آغا خان یونیورسٹی ایگزامینیشن بورڈ
AGA KHAN UNIVERSITY EXAMINATION BOARD

Teaching and Learning Resources for Grade XI Computer Science

Recommended Key Textbook:

Textbook of Computer Science Grade 11, National Book Foundation, Islamabad

Additional Recommended Resource Material				
Topic No	**Topic Title**	**Reference Book**	**Topic in the Reference Book**	**Reference Website**
1.	Basic Concepts of a Computer System	S. Langfield and D. Duddell (2015). Cambridge International AS and A Level Computer Science Coursebook.	Chapter 3 Hardware Chapter 7 System Software	https://www.igcseict.info/theory/2/index.html https://www.bbc.com/bitesize/topics/zmpsgk7
2.	Computer Memory and Storage Devices	S. Langfield and D. Duddell (2015). Cambridge International AS and A Level Computer Science Coursebook.	Chapter 3 Hardware	https://www.igcseict.info/theory/3/index.html https://www.bbc.com/bitesize/guides/zmb9mp3/revision/3

Topic No	Topic Title	Reference Book	Topic in the Reference Book	Reference Website
3.	Architecture of CPU	S. Langfield and D. Duddell (2015). Cambridge International AS and A Level Computer Science Coursebook.	Chapter 5 Processor Fundamentals	https://www.bbc.com/bitesize/guides/zx78v9q/revision/1 https://techdifferences.com/difference-between-risc-and-cisc.html https://www.geeksforgeeks.org/computer-organization-instruction-formats-zero-one-two-three-address-instruction/ https://www.slideshare.net/sanjeevpatel4x/data-transfer-and-manipulation
4.	System Unit	S. Langfield and D. Duddell (2015). Cambridge International AS and A Level Computer Science Coursebook.	Chapter 5 Processor Fundamentals	https://www.electronicshub.org/types-of-computer-ports/#PS2 http://www.differencebetween.net/technology/difference-between-simm-and-dimm/ https://www.computerhope.com/jargon/e/expacard.html

Topic No	Topic Title	Reference Book	Topic in the Reference Book	Reference Website
5.	Network Communication and Protocols	S. Langfield and D. Duddell (2015). Cambridge International AS and A Level Computer Science Coursebook.	Chapter 2 Communication and Internet Technologies Chapter 17 Communication and Internet Technologies	https://en.wikipedia.org/wiki/Local_area_network https://www.tutorialspoint.com/data_communication_computer_network/index.htm https://techdifferences.com/difference-between-guided-and-unguided-media.html https://www.studytonight.com/computer-networks/comparison-osi-tcp-model
6.	Wireless Communication	S. Langfield and D. Duddell (2015). Cambridge International AS and A Level Computer Science Coursebook.	Chapter 2 Communication and Internet Technologies Chapter 17 Communication and Internet Technologies	https://iot4beginners.com/short-range-wireless-communication-technology-and-its-variants/ https://www.coai.com/indian-telecom-infocentre/telecom-infrastructurenetworks https://www.queryhome.com/tech/45871/what-is-the-difference-between-geo-meo-and-leo-satellites

Topic No	Topic Title	Reference Book	Topic in the Reference Book	Reference Website
7.	Database Fundamentals	S. Langfield and D. Duddell (2015). Cambridge International AS and A Level Computer Science Coursebook.	Chapter 10 Database and Data Modelling	https://www.geeksforgeeks.org/sql-ddl-dml-dcl-tcl-commands/ https://www.tutorialspoint.com/dbms/er_model_basic_concepts.htm https://www.tutorialspoint.com/dbms/er_diagram_representation.htm https://dzone.com/articles/database-glossary-1
8.	Database Development (MS Access 2007 or Above)	S. Langfield and D. Duddell (2015). Cambridge International AS and A Level Computer Science Coursebook.	Chapter 10 Database and Data Modelling	https://support.office.com/en-us/article/access-sql-basic-concepts-vocabulary-and-syntax-444d0303-cde1-424e-9a74-e8dc3e460671 https://www.w3schools.com/sql/ https://support.office.com/en-us/article/basic-tasks-for-an-access-desktop-database-5ddb8595-497c-4366-8327-ae79d2abdc9c https://www.quackit.com/microsoft_access/tutorial/

Note: This resource list has been prepared primarily for teachers. While it can be shared with students, students should not be required to buy multiple books. Schools are encourages to stock these books in the library. Moreover, these are only suggestions which have been compiled for the ease of teachers and students; schools are encouraged to use other resources for teaching and learning as well, as long as they are in line with the student learning outcomes (SLOs) mentioned in AKU-EB syllabi. Unless specified, AKU-EB does not endorse any of these books or websites. You are advised to use an ad-blocker while accessing the websites. In case any website is not functional for any reason, you may inform us at examination.board@aku.edu for an alternative or search material via any search engine. If you have any query, please contact us via email.

آغا خان یونیورسٹی ایگزامینیشن بورڈ
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Teaching and Learning Resources for Grade XII Computer Science

Recommended Key Textbook:

Textbook of Computer Science Grade 12, National Book Foundation, Islamabad

Additional Recommended Resource Material				
Topic No	**Topic Title**	**Reference Book**	**Topic in the Reference Book**	**Reference Website**
9.	Operating System (OS)	S. Langfield and D. Duddell (2015). Cambridge International AS and A Level Computer Science Coursebook.	Chapter 7 System Software	https://www.tutorialspoint.com/operating_system/os_types.htm https://www.tutorialspoint.com/operating_system/os_processes.htm https://www.tutorialspoint.com/basics_of_computers/basics_of_computers_functions_of_os.htm
10.	System Development Life Cycle (SDLC)			https://www.tutorialspoint.com/sdlc/sdlc_overview.htm https://www.igcseict.info/theory/8/index.html

Topic No	Topic Title	Reference Book	Topic in the Reference Book	Reference Website
11.	Introduction to C++ Programming	Ulla Kirch-Prinz & Peter Prinz. A Complete Guide to Programming in C++ (1st Edition)	Chapter 1 Fundamentals I Chapter 2 Fundamentals Types, Constants, and Variables Chapter 3: Using Functions and Classes Chapter 4 Input and Output with Streams Chapter 5 Operators for Fundamental Types	**Reference Books Links:** http://www.lmpt.univ-tours.fr/~volkov/C++.pdf https://fac.ksu.edu.sa/sites/default/files/ObjectOrientedProgramminginC4thEdition.pdf https://www.tutorialspoint.com/cplusplus/cpp_basic_syntax.htm https://www.w3schools.in/cplusplus-tutorial/program-structure/ https://www.tutorialspoint.com/cplusplus/cpp_variable_types.htm https://www.w3schools.in/cplusplus-tutorial/variables/
		Robert Lafore. Object Oriented Programming in C++ (Fourth edition)	Chapter 2 C++ Programming Basics	
12.	Control Structures	Ulla Kirch-Prinz & Peter Prinz. A Complete Guide to Programming in C++ (1st Edition)	Chapter 6 Control Flow	https://www.w3schools.in/cplusplus-tutorial/decision-making/ https://www.w3schools.in/cplusplus-tutorial/loops/ https://www.tutorialspoint.com/cplusplus/cpp_decision_making.htm https://www.tutorialspoint.com/cplusplus/cpp_loop_types.htm
		Robert Lafore. Object Oriented Programming in C++ (Fourth edition)	Chapter 3 Loops and Decisions	

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13.	Arrays and Strings	Ulla Kirch-Prinz & Peter Prinz. A Complete Guide to Programming in C++ (1st Edition)	Chapter 16 Arrays Chapter 9 The Standard Class String	https://www.tutorialspoint.com/cplusplus/cpp_arrays.htm https://www.tutorialspoint.com/cplusplus/cpp_strings.htm https://www.w3schools.in/cplusplus-tutorial/arrays/ https://www.w3schools.in/cplusplus-tutorial/strings/
		Robert Lafore. Object Oriented Programming in C++ (Fourth edition)	Chapter 7 Arrays and Strings	
14.	Functions	Ulla Kirch-Prinz & Peter Prinz. A Complete Guide to Programming in C++ (1st Edition)	Chapter 10 Functions	https://www.tutorialspoint.com/cplusplus/cpp_functions.htm https://www.programiz.com/cpp-programming/function
		Robert Lafore. Object Oriented Programming in C++ (Fourth edition)	Chapter 5 Functions	
15.	Pointers	Ulla Kirch-Prinz & Peter Prinz. A Complete Guide to Programming in C++ (1st Edition)	Chapter 12 References and Pointers	https://www.tutorialspoint.com/cplusplus/cpp_pointers.htm https://www.w3schools.in/cplusplus-tutorial/pointers/
		Robert Lafore. Object Oriented Programming in C++ (Fourth edition)	Chapter 10 Pointers	

Topic No	Topic Title	Reference Book	Topic in the Reference Book	Reference Website
16.	Object Oriented Programming (OOP)	Ulla Kirch-Prinz & Peter Prinz. A Complete Guide to Programming in C++ (1st Edition)	Chapter 13 Defining Classes Chapter 14 Methods Chapter 15 Member Objects and Static Member	https://www.w3schools.in/cplusplus-tutorial/objects-classes/ https://www.tutorialspoint.com/cplusplus/cpp_classes_objects.htm https://www.geeksforgeeks.org/c-classes-and-objects/
		Robert Lafore. Object Oriented Programming in C++ (Fourth edition)	Chapter 6 Objects and Classes	
17.	File Handling in C++ Programming	Ulla Kirch-Prinz & Peter Prinz. A Complete Guide to Programming in C++ (1st Edition)	Chapter 18 Fundamentals of File Input and Output	https://www.geeksforgeeks.org/file-handling-c-classes/ http://www.cplusplus.com/doc/tutorial/files/
		Robert Lafore. Object Oriented Programming in C++ (Fourth edition)	Chapter 12 Streams and Files	

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