineering
- System Analysis and Design

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- Computer Network Engineering
- Web Development
- Web Designing
- Data Science
- Artificial Intelligence
- Machine Learning
- Mobile Applications Development
- Software Quality Assurance
- Content Creation and Blogging
- Graphic Designing

How to approach the syllabus?

The AKU-EB syllabi is carefully designed with a reader-friendly approach to ensure that students and teachers can easily comprehend it, making it functional for teaching, learning and assessment purposes. The syllabus includes the following parts:

Subject Rationale	It is an introductory document for students.
Student Learning Outcomes (SLOs)	These guide regarding the details about what must be achieved.
Exam Specification	It guides what will be expected in the examination.
Practical Activities	These include lab activities to be performed during an academic year.
Additional Resources:	
Pacing Guide	It ensures smooth transition and curricular continuity of a school's academic year. It also predicts the time and pace of syllabi implementation.
Resource Guide	It includes teaching and learning resources for students and teachers.
Model Paper	It guides regarding exam pattern, types of questions and marking scheme.
Command Word Guide	It clarifies expectations regarding the cognitive levels and skills that should be acquired by the students, and which are assessed in its examinations.

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Student Learning Outcomes of AKU-EB SSC Computer Science

Part II (Grade X)

Topics and Subtopics		Student Learning Outcomes		Cognitive Level[3]		
				R	U	A and beyond
8. Number Systems and Encoding Schemes		Students should be able to:				
8.1	Number Systems	8.1.1	describe the number system and its following types in computers: a. decimal (denary), b. binary, c. hexadecimal;		*	
		8.1.2	describe the uses of number systems and their significance in computing;		*	
		8.1.3	convert numbers between binary, decimal (denary), and hexadecimal systems accurately using conversion methods;			A
8.2	Binary Arithmetic: Addition, Subtraction, Multiplication and Division	8.2.1	apply the binary number system to solve arithmetic problems involving addition, subtraction, multiplication, and division;			A
		8.2.2	determine 1's and 2's complement of binary numbers;			A
8.3	Encoding Data Scheme Representation	8.3.1	explain the following types of coding schemes to represent data: a. ASCII, b. Unicode;		*	

[3] R = Remember, U = Understand, A = Apply and beyond [Apply (A), Analyse (An), Evaluate (E), Create (C)]

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Topics and Subtopics		Student Learning Outcomes		Cognitive Level		
				R	U	A and beyond
8.4	Introduction to Operating System	8.4.1	define Operating System (OS);	*		
		8.4.2	describe the functions of the following OS: a. memory management, b. I/ O management, c. file management, d. resource management, e. user management, f. process management;		*	
8.5	Classification and Types of Operating System	8.5.1	classify OS into single-user and multiuser OS;		*	
		8.5.2	differentiate among the following types of OS: a. batch processing system, b. time-sharing system, c. real-time system;		*	
		8.5.3	explain the following types of user interfaces provided by OS: a. Command Line Interface (CLI), e.g., DOS and UNIX, b. Menu Driven Interface (MDI), e.g., Novel c. Graphical User Interface (GUI), e.g., Macintosh, Linux and Windows;		*	
8.6	Interrupts and Buffers	8.6.1	define the following terms: a. interrupts, b. buffers;	*		
		8.6.2	differentiate between process and threads;		*	
8.7	Integrated Development Environment (IDE) Software	8.7.1	explain Integrated Development Environment (IDE) and its following features: a. code editor, b. translator, c. debugger, d. loader, e. linker.		*	

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Topics and Sub-topics	Student Learning Outcomes		Cognitive Level		
			R	U	A and beyond
9. Computational Thinking and Algorithm	Students should be able to:				
9.1 Algorithm and Flowchart	9.1.1	write algorithms to address the following types of problems: a. conditional algorithm: I. if, II. nested if, III. if else, IV. else if, V. switch, b. iteration algorithm: I. for, II. while, III. do-while, IV. nested loops, c. searching algorithm: I. linear, II. binary, d. sorting algorithm: I. selection, II. bubble;			A
	9.1.2	draw flowcharts related to SLO # 9.1.1.			A

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Topics and Sub-topics		Student Learning Outcomes		Cognitive Level		
				R	U	A and beyond
10. Programming in JavaScript		Students should be able to:				
10.1	Introduction to Programming Languages	10.1.1	differentiate between program syntax and program semantics;		*	
		10.1.2	describe the following programming languages: a. low-level languages: I. machine language, II. assembly language, b. high-level languages: I. procedural language, II. structured language, III. object-oriented language;		*	
		10.1.3	differentiate among an assembler, compiler and an interpreter;		*	
10.2	Input and Output Functions in JavaScript	10.2.1	apply the following functions to display the output: a. innerHTML, b. document.write( ), c. window.alert( );			A
		10.2.2	write a JavaScript code containing the following data types: a. String, b. Number, c. BigInt, d. Boolean, e. Undefined, f. Null;			A
		10.2.3	write a JavaScript code that uses input functions prompt( );			A

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Topics and Sub-topics		Student Learning Outcomes	Cognitive Level		
			R	U	A and beyond
10.3 Operators in JavaScript	10.3.1	write a JavaScript program to solve arithmetic problems by using arithmetic operators;			A
	10.3.2	use the following assignment operators in a JavaScript code: a. assignment operator (=), b. compound assignment operator (+ =, - =, * =, / =, % =);			A
	10.3.3	use the increment (++) and decrement (--) operators in a JavaScript code;			A
	10.3.4	use the following relational operators in a JavaScript code: a. less than (<), b. greater than (>), c. less than or equal to (< =), d. greater than or equal to (> =), e. equal to (= =), f. strict equal to (equal value and equal type) (= = =), g. not equal to (! =), h. strict not equal to (not equal value and not equal type) (!= =);			A
	10.3.5	use the following logical operators in a JavaScript code: a. AND (&&), b. OR (‖), c. NOT (!);			A
	10.3.6	differentiate among the assignment operator (=), equal to operator (= =) and identity operator (= = =);		*	
	10.3.7	use the conditional (ternary) operator in a JavaScript code;			A
	10.3.8	simplify an expression by using the order of precedence of operators;			A

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Topics and Sub-topics		Student Learning Outcomes		Cognitive Level		
				R	U	A and beyond
10.4	Conditional Control Structure	10.4.1	describe control structures and their types;		*	
		10.4.2	explain the structure of **if**, **if-else**, **nested if-else,** or **if-else-if** and **switch** statement;		*	
		10.4.3	write JavaScript code to implement the following statements: a. **if** statement, b. **if-else** statement, c. **if-else** or **if-else-if,** d. **switch** statement;			A
		10.4.4	compare **if**, **if else**, **if-else-if,** and **switch** statements;		*	
10.5	Loop Structure	10.5.1	describe loop and its different types;		*	
		10.5.2	explain the structure of **for**, **while,** and **do while** loop in JavaScript;		*	
		10.5.3	write JavaScript code to implement the following loops: a. **for** loop, b. **while** loop, c. **do while** loop, d. **nested** loop;			A
		10.5.4	write the output of a given program having a loop and selection structures;			A
		10.5.5	use **break** and **continue** statements in a JavaScript code;			A

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Topics and Sub-topics		Student Learning Outcomes	Cognitive Level		
			R	U	A and beyond
10.6 Introduction to Arrays	10.6.1	explain the array concerning the array name, size, index number, and arrangement of elements in the memory;		*	
	10.6.2	write JavaScript code to declare and initialise a one-dimensional array with different sizes and data types;			A
	10.6.3	apply the process of traversing using all types of loops for input, output, and manipulation of elements;			A
	10.6.4	write a program that stores numeric values in a one-dimensional array using a for loop and obtains the highest, lowest, and average values.			A

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Topics and Sub-topics		Student Learning Outcomes		Cognitive Level		
				R	U	A and beyond
11. Data and Analysis		Students should be able to:				
11.1	Scope of Artificial Intelligence	11.1.1	explain Artificial Intelligence (AI) and its applications in modern technology;		*	
		11.1.2	analyse the impact, scope, and emerging trends of Artificial Intelligence (AI) in the following fields: a. AI engineering, b. robotics, c. military and aviation, d. mechanical engineering, e. AI-assisted surgery;			An
11.2	Scope of Machine Learning	11.2.1	explain the following machine-learning skills: a. AI-enabled systems learning from large data, b. supervised and unsupervised learning, c. automation and scalability, d. fraud detection;		*	
		11.2.2	use data mining techniques to extract patterns and insights from given datasets for real-world applications;			A
		11.2.3	apply Natural Language Processing (NLP) concepts in real-world applications like speech recognition, translation, and text analysis;			A
11.3	Big Data and Applications of Big Data in Real-World Business	11.3.1	explain the big data concept and its significance in managing and reviewing large datasets;		*	
		11.3.2	explain the following big data analysis methods: a. descriptive analytics, b. diagnostic analytics, c. predictive analytics, d. prescriptive analytics;		*	
		11.3.3	illustrate the real-world business applications in big data;			A
		11.3.4	analyse datasets to extract insights in various domains;			An

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Topics and Sub-topics		Student Learning Outcomes		Cognitive Level		
				R	U	A and beyond
12. Security, Privacy and Data Integrity		Students should be able to:				
12.1	Safe and Responsible Use of Information Sources	12.1.1	describe information literacy and its importance;		*	
		12.1.2	explain the essentials of good digital citizenship (safe and responsible use of technology);		*	
		12.1.3	explain key concepts of copyright, plagiarism, and piracy;		*	
		12.1.4	analyse ethical issues that arise in ICT while navigating online environments;			An
		12.1.5	asses the importance of online safety, responsibility and respectfulness;			E
		12.1.6	examine the health concerns associated with the excessive use of ICT devices and their impact on well-being;			An
		12.1.7	assess the significance of maintaining online safety, demonstrating responsible digital behaviour, and fostering respectful communication in digital spaces;			E
12.2	Cyberbullying and Harassment	12.2.1	describe cyberbullying;		*	
		12.2.2	analyse the impacts of cyberbullying on students;			An
		12.2.3	suggest effective strategies to prevent cyberbullying and promote responsible digital behaviour;			E

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Topics and Sub-topics		Student Learning Outcomes		Cognitive Level		
				R	U	A and beyond
12.3	The Digital Divide	12.3.1	describe the digital divide and its following types: a. access divide, b. skill divide, c. income divide, d. geographical divide, e. cultural divide;		*	
		12.3.2	explain the following causes of the digital divide: a. economical, b. geographical, c. educational, d. social and cultural, e. government policies;		*	
		12.3.3	explain the following effects of the digital divide: a. unequal access to information, b. education gap, c. economic disadvantage, d. social isolation, e. health disparities, f. democratic participation;		*	
		12.3.4	recommend strategies to reduce the digital divide and improve digital accessibility.			E

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Topics and Sub-topics		Student Learning Outcomes	Cognitive Level		
			R	U	A and beyond
13. Digital Literacy		Students should be able to:			
13.1 Digital Literacy and Tools of Digital Technology	13.1.1	differentiate between digital literacy and digital technology;		*	
	13.1.2	apply digital technology tools to improve communication, security, and problem-solving in daily life;			A
	13.1.3	evaluate the effectiveness of digital technologies in different real-life scenarios to optimise productivity and connectivity;			E
13.2 Digital Artefact Design and Development	13.2.1	explain digital artefacts;		*	
	13.2.2	use the following digital tools in real-world tasks by applying digital literacy and creativity: a. Canva for graphic designing, b. Scratch for coding, c. Microsoft PowerPoint for creating presentations, d. Microsoft Excel for entering data or calculations, e. Microsoft Word for formatting text or using templates;			FA[4]
	13.2.3	explore simple information gathering using online resources and digital libraries.			FA

[4]FA= Formative Assessment, not to be assessed under examination conditions

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Topics and Sub-topics		Student Learning Outcomes	Cognitive Level		
			R	U	A and beyond
14. Entrepreneurship in the Digital Age	Students should be able to:				
14.1 Digital Marketing Fundamentals	14.1.1	explain the concepts of design thinking and business planning, emphasising their role in problem-solving and entrepreneurship;		*	
	14.1.2	explain entrepreneurial skills and ideas for a small business;		*	
	14.1.3	explain the following components of devising a business plan: a. executive summary, b. startup, c. analyse the market, d. enlist products/ services, e. target market, f. promotional strategy, g. budget;		*	
	14.1.4	suggest digital marketing strategies to promote products, services, or ideas effectively;			E
	14.1.5	construct a business plan for a product or service based on your community or global needs;			FA
14.2 Digital Tools to Conduct Research Surveys and Questionnaires	14.2.1	design customisable surveys and questionnaires to gather insights for developing a business idea (e.g., google forms, survey monkey).			FA

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Practical Activities of AKU-EB SSC Computer Science Syllabus

Student Learning Outcomes

Content Covered	Actions Performed	Attitude Developed
• Introduction to Hypertext Markup Language (HTML) • Designing Webpage: Text Formatting • Designing Webpage: Creating List • Designing Webpage: Images and Background • Programming Basics (JavaScript) • Operators in JavaScript • I/O Functions in JavaScript • Conditional (Selection) Control Structure • Loop Structure	• Follow the procedure provided in the Lab Guidelines. • Start the computer to perform the task. • Perform the task with the help of the given method. • Execute simple programs using a selected programming language. • Demonstrate cybersecurity principles to ensure safe data handling, secure authentication, and protection from malware.	• Ensure safety of yourself, others around you, and your surroundings. • Demonstrate a computational mindset by asking questions. • Display ethical dealings and practices while performing tasks. • Show willingness to solve problems and challenges. • Show self-reliance and cooperation when working independently and in a group setting respectively.

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Part II (Grade X)

S.No	Practical Activity	Equipment	Software
	Topic 10: Programming in JavaScript		
1.	Apply output functions: innerHTML, document.write( ) and window.alert( ) to display the output;	Computer	Notepad and Browser
2.	Write a JavaScript code containing the following data types: a. String, b. Number, c. BigInt, d. Boolean, e. Undefined, f. Null;		
3.	Write a JavaScript code that uses input functions prompt();		
4.	Convert arithmetic expression into JavaScript code;		
5.	Use the arithmetic operators of JavaScript to solve an arithmetic problem;		
6.	Use the increment (++) and decrement (--) operators in a JavaScript code;		
7.	Use the following relational operators in a JavaScript code: a. less than (<), b. greater than (>), c. less than or equal to (< =), d. greater than or equal to (> =), e. equal to (= =), f. strict equal to (equal value and equal type) (= = =), g. not equal to (! =); h. strict not equal to (not equal value and not equal type) (! = =);		

8.	Write JavaScript code to implement if statement;		
9.	Write JavaScript code to implement if-else statement;		
10.	Write JavaScript code for nested if-else or if-else-if statement;		
11.	Write JavaScript code for switch statement;		
12.	Write JavaScript code to implement for loop;		
13.	Write JavaScript code for while loop;		
14.	Write JavaScript code for do while loop;		
15.	Write the output of a given program having loop and selection structures;		
16.	Use break and continue statements in a JavaScript code;		
17.	Write JavaScript codes for nested loop;		

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Annexure A: List of Acronyms and Their Full Forms

Acronym	Full Form
2FA	Two-Factor Authentication
AI	Artificial Intelligence
ASCII	American Standard Code for Information Interchange
BCR	Barcode Reader
BMC	Business Model Canvas
CD	Compact Disc
CLI	Command Line Interface
CPU	Central Processing Unit
CSS	Cascading Style Sheets
DoS	Denial of Services
DDoS	Distributed Denial of Services
DOS	Disc Operating System
DSL	Digital Subscriber Line
DVD	Digital Versatile Disc
DVD RAM	Digital Versatile Disc Random Access Memory
FTP	File Transfer Protocol
GiB	Gibibyte
Gb	Gigabit
GB	Gigabyte
GUI	Graphical User Interface
HTML	Hypertext Markup Language
HTTP	Hypertext Transfer Protocol
HDD	Hard Disk Drive
I/ O	Input/ Output
IoT	Internet of Things
ICT	Information Communication Technology
IDE	Integrated Development Environment
ISDN	Integrated Services Digital Network
IT	Information Technology

KiB	Kibibyte
Acronym	**Full Form**
Kb	Kilobit
KB	Kilobyte
LAN	Local Area Network
LCD	Liquid Crystal Display
LED	Light Emitting Diode
MAN	Metropolitan Area Network
MiB	Mebibyte
Mb	Megabit
MB	Megabyte
MDI	Menu Driven Interface
MICR	Magnetic Ink Character Reader
MFA	Multifactor Authentication
ML	Machine Learning
NIC	Network Interface Card
NLP	Natural Language Processing
OCR	Optical Character Recognition
OMR	Optical Mark Reader
OS	Operating System
OSI	Open System Interconnection
PIN	Personal Identification Number
RAM	Random Access Memory
ROM	Read Only Memory
SSD	Solid State Drive
TCP/ IP	Transmission Control Protocol/ Internet Protocol
UNIX (UNICS)	Uniplexed Information and Computing System
URL	Uniform Resource Locator
USB	Universal Serial Bus
WAN	Wide Area Network
WWW	World Wide Web

Annexure B: Sample Problems for Algorithms, Flowcharts and Programming

1. Find the sum, product and average of five given numbers.
2. Find the acceleration of a moving object with a given mass and the force applied.
3. Find the volume of a cube, cylinder or sphere.
4. Find the area of a triangle, parallelogram, rhombus or trapezium.
5. Convert Celsius to Fahrenheit temperature and vice versa.
6. Prepare an electricity bill including number of units consumed, price per unit, government sales tax (GST) and total amount to be paid within due date and 10% surcharge after due date.
7. Display the larger one out of the three given unequal numbers.
8. Assign a grade to a subject based on the achieved marks.
9. Find the interest on an amount.
10. Determine whether a given number is prime or composite.
11. Generate a sequence of odd numbers starting from a given number.
12. Generate a sequence of even numbers starting from a given number.
13. Produce a multiplication table for a given number.

Grade X

Table 2: Exam Specification

Topic No.	Topics	Marks Distribution			Total Marks
		MCQs	CRQs	ERQs	
8.	Number Systems and Encoding Schemes	4	Total 3 Marks (1 CRQ)		7
9.	Computational Thinking and Algorithm	7	Total 3 Marks (1 CRQ)		10
10.	Programming in JavaScript	8	Total 7 Marks (3 CRQs)	6 Marks Choose any ONE from TWO	21
11.	Data and Analysis	4		6 Marks Choose any ONE from TWO	16
12.	Security, Privacy and Data Integrity	6			
13.	Digital Literacy	7			7
14.	Entrepreneurship in the Digital Age	4			4
	Total	**40**	**13**	**12**	**65**
	Practical				**10**
	Total				**75**

Note: The cognitive distribution of marks for Computer Science SSC are as follows
Remember: 0 to 10%
Understand: 30 to 50%
Apply and beyond: 40 to 60%

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Examination Structure and Practical Requirements for Grades IX and X

Theory:

- Multiple Choice Question (MCQ) requires candidates to choose one best/ correct answer from four options for each question. Each MCQ carries ONE mark.
- Constructed Response Question (CRQ) requires students to respond with a short text (few phrases/ sentences), calculations or diagrams.
- Extended Response Question (ERQ) requires students to answer in a more descriptive form. The answer should be in paragraph form, with diagrams where needed, and address all parts of the question.
- Table 1 and 2 contain the marks distribution for each topic.
- There will be two examinations, one at the end of grade IX and one at the end of grade X.
- In each grade, the theory paper will be for 3 hours and will consist of two parts: paper I and paper II.
- Paper I theory will consist of 40 compulsory, multiple choice items. These questions will involve four response options. The answer sheet for paper I will be provided separately.
- Paper II theory will carry 25 marks and consist of Constructed Response Questions (CRQs) and Extended Response Questions (ERQs). Each extended response question will be presented in an either/ or form.
- The booklet for paper II will serve as an answer script.

Practical:

- In each grade, a practical examination (Paper III) will be conducted separately from the theory paper and will consist of 10 marks.
- Practical examination (Paper III) will be based on the list of practical activities given in the examination syllabus. Schools may design their own practical manuals based on these activities for teaching and learning purposes.
- Practical journals/ portfolio should be developed by students and endorsed by a figure of authority, such as a teacher or principal, and submitted at the time of the practical examination (Paper III).
- It is essential for each school to equip its computer labs with the necessary software, hardware, peripherals, and other resources according to the requirements of the practical activities. Each school will be responsible for making sure that each student is provided with the opportunity to do the practical activities.

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