Al-Balqa' Applied University

جامعة البلقاء التطبيقية

تأسست عام 1997

Curriculum for Associate Degree Program in
Applications Software Specialization

The curriculum of associate degree in **"Applications Software"** consists of (72 credit hours) as follows:

Serial No.	Requirements	Credit Hours
First	University Requirements	12
Second	Program Requirements	12
Third	Specialization Requirements	48
Total		**72**

**The curriculum of associate degree in
Applications Software Specialization**

First: University requirements (12 credit hours) as follows:

Course No.	Course Title	Credit Hours	Weekly Contact Hours		Prerequisite
			Theoretical	**Practical**	
22001101	Arabic Language	3	3	-	
22002101	English Language	3	3	-	
21901100	Islamic Culture	3	3	-	
21702101	Computer Skills	3	1	4	
Total		**12**	**10**	**4**	

Second: Engineering Program requirements (17 credit hours) as follow:

Course No	Course Title	Credit Hours	Weekly Contact Hours		Prerequisite
			Theoretical	**Practical**	
21702171	Mathematics and Statistics	3	3	-	
21701111	Management Information Systems	3	3	-	
21702111	Internet and its Applications	3	-	6	
21404131	Communication Skills in English	3	2	2	
Total		**12**	**8**	**8**	

Third: Specialization Requirements (48 credit hours) as follows:

Course No.	Course Title	Credit Hours	Weekly Contact Hours		Prerequisite
			Theoretical	Practical	
21702155	Computer Networks	3	2	2	
21702257	Computer Networks Lab.	2	-	6	21702155*
21705111	Computer Architecture	2	2	-	
21705221	Web Services	2	0	6	
21705131	Computer Animation	1	-	3	
21705132	Computer Graphics	3	1	6	
20404121	Digital Fundamentals	2	2	-	
20404122	Digital fundamentals Lab.	1	-	3	20404121*
21705241	Artificial Intelligence	3	3	-	
21705261	Internet Programming (asp.net)	2	-	6	
21705262	Programming (JAVA)	2	-	6	
21705161	Windows Programming (VB.net)	2	-	6	
21705271	Application Database	2	-	6	
21705263	Software Developing	3	3	-	
21705162	Introduction to C++ Programming Language	2	2	-	
21705163	Introduction to C++ Programming Language Lab.	1	-	3	21705162*
21705181	Analysis of Algorithms	2	2	-	
21705171	Database	3	3	-	
21705191	Operating Systems	2	1	3	
20409111	Industrial Supervision	2	2	-	
21705200	Training	3	-	-	
21705201	Project**	3	-	-	
Total		**48**	**23**	**53**	

* Co-requisite

** Equivalent to 280 training hours

Al-Balqa' Applied University

جامعة البلقاء التطبيقية

تأسست عام 1997

Study Plan for Associate Degree
in
Electro-pneumatic and Electro-hydraulic Control Specialization

First Year					
First Semester			**Second Semester**		
Course ID	Course Name	Credit Hours	Course ID	Course Name	Credit Hours
	Computer Skills	3		Database	3
	Digital Fundamentals	2		Computer Animation	1
	Digital Fundamentals Lab.	1		Analysis of Algorithms	2
	Introduction to C++ Programming Language	2		Islamic Culture	3
	Introduction to C++ Programming Language Lab.	1		Operating Systems	2
	Mathematics and Statistics	3		Internet and its Applications	3
	Computer Graphics	3		Windows Programming (VB.net)	2
	English Language	3		Computer Architecture	2
Total		**18**	**Total**		**18**

Second Year					
Third Semester			**Fourth Semester**		
Course ID	Course Name	Credit Hours	Course ID	Course Name	Credit Hours
	Artificial Intelligence	3		Programming (JAVA)	2
	Internet Programming (asp.net)	2		Software Developing	3
	Applications Database	2		Web Services	2
	Communication Skills in English	3		Arabic Language	3
	Computer Networks	3		Industrial Supervision	2
	Computer Networks Lab.	2		Training	3
	Management Information Systems	3		Project	3
Total		**18**	**Total**		**18**

❖ **تطبق هذه الخطة الدراسية اعتباراً من بداية العام الجامعي 2008/2009**

Brief Course Description

University Requirements

Course Title	Course No	Credit Hours (Theoretical /Practical)
Arabic Language	**22001101**	**3 (3-0)**

تتضمن هذه المـادة مجموعـة من المهـارات اللغويـة بمستوياتها وأنظمتها المختلفة: الصـوتية، والصرفية، والنحوية، والبلاغية، والمعجمية، والتعبيرية، وتشتمل نمـاذج من النصوص المشرقة: قرآنيـة ، وشـعرية، وقصصية، من بينها نمـاذج مـن الأدب الأردنـي؛ يتـوخى مـن قراءتهـا وتذوقها وتحليلهـا تحليلا أدبيـا؛ تنميـة الـذوق الجمـالي لـدى الطـلاب الدارسين.

English Language	**22002101**	**3 (3-0)**

English is a general course. It covers the syllabuses of listening, speaking, reading, writing, pronunciation and grammar, which are provided in a communicative context. The course is designed for foreign learners of the English language, who have had more than one year of English language study. The extension part would be dealt with in the class situation following the individual differences.

Islamic Culture	**21901100**	**3 (3-0)**

1. تعريف الثقافة الإسلامية وبيان معانيها وموضوعاتها والنظم المتعلقة بها – وظائفها وأهدافها.

2. مصادر ومقومات الثقافة الإسلامية والأركان والأسس التي تقوم عليها.

3. خصائص الثقافة الإسلامية.

4. الإسلام والعلم، والعلاقة بين العلم والإيمان

5. التحديات التي تواجه الثقافة الإسلامية.

6. رد الشبهات التي تثار حول الإسلام.

7. الأخلاق الإسلامية والآداب الشرعية في إطار الثقافة الإسلامية.

8. النظم الإسلامية.

Computer Skills	**21702101**	**3 (1-4)**

An introduction to computing and the broad field of information technology is given. Topics covered include the basic structure of digital computer system, microcomputer, operating systems, application software, data communication and networks, and the internet. Hands-on learning emphasizes Windows xp, MS-office2000, and the internet.

❖ **تطبق هذه الخطة الدراسية اعتباراً من بداية العام الجامعي 2009/2008**

Program requirements

Mathematics and Statistics	21702171	3 (3-0)

متوسط التغير ،المشتقة الأولى والتفسير الهندسي لهما،إيجاد المشتقة الأولى وقواعد الاشتقاق،و الاشتقاق الضمني،التزايد والتناقص،القيم القصوى,التكامل المحدود وغير المحدود، خواص التكامل، التكامل بالتعويض، تطبيقات على التكامل مسائل على المساحة ، الوسط الحسابي ،الوسيط، المنوال،المئينات،المدى ونصف المدى الربيعي،الانحراف المعياري،معامل الارتباط والانحدار،الاحتمالات ونظرية ذات الحدين.

Management Information Systems	21701111	3 (3-0)

مفهوم البيانات والمعلومات وأنواعها، مفهوم النظام وأنواعه، مفهوم نظم المعلومات الإدارية ومراحل تطويرها ،تطور نظم المعلومات الإدارية وأنواعها،إدارة نظم المعلومات الإدارية.

Internet and its Applications	21702111	3 (0-6)

مفهوم الإنترنت واستخدامات الإنترنت و مناقشة القضايا التي تتعلق باستخدام الإنترنت، مفهوم الشبكة و البروتوكولات المستخدمة في الاتصال، مفهوم البريد الإلكتروني ، البحث ، أساسيات تصميم الصفحات باستخدام لغة HTML و JavaScript

Communication skills in English	21404131	3 (2-2)

The main goal of this course is to equip the students with the necessary communication skills in everyday life & work situations and improve their abilities in technical writing to meet market needs. For this course, the English language is the language of teaching & the means of communication for all classroom situations.

Specialization Requirements

Computer Networks	21702155	3 (2-2)

Basics of data communication, analog and digital signals and its conversion computer network and it importance LAN and WAN networks, LAN topologies, and their features network devices, network protocols ,network software , internet basics.

Computer Networks Lab.	21702257	2 (0-6)

Laboratory works should cover all aspects of the course such as : Windows 2000 installation ,maintain server resources, managing groups , implementing group policy , managing disaster recovery, monitor server performance and safeguard data on a computer running Microsoft Windows Server 2000

Computer Architecture	21705111	2 (2-0)

Introduction to logic design; Assembly language Programming; The design of computer systems and components; Processor design; Instruction set design and addressing ; computer Arithmetic; control structures and microprogramming; memory system design, caches, and memory hierarchies; system buses and Input / Output structures; pipelining and RISCS.

Web Services	21705221	**2 (0-6)**

Up until now, it has been very difficult to communicate and transfer data between different platforms. The surge of XML as a universal text-based standard readable and interpreted by any other system available has opened the channel to enhance the development of cross-functional applications. Students will learn to describe the XML data, processes it, and prepare it for presentation, as well as modeling and designing functional components that will later be used to drive applications. Topics include: creating well-formed and valid XML documents, parsing the documents and creating the format to display through the client's browser, design functional components and content syndication with RSS.

Digital Fundamentals	20404121	**2 (2-0)**

Study of numerical systems, theory of Boolean algebra and logic circuits, applications to different types of circuits, study of flip-flops, counters, registers and accumulators, digital system memory including ROM, RAM, and EPROM.

Digital Fundamentals Lab.	20404122	**1 (0-3)**

Testing and troubleshooting instruments, Logic circuits, adders, comparators, encoders and decoders, flip-flops, counters, registers, memories RAM, ROM, EPROM.

Computer Animation	21705131	**1 (0-3)**

This course introduces various computer animation techniques including key-frame based techniques, interpolations, physically based animation, human animation

Computer Graphics	21705132	**3 (1-6)**

تدريس الطالب كيفية استخدام البرامج التطبيقية المستخدمة في مجال علم GRAPHICS وكيفية بناء التطبيقات ومعالجة الصور تقنيا ، كما يتم تدريس ربط هذه التطبيقات ومخرجاتها مع برامج ذات تخصصات أخرى تحتاج إلي الدعم الفني في إنشاء الواجهات الرسومية والإيضاحية.

Artificial Intelligence	21705241	**3 (3-0)**

يشتمل هذا المساق على شرح أساسيات الذكاء الاصطناعي والتي تعبر عن الجيل الخامس لتكنولوجيا الحاسبات والتي تختلف في الخواص والمضمون عن الأجيال السابقة التي اعتمدت أصلا على نوعية المكونات المادية الرقمية للنظم الحسابية حيث يستخدم الذكاء الاصطناعي المعالجة الرمزية والتي يتميز بها الجيل الخامس علاوة على الإمكانيات المتاحة للنظم الرقمية والتي تفي بالتطبيقات التجارية والمحاسبية حيث يشمل هذا المساق على ثلاث محاور المحور الأول المعالجة الرمزية والمحور الثاني المعالجة المتوازية والمحور الثالث الشبكات العصبية

Internet Programming (asp.net)	21705261	**2 (0-6)**

This course highlights the code separation and modularity features that ASP.NET allows the student to create solid, easily-maintainable Web sites. In addition, ASP.NET's new Web Controls will be covered, including list, and grid controls along with postback features that maintain state and advanced repeater. Database access with ADO.NET is demonstrated, as disconnected data is read

and updated via objects such as datasets and data views

Programming (JAVA)	21705262	2 (0-6)

This course is designed to teach a high level language that can be beneficial to variety of applications in the real world. The course introduces the basic concepts of the selected programming language as well as its properties. The course involves several applications, case studies and exercises; the course might include a project developed under the selected programming language.

Windows Programming (VB.net)	21705161	2 (0-6)

This course explores the character and features of the event driven Visual Basic Programming language to create sophisticated Visual Basic-based windows applications to solve problems. This course covers user interface management systems, design and implementation of online applications, report generations, and Internet applications. The Theprincipal goal is to provide students with most marketable skills together with fundamental concepts so that they can prepare themselves in the rapidly changing dynamic world of information technology.

Application Database	21705271	2 (0-6)

Basis and Application of MS-SQL Server setup , Architectural Overview , Planning for and Installing SQL Files , Databases and Database Files , Querying Database and ERD Model .

Software Developing	21705263	3 (3-0)

This course covers the basic principle and formal method for the procedural development of software system.

Introduction to C++ Programming Language	21705162	2 (2-0)

The goal of this course is to introduce students to the skills of reading, understanding and development C++ code. It focuses on the introduction to primitive data types and variables. Then, its proceeds to the introduction of main C++ language constructions such as condition and looping statements. After this, it migrates to explaining the concepts of functions, arrays and matrices .

Introduction to C++ Programming Language Lab.	21705163	1 (0-3)

Laboratory works must concentrate on writing and executing programs using C++ language. This must cover writing Simple and structured control and conditional statements, simple and nested loop statements, single and multi-dimensional arrays, standard functions and recursive functions

Analysis of Algorithms	21705181	2 (2-0)

The algorithms for various practical problems occurred in Computer Science as well as Science and Engineering are studied. They are analysed in the context of time and space required for their execution. It also study the correctness of each algorithm dealt in the course.

Database	21705171	3 (3-0)

Introduction and History, DBMS Architecture, Storage Hierarchy, Indexes, Entity-relationship (E-R) modeling, the relational model, Relational Query Language (SQL), Query processing and optimization.

Operating Systems	21705191	2 (1-3)

Lectures on process concept, CPU scheduling, process synchronization and deadlocks,

Windows operating software setup, Management file & folder, Windows operating GUI, Control Panel, Multimedia utility, Disk and System management, Format/Disk Management, Communication tools and Compress/ UnCompress.

Industrial Supervision	20409111	2 (2-0)

Supervision duties training knowledge job, introduction job standards, job analysis, training needs study, training programs and curriculum, training evaluation, subordinates appraisal, job organization, production order form filling.

Training	20308291	3 (280 training hours)

Equivalent to (280 hours) of field training targeted to emphasize the ability of students to apply the theories in the real world of the profession.

Project	20308292	3

An integrated assembly/design practical work related to the major fields of study.