وزارة التعليم العالي والبحث العلمي جهاز الاشراف والتقويم العلمي دائرة ضمان الجودة والاعتماد الاكاديمي قسم الاعتماد الدولى



استمارة وصف البرنامج الأكاديمي للكليات للعام الدراسي 2021-2022

اسم الجامعة : الأنبار اسم الكلية : كلية علوم الحاسوب وتكنولوجيا المعلومات / قسم نظم المعلومات عدد الأقسام والفروع العلمية في الكلية : 3

تأريخ ملء الملف : 10 / 2 / 2022

اسم عميد الكلية

التاريخ

التوقيع

اسم معاون العميد للشؤون العلمية والأداء الجامعي 1 m ا.د. جماح يوار مكان التاريخ التوقيع

Enel اسم مدير شعبة ضمان الجودة stradiliser

التاريخ التوقيع

مدير ضمان الجودة والأداء الجامعي

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

COURSE SPECIFICATION

1. Teaching Institution	University of Anbar			
2. University Department/Centre	College of computer science and information technology			
	Information System Department			
3. Course title/code	Structure Programming (C++) I			
4. Programme(s) to which it contributes	First stage			
5. Modes of Attendance offered	Theoretical and practical			
6. Semester/Year	First Semester 2020\2021			
7. Number of hours tuition (total)	3 h. theoretical 2 h. practical per week			
8. Date of production/revision of this specification	Y • Y 1/• 9/Y 1			
9. Aims of the Course				
Learn how to use the algorithms				
How to draw a flowcharts				
The main principles of programming and the development of programming languages				
Learn the principles of Structure programming				
Learn How to programming with C++				

10. Learning Outcomes, Teaching ,Learning and Assessment Method
A- Knowledge and Understanding A1. Learn algorithms A2. Learn flowcharts A3. Learn structured programming A4. Learn C++ programming A5. A6.
B. Subject-specific skills B1. B2. B3.
Teaching and Learning Methods
Assessment methods
Final Exam project Quizzes Laboratory Term Tests
C. Thinking Skills C1. C2. C3. C4.
Teaching and Learning Methods
Assessment methods
Final Exam project Quizzes Laboratory Term Tests

D. General and Transferable Skills (other skills relevant to employability and personal development) D1. D2.

D3.

D4.

11. Course Structure					
Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
First Week	3 h.	Program ming principle s	Overview to Programming Language	Explain Menu, Getting Started with C++.	
Second Week	3 h.	Algorith ms	Algorithms and Flow Charts	Algorithms and Flow Charts	
Third Week	3 h.	C++ program ming	Character set Identifiers Getting Started with C++. Variables Declaration	Character set Identifiers Getting Started with C++. Variables Declaration	Quiz
Fourth Week	3 h.	Variables in C++	Variables Constants Arithmetic Operations The "math.h" Library Unary Minus Increment and /decrement Operators.	In program Explain Variables Constants Program of Arithmetic Operations The "math.h" Library	
Fifth Week	3 h.	Unary Operator s	Unary Minus Increment and /decrement Operators.	Program of Unary Minus Increment and /decrement Operators.	
Sixth Week	3 h.	Operatio nal Operator s	Operational Assignment Operators Relational Operators Logical Operators. Bitwise Operator Logical Operators. Bitwise Operator	Program Operational Assignment Operators Relational Operators Program Logical Operators. Bitwise Operator	Quiz
Seventh Week	3 h.	Selection Statemen ts	Selection Statements the Single. The Switch Selection Statement (Selector	Programs in Lectures	
Eighth Week	3 h.	If Statemen ts	Nested If and If/else Statements If Statement Structure Conditional Statement	Programs in Lectures	
Ninth Week	3 h.	To evaluate the students	Monthly exam		By exam
Tenth Week	3 h.	Switch Statemen ts	The Switch Selection Statement	Programs in Lectures	

Eleventh Week	3 h.	Loop Statemen ts	While Repetition Structure. Do/While Statement for Statement	Programs in Lectures	
Twelfth Week	3 h.	Do/Whil e Statemen t	Do/While Statement for Statement	Programs in Lectures	
Thirteenth Week	3 h.	For Statemen t	For Statement	Programs in Lectures	
Fourteenth Week	3 h.	Nested loop	Break and Continue Control Statements Nested Loops	Programs in Lectures	
Fifteenth Week	3 h.	To evaluate the students	Monthly exam		By exam

12. Infrastructure			
Required reading: · CORE TEXTS · COURSE MATERIALS · OTHER	Mastering C++, shomme's series		
Special requirements (include for example workshops, periodicals, IT software, websites)	https://www.learncpp.com/ https://www.w3schools.com/CPP/default.asp		
Community-based facilities (include for example, guest Lectures , internship , field studies)			

13. Admissions				
Pre-requisites				
Minimum number of students	25-30			
Maximum number of students	50-60			

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

COURSE SPECIFICATION

1. Teaching Institution	University of Anbar			
2. University Department/Centre	College of Computer Science and Information Technology – Computer Science Department			
3. Course title/code	Logic Design 1			
4. Programme(s) to which it contributes	Bachelors of Information System			
5. Modes of Attendance offered	Electronic attendance			
6. Semester/Year	First semester 2020-2021			
7. Number of hours tuition (total)	48			
8. Date of production/revision of this specification	5-6-2021			
9. Aims of the Course				
- The student should understand number systems a	nd codes and conversion between them.			
- The student should understand the Boolean expression and how to apply it.				
- The student should recognize among different logic gates and how to use them.				
- The student should understand how to design a logic circuit.				
- The student should understand using K-map for s	simplification.			

10. Learning Outcomes, Teaching ,Learning and Assessment Method

A- Knowledge and Understanding

A1. The student should understand number systems and codes and conversion between them.

A2. The student should understand the Boolean expression and how to apply it.

A3. The student should recognize among different logic gates and how to use them.

A4. The student should understand how to design a logic circuit.

A5. The student should understand using K-map for simplification

B. Subject-specific skills

B1.

B2.

B3.

Teaching and Learning Methods

- The student should use utilities in the lab to apply scientific experiment
- The ability to design a logic circuit.

Assessment methods

Notes	Date	%	Assessment	
	6 th week	10%	First Month exam	1
	10 th week	10%	Second Month exam	2
	16 th week	10%	Third Month exam	3
	All weeks	5%	Attendance and HW	4
	At end of each experiment	15%	Reports and Lab exam	5
	End of semester	50%	Final exam	6
		100	Sum	
		%		

C. Thinking Skills C1.

- C2.
- C3.
- C4.

Teaching and Learning Methods

Assessment methods

D. General and Transferable Skills (other skills relevant to employability and personal development) D1. D2. D3. D4.

11. Course Structure					
Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
1					
2					
3	2 Theory + 2 Practical		Introduction to number system		
4	2 Theory + 2 Practical		Conversion between systems		
5	2 Theory + 2 Practical		Codes and conversion between them		
6	2 Theory + 2 Practical		First month exam		
7	2 Theory + 2 Practical		Boolean expression		
8	2 Theory + 2 Practical		Logic gates		
9	2 Theory + 2 Practical		Logic gates design		
10	2 Theory + 2 Practical		Second month exam		
11	2 Theory + 2 Practical		NAND gates		
12	2 Theory + 2 Practical		NOR gates		
13	2 Theory + 2 Practical		Sum of product form		
14	2 Theory + 2 Practical		Product Of sum form		
15	2 Theory + 2 Practical		K-map		
16	2 Theory + 2 Practical		Third month exam		

12. Infrastructure	
 Required reading: CORE TEXTS COURSE MATERIALS OTHER 	 Lectures Home works Case study in the Lab Weekly reports
Special requirements (include for example workshops, periodicals, IT software, websites)	 "Digital Design" 4th Edition by M. Morris Mano and Michael D. Ciletti Fundamentals of logic design by J. Roth
Community-based facilities (include for example, guest Lectures , internship , field studies)	

13. Admissions			
Pre-requisites	Fundamental of English and Mathematics		
Minimum number of students	25		
Maximum number of students	40		

Dr. Muntaser A. Salman

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

COURSE SPECIFICATION

1. Teaching Institution	University of Anbar			
2. University Department/Centre	College of Computer Science and Information Technology – Information System Department			
3. Course title/code	Information Technology Principles			
4. Programme(s) to which it contributes	Bachelors of Information System			
5. Modes of Attendance offered	Electronic attendance			
6. Semester/Year	First semester 2021-2022			
7. Number of hours tuition (total)	48			
8. Date of production/revision of this specification	25-10-2021			
9. Aims of the Course				
- Provide a basic knowledge of computer hard	ware and software			
- Introduce the business areas to which compu	ters may be applied.			
- Provide an introduction to business organization and information systems.				
- Develop the skills in network & communication, which play an important part in business computing and information processing.				

10. Learning Outcomes, Teaching ,Learning and Assessment Method

A- Knowledge and Understanding

A1. The student should understand the architecture of any IT systems.

A2. The student should understand the parts of hardware.

A3. The student should understand the system software.

A4. The student should understand the architecture of networks ,protocols and communications devices.

A5.

B. Subject-specific skills

B1.

B2.

B3.

Teaching and Learning Methods

- The student should use utilities in the lab to apply scientific experiment -
- The ability to execute the applications software .

Assessment methods

Notes	Date	%	Assessment	
	6 th week	10%	First Month exam	1
10 th week		10%	Second Month exam	2
	16 th week	10%	Third Month exam	3
	All weeks	5%	Attendance and HW	4
	At end of each experiment	15%	Reports and Lab exam	5
	End of semester	50%	Final exam	6
		100	Sum	
		%		

C. Thinking Skills C1.

- C2.
- C3.
- C4.

Teaching and Learning Methods

Assessment methods

D. General and Transferable Skills (other skills relevant to employability and personal development) D1. D2. D3. D4.

11. Course Structure					
Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
1	2 Theory + 2 Practical		Introduction of Computers and Programming		
2	2 Theory + 2 Practical		Brief history of computer		
3	2 Theory + 2 Practical		Generation of Computers & Computer hierarchy		
4	2 Theory + 2 Practical		Basic Computer Components		
5	2 Theory + 2 Practical		Computer function (fetch cycle, interrupt cycle, I/O function		
6	2 Theory + 2 Practical		Semiconductor main memory (RAM, ROM, CACHE)		
7	2 Theory + 2 Practical		Computer Software(application software)		
8	2 Theory + 2 Practical		External & Internal memory		
9			First Exam		
10	2 Theory + 2 Practical		Telecommunications system & Network		
11	2 Theory + 2 Practical		Topology of a network		
12	2 Theory + 2 Practical		Layering model		
13	2 Theory + 2 Practical		Protocols		
14	2 Theory + 2 Practical		addressing communications		

15		Final Exam	
16			

12. Infrastructure			
Required reading:CORE TEXTSCOURSE MATERIALSOTHER	 Lectures Home works Case study in the Lab Weekly reports 		
Special requirements (include for example workshops, periodicals, IT software, websites)	1.Computing Essentials Making IT work for you2017 by Timothy J. O'Leary.2.Computer Organization and ArchitectureDesigning for Performance (8th Edition).		
Community-based facilities (include for example, guest Lectures , internship , field studies)			

13. Admissions			
Pre-requisites	Fundamental of English .		
Minimum number of students	25		
Maximum number of students	40		

Dr. Salah Sleibi Al-Rawi

وزارة التعليم العالي والبحث العلمي جهاز الإشراف والتقويم العلمي دائرة ضمان الجودة والاعتماد الأكاديمي قسم الاعتماد الدولي



نموذج وصف المقرر

مراجعة أداء مؤسسات التعليم العالي ((مراجعة البرنامج الأكاديمي))

يوفر وصف المقرر هذا إيجازاً مقتضياً لأهم خصائص المقرر ومخرجات التعلم المتوقعة من الطالب تحقيقها مبرهناً عما إذا كان قد حقق الاستفادة القصوى من فرص التعلم المتاحة .ولابد من الربط بينها وبين وصف البرنامج.

جامعة الانبار / كلية علوم الحاسوب وتكنولوجيا المعلومات	١. المؤسسة التعليمية			
نظم المعلومات	٢ . القسم الجامعي / المركز			
حقوق الإنسان	۳. اسم / رمز المقرر			
	٤ . البر امج التي يدخل فيها			
دوام رسمي	 ٥. أشكال الحضور المتاحة 			
الفصل الأول / السنة الدر اسية الأولى	٦. الفصل / السنة			
15	 ۷. عدد الساعات الدر اسية (الكلي) 			
2023 / 9 / 10	٨. تاريخ إعداد هذا الوصف			
٩. أهداف المقرر :				
أ . تعليم الطلبة على أساسيات حقوق الإنسان وقوانينها				
ب. التعرف على الحقوق وأهم الإشكاليات والتحديات التي تواجهها				

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١٠. مخرجات التعلم وطرائق التعليم والتقييم
أ.المعرفة والفهـــم:
 أن يعرف الطالب مفهوم الحقوق وقوانينها وتطبيقاتها
٢. أن يعرف الطالب كيفية المشاركة في نشر الحقوق وتطبيقها بالعمل الواقعي الحقيقي
ب.المهارات الذهنية :
ا . القدرة على استخدام الحقوق وسيلة من أجل التعايش السلمي بين مكونات المجتمع وجميع
المخلوقات
۲. القدرة على مشاركة الآخرين في نشر هذه الحقوق
طرائق التعليم والتعلم
 المشاركة بالتحضير في قاعة الدرس
٢. طريقة الأسئلة والأجوبة في قاعة الدرس
طر ائق التقييم
۲. اخترارات في ۲۵۰ مدرارة.
ج- مهارات التفكير
 ١. تطوير قدرة الطالب على الحوار والمناقشة
٢. معرفة الطالب بالحقوق والعمل بقوانينها
طرائق التعليم والتعلم
 ادارة المحاضرة على نحو تطبيق مرتبط يو اقع الحياة اليومية
٢. تكليف الطالب ببعض الأنشطة والواجبات

وزارة التعليم العالي والبحث العلمي جهاز الإشراف والتقويم العلمي دائرة ضمان الجودة والاعتماد الأكاديمي قسم الاعتماد الدولي



طرائق التقييم ا. المشاركة الفاعلة في قاعة الدرس دليل التزام الطالب وتحمله المسؤولية . ٢. الالتزام بالموعد المحدد في تقديم الواجبات والبحث . ٣. الاختبارات الفصلية والنهائية تعبر عن الالتزام والتحصيل المعرفي . ٢. الاختبارات الفصلية والنهائية تعبر عن الالتزام والتحصيل المعرفي . ٢. المهارات العامة والمنقولة (المهارات الأخرى المتعلقة بقابلية التوظيف والتطور الشخصي). ٢. تنمية قدرات الطالب على التعامل مع القوانين لحقوق الإنسان . ٢. تنمية قدرة الطالب على الحوار والمناقشة في الأمور العامة والخاصة .



					١١. بنية المقرر
طريقة التقييم	طريقة التعليم	اسم الوحدة / المساق أو الموضوع	مخرجات التعلم المطلوبة	الساعات	الأسبوع
التحضير وأسئلة ومناقشة	نظري	تعريف حقوق الإنسان		1	الأول
التحضير وأسئلة ومناقشة	نظري	انواع حقوق الإنسان		1	الثاني
التحضير وأسئلة ومناقشة	نظري	الحقوق الأساسية وغير الأساسية		1	الثالث
التحضير وأسئلة ومناقشة	نظري	الحقوق المدنية		1	الرابع
التحضير وأسئلة ومناقشة	نظري	الحقوق السياسية		1	الخامس
التحضير وأسئلة ومناقشة	نظري	الحقوق الاقتصادية والاجتماعية والثقافية		1	السادس
التحضير وأسئلة ومناقشة	نظري	الحقوق الفردية والحقوق الجماعية و طائفة الحقوق الجديدة		1	السابع

وزارة التعليم العالي والبحث العلمي جهاز الإشراف والتقويم العلمي دائرة ضمان الجودة والاعتماد الأكاديمي قسم الاعتماد الدولي



التحضير وأسئلة	نظري	حقوق الإنسان	1	الثامن
ومناقشة		والقانون الدولي		
		الإنساني		
التحضير وأسئلة	نظري	العلاقة بين حقوق	1	التاسع
ومناقشة		الإنسان والقانون		
		الدولي الإنساني		
التحضير وأسئلة	نظري	أوجه الشبه والاختلاف	1	العاشر
ومناقشة		بين حقوق الإنسان		
* 1 = {	*	والفانون الدولي الإنساني		5 I II
النحضير واسئله	نظري	حقوق الإنسان في	1	الحادي عتىر
ومناقتية		العصور القديمة		
		والوسطى		
التحضير وأسئلة	نظري	حقوق الإنسان في	1	الثاني عشر
ومناقشة		الإسلام		
التحضير وأسئلة	نظري	الاهتمام الدولي	1	الثالث عشر
ومناقشة		والإقليمي بحقوق		
		الإنسان		
التحضير وأسئلة	نظري	مصادر حقوق الإنسان	1	الرابع عشر
عامة ومناقشة		(الدولية - الوطنية -		
		الدينية)		
امتحان شهري	نظري	•	1	الخامس عشر



	١٢. البنية التحتية
 ۱ – الفصل الأول : التعريف بحقوق الإنسان ، الانترنيت 	القراءات المطلوبة :
	 كتب المقرر
	■ اخرى
	متطارات خاصة
	الخدمات الاجتماعية (وتشمل على سبيل
	المثال محاضرات الضيوف والتدريب
	المهني والدر اسات الميدانية)

	١٣. القبول
لا توجد	المتطلبات السابقة
10	أقل عدد من الطلبة
40	أكبر عدد من الطلبة

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

COURSE SPECIFICATION

1. Teaching Institution	College of CS & IT – University of Anbar
2. University Department/Centre	Computer Science
3. Course title/code	English Language
4. Programme(s) to which it contributes	English ()
5. Modes of Attendance offered	Electronic
6. Semester/Year	1 st / 1 st
7. Number of hours tuition (total)	30
8. Date of production/revision of this specification	12/6/2021
9. Aims of the Course	
 Enhancing English speaking, readir 	ng and writing
 Memorize a big number of vocabul 	aries
 Helping students to deal with the En 	nglish language in easier ways

10. Learning Outcomes, Teaching ,Learning and Assessment Methods

A1. Reading

A2. writing

A3. Speaking. A4. Listening A5.

B. Subject-specific skills

B1. Learn scanning and skimming skills in reading

B2. Right pronunciation

B3. Vocabularies

Teaching and Learning Methods

• Working in groups.

- Home work
- Quizzes and exams.
- Referring to some related specialist subjects.

Assessment methods

- Classroom participation.
- Student attendance
- Oral exam.
- Online exam.

C. Thinking Skills

- C1. Developing self-confidence through speaking freely C2. Understanding English from various accents

C3.

C4.

Teaching and Learning Methods

- Work in groups to solve the H/Ws
- Using related websites to deepen understanding the main concepts of English Grammar

Assessment methods

- Oral test.
- Quizzes and online exams.

D. General and Transferable Skills (other skills relevant to employability and personal development) D1. Development of the skills of listening. D2. Development of the skills of speaking. D3. Growing up the skills of doing search in WWW

D4.

11. Course Structure					
Week	Hour s	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
1 st	2	Grammar, reading, writing, listening, vocabulary	Unit 1: Hello	Theoretical	Oral, Student Participation
2 nd	2	Grammar, reading, writing, listening, vocabulary	Unit 2:Your world	Theoretical	Oral, Student Participation
3 rd	2	Grammar, reading, writing, listening, vocabulary	Unit 3:All about you	Theoretical	Oral, Student Participation
4 th	2	Grammar, reading, writing, listening, vocabulary	Unit 4: Family and friends	Theoretical	Oral, Student Participation
5 th	2	Grammar, reading, writing, listening, vocabulary	Unit 5: The way I live	Theoretical	Oral, Student Participation
6^{th}	2	Grammar, reading, writing, listening, vocabulary	Exam	Theoretical	Exam
7 th	2	Grammar, reading, writing, listening, vocabulary	Unit 6: Every Day	Theoretical	Oral, Student Participation
8 th	2	Grammar, reading, writing, listening, vocabulary	Unit 7: My favourites	Theoretical	Oral, Student Participation
9 th	2	Grammar, reading, writing, listening, vocabulary	Unit 8: Where I live	Theoretical	Oral, Student Participation
10 th	2	Grammar, reading, writing, listening, vocabulary	Unit 9:Times past	Theoretical	Oral, Student Participation
11 th	2	Grammar, reading, writing, listening, vocabulary	Unit 10:we had a great time!	Theoretical	Oral, Student Participation
12 th	2	Grammar, reading, writing, listening, vocabulary	Exam	Theoretical	Exam

13 th	2	Grammar, reading, writing, listening, vocabulary	English for Computer Science	Theoretical	Oral, Student Participation
14^{th}	2	listening,	Listening	Theoretical	Oral, Student Participation
15 th	2	Grammar, reading, writing, listening, vocabulary	Revision of most important topics in the subject	Theoretical	Oral, Student Participation

12. Infrastructure	
Required reading: · CORE TEXTS · COURSE MATERIALS · OTHER	 New headway Beginner student's book New headway plus Beginner Teacher's book New headway plus Beginner workbook
Special requirements (include for example workshops, periodicals, IT software, websites)	https://elt.oup.com/student/headway/int/download ?cc=global&selLanguage=en
Community-based facilities (include for example, guest Lectures , internship , field studies)	

13. Admissions			
Pre-requisites	None		
Minimum number of students	10		
Maximum number of students	50		

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

COURSE SPECIFICATION

Study of derivatives, their methods and applications, and their relationship to real problems. Teaching training students to deal with the rules and laws of derivatives and apply them in the future in a logical and correct manner.

1. Teaching Institution	College of Computer Science and Information Technology / University of Anbar
2. University Department/Centre	Information system
3. Course title/code	Mathematic 1
4. Programme (s) to which it contributes	Computer Science
5. Modes of Attendance offered	On-line (Contraction)
6. Semester/Year	2 nd Semester / 2021 – 2022
7. Number of hours tuition (total)	45 hours
8. Date of production/revision of this	01 / 10 / 2021
Specification	
9. Aims of the Course	·
A - Understand the concept of mathematics, its metho	ods and applications.
B - Explain the concept of derivatives and integration	and their applications.
C - Understand the relationship between extracts and	integration and the real problems and how to deal with
them	

0 - Learning outcomes, teaching method, learning and assessment

A- Knowledge and Understanding

A 1. Acquiring the ability and skill to distinguish the bases of derivatives methods and dealing with them

A 2. Acquire the capabilities and skills of applications of derivatives

A3. Dealing with different methods of finite and indefinite derivatives

B. Subject-specific skills

- B1. Summer Training
- B2. Fourth year projects
- B3. Scientific projects

Teaching and Learning Methods

- Daily and weekly quizzes.
- Class room activities.
- Guiding the student to some electronic websites.

Assessment methods

- Participation inside the class.
- Presentation of activities.
- Semesters and final examinations.

C. Thinking Skills

- C1. Develop the student's ability to work and provide homework in a timely manner.
- C2. Analyze the problem and find the solution based on the methods used in the various derivatives
- C 3. To develop the student's ability to debate.

Teaching and Learning Methods

- Managing the lecture to deal with the real problem that attracts the student to the topic of the lesson.
- Assigning groups of students with some activities.
- Make part of the grades for the assignments.
 - Assessment methods
- Active participation in the classroom is evidence of student commitment and responsibility.
- Commitment to the deadline in submitting assignments and research.
- The exams express commitment and cognitive and skill achievement.

- D. General and Transferable Skills (other skills relevant to employability and personal development)
 - D1. Developing the student's ability to deal with technical methods.
 - D2. Developing the student's ability to deal with Internet.

D3. Developing the student's ability to deal with multi media.

D4. Developing the student's ability to discuss real problems.

11. Course Structure					
Week	Hour s	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
1	3	Derivatives	The Definition of the Derivative Interpretation of the Derivative	Theoretical	Assignments and Discussions
2	3	Differentiation Formulas, Product and Quotient Rule	Properties of Derivative , Some laws of derivatives	Theoretical	Assignments and Discussions
3	3	Differentiation Formulas, Product and Quotient Rule	Properties of Derivative , Some laws of derivatives	Theoretical	Quiz ,Assignments and Discussions
4	3	Derivatives of Trig Functions	Derivatives of the six trig functions	Theoretical	Quiz
5	3	Derivatives of Exponential and Logarithm Functions	Exponential Functions, Logarithm Functions	Theoretical	Assignments ,Discussions, H.W
6	3	Derivatives of Inverse Trig Functions	Inverse Sine, Inverse cosine, Inverse tangent, Alternate Notation	Theoretical	Assignments and Discussions
7	3	Derivatives of Inverse Trig Functions	Inverse Sine, Inverse cosine, Inverse tangent, Alternate Notation	Theoretical	Assignments and Discussions
8	3	Derivatives of Hyperbolic Trig Functions	These are the six hyperbolic trig Functions .and They are defined as	Theoretical	Quiz, Assignments and Discussions
9	3	Chain Rule	There are two forms of the chain rule	Theoretical	Assignments and Discussions
10	3	Implicit Differentiation	Defined , formula, and used the chain rule	Theoretical	Assignments and Discussions, H.W
11	3	Higher Order Derivatives	first derivative, second derivative, third derivative.	Theoretical	Quiz, Assignments and Discussions
12	3	Logarithmic Differentiation	the properties of logarithms	Theoretical	Assignments and

					Discussions
13		Examination		On- line	
14	3	Applications of Derivatives	Introduction, Critical Points and Minimum and Maximum Values	Theoretical	Assignments and Discussions
15	3	Applications of Derivatives	Introduction, Critical Points and Minimum and Maximum Values	Theoretical	Assignments and Discussions

12. Infrastructure			
 Required reading: CORE TEXTS COURSE MATERIALS OTHER 	 Book " Thomas Calculas Lecture Notes 		
Special requirements (include for example workshops, periodicals, IT software, websites)			
Community-based facilities (include for example, guest Lectures , internship , field studies)	Practical applications in the companies and projects.		

13. Admissions			
Pre-requisites	Mathematical I, Mathematical II, Advanced Mathematics		
Minimum number of students	15		
Maximum number of students	50		

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

COURSE SPECIFICATION

1. Teaching Institution	University of Anbar
2. University Department/Centre	College of computer science and information technology-
	miorination systems Department
3. Course title/code	Structure Programming (C++) II
4. Programme(s) to which it contributes	First Stage
5. Modes of Attendance offered	Theoretical and practical
6. Semester/Year	Second Semester ۲۰۲۱/۲۰۲۲
7. Number of hours tuition (total)	3 h. theoretical 2 h. practical per week
8. Date of production/revision of this specification	Υ.ΥΙ/.٩/١٨
9. Aims of the Course	
Learn how to use the Advanced Tools	
helps programmers write fast, portable pr	ograms
The main principles of programming and	the development of programming languages
I have the principles of Structure are grown	the development of programming languages
Learn the principles of Structure program	lining

10. Learning Ou	itcomes, Tead	ching ,Learnii	ng and Assess	sment Method	
A- Knowledge A1. Learn the A2.Learn the A3.Learn C+ A4. A5. A6.	e and Underst e algorithms Flowchart + Programmi	anding ng			
B. Subject-sp B1. B2. B3.	ecific skills				
Teaching and	l Learning M	ethods			
Assessment	nethods				
Final Exam proje 50%	ct Quizzes 10%	Laboratory 15%	Term Tests 25%		
C. Thinking C1. C2. C3. C4.	Skills				
Teaching a	nd Learning	Methods			
Assessmen	Assessment methods				
Final Exam projectors 50%	ct Quizzes 10%	Laboratory 15%	Term Tests 25%		

D. General and Transferable Skills (other skills relevant to employability and personal development) D1. D2. D3.

D4.

11. Course Structure					
Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
First Week	3 h.		Function	Programs in Lectures	
Second Week	3 h.		Passing Parameters. Passing by Value. Passing by Reference.	Program and example Passing Parameters. Passing by Value. Passing by Reference.	
Third Week	3 h.		Pointers	Pointers	Quiz
Fourth Week	3 h.		Arrays. Array of One Dimension: Declaration of Arrays.	Program and example Arrays. Array of One Dimension: Declaration of Arrays.	
Fifth Week	3 h.		Initializing Array Elements	Program and example Initializing Array Elements	
Sixth Week	3 h.		Accessing Array Elements.	Program and example Accessing Array Elements.	Quiz
Seventh Week	3 h.		Read / Write / Process Array Elements.	Program and example Read / Write / Process Array	
Eighth Week	3 h.		Array of Two Dimension: Declaration of 2D-Arrays.	Program and example Array of Two Dimension: Declaration of 2D- Arrays.	
Ninth Week	3 h.	To evaluate the students	Monthly exam		By exam
Tenth Week	3 h.		Read / Write / Process Array Elements.	Program and example Read / Write / Process Array Elements.	
Eleventh Week	3 h.		Member Function of String stdlib Library.	Program and example Member Function of String.	
Twelfth Week	3 h.		Structures. The Three Ways for Declare the Structure.	Program and example Structures. The Three Ways for Declare the	

				Structure.	
Thirteenth	3 h.		Array of Structures.	Program and	
Week				example Array of	
				Structures.	
Fourteenth	3 h.		The Files	Program and	
Week	C			example of files	
Fifteenth	3 h.	То	Monthly exam		By exam
Week	C 111	evaluate			5
		the			
		students			

12. Infrastructure				
Required reading: · CORE TEXTS · COURSE MATERIALS · OTHER	Mastering C++, shomme's series			
Special requirements (include for example workshops, periodicals, IT software, websites)	https://www.learncpp.com/ https://www.w3schools.com/CPP/default.asp			
Community-based facilities (include for example, guest Lectures , internship , field studies)				

13. Admissions			
Pre-requisites			
Minimum number of students	25-30		
Maximum number of students	50-60		

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

COURSE SPECIFICATION

1. Teaching Institution	University of Anbar				
2. University Department/Centre	College of Computer Science and Information Technology – Computer Science Department				
3. Course title/code	Logic Design 2				
4. Programme(s) to which it contributes	Bachelors of Information System				
5. Modes of Attendance offered	Electronic attendance				
6. Semester/Year	Second semester ۲۰۲۱-۲۰۲۲				
7. Number of hours tuition (total)	48				
8. Date of production/revision of this	7 • 7 1/• 9/7 •				
specification					
9. Aims of the Course					
• The student should understand encoder, decoder and multiplexers					
The student should understand synchronous logic circuit					
• The student should understand flip-flops and how to use them					
The student should understand registers and their types					
The student should understand counters and their types					
• The student should understand ROM and PLA implementation					

10. Learning Outcomes, Teaching ,Learning and Assessment Methode

A- Knowledge and Understanding

A1. The student should understand encoder, decoder and multiplexers

A2. The student should understand flip-flops and how to use them.

A3. The student should understand registers and their types.

A4. The student should understand counters and their types.

A5. The student should understand ROM and PLA implementation.

B. Subject-specific skills

B1. B2.

D2.

B3.

Teaching and Learning Methods

- The student should use utilities in the lab to apply scientific experiment
- The ability to design a logic circuit.

Assessment methods

Notes	Date	%	Assessment	
	6 th week	10%	First Month exam	1
	10 th week	10%	Second Month exam	2
	16 th week	10%	Third Month exam	3
	All weeks	5%	Attendance and HW	4
	At end of each experiment	15%	Reports and Lab exam	5
	End of semester	50%	Final exam	6
		100	Sum	
		%		

C. Thinking Skills

C1.

C2.

C3.

C4.

Teaching and Learning Methods

Assessment methods

D. General and Transferable Skills (other skills relevant to employability and personal development)

D1.

D2.

D3.

D4.

11. Course Structure					
Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
1	2 Theory + 2 Practical		Synchronous logic gates		
2	2 Theory + 2 Practical		Adder and subtractor circuits		
3	2 Theory + 2 Practical		Comparator circuits		
4	2 Theory + 2 Practical		Encoders and multiplexers		
5	2 Theory + 2 Practical		Multiplexers		
6	2 Theory + 2 Practical		First month exam		
7	2 Theory + 2 Practical		Flip-flops		
8	2 Theory + 2 Practical		SR flip flop and j k flip flop		
9	2 Theory + 2 Practical		T flip flop and D flip flop		
10	2 Theory + 2 Practical		Second month exam		
11	2 Theory + 2 Practical		Registers design		
12	2 Theory + 2 Practical		Counters design		
13	2 Theory + 2 Practical		ROM		
14	2 Theory + 2 Practical		PLA		
15	2 Theory + 2 Practical		State plan		
16	2 Theory +		Final exam		
2 Practical					
--	--	---	---		
12. Infrastructure					
Required reading: · CORE TEXTS · COURSE MATERIALS · OTHER	 Lecture Home Case st Weekly 	es works tudy in the Lab y reports			
Special requirements (include for example workshops, periodicals, IT software, websites)	- "Digita and Mi - Fundan	l Design" 4 th Edit chael D. Ciletti nentals of logic de	ion by M. Morris Mano esign by J. Roth		
Community-based facilities (include for example, guest Lectures, internship, field studies)					

13. Admissions	
Pre-requisites	Fundamental of English and Mathematics and Logic design 1 course.
Minimum number of students	25
Maximum number of students	40

Dr. Muntaser A. Salman

TEMPLATE FOR COURSE SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

COURSE SPECIFICATION

This Course Specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the programme specification.

1. Teaching Institution	University of Anbar
2. University Department/Centre	College of Computer Science and Information Technology – Information System Department
3. Course title/code	Information System Fundamentals
4. Programme(s) to which it contributes	Bachelors of Information System
5. Modes of Attendance offered	Electronic attendance
6. Semester/Year	First semester 2021-2022
7. Number of hours tuition (total)	32
8. Date of production/revision of this	25-10-2021
specification	
9. Aims of the Course	
- Describe the concepts of organizational	structure and culture
Identify the framework and boundaries o	f information systems in the global environment.
 Apply appropriate systems analysis and business problems. 	design methods, tools and techniques in solving
 Developing the communication skills need 	eded to collaborate with others.

10. Learning Outcomes, Teaching ,Learning and Assessment Method
A- Knowledge and Understanding
A1. Students will be introduced to information systems for the purpose of processing data into
information
A2. Students will be introduced to the use of productivity computer software programs and their relevance to problem-solving and communication
A3. Students will be introduced to the concept and analysis of information requirements of problem- solving.
A4. The student should understand the data communications devices, networks and protocols .
A5.
B. Subject-specific skills
B1.
B2.
B3.
Teaching and Learning Methods

Assessment methods

Notes	Date	%	Assessment	
	6 th week	10%	First Month exam	1
	10 th week	10%	Second Month exam	2
	16 th week	10%	Third Month exam	3
	All weeks	10%	Attendance and HW	4
	At end of each experiment			5
	End of semester	60%	Final exam	6
		100	Sum	
		%		

C. Thinking Skills C1.

C2.

C3.

C4.

Teaching and Learning Methods

Assessment methods

D. General and Transferable Skills (other skills relevant to employability and
personal development)
D1.
D2.
D3.
D4.

11. Course Structure					
Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
1	2 Theory		An Introduction to Information Systems		
2	2 Theory		Information Systems in Organizations		
3	2 Theory		Hardware: Input, Processing, and Output Devices		
4	2 Theory		Software: Systems and Application Software		
5	2 Theory		Database Systems and Business		
6	2 Theory		Telecommunications and Networks		
7	2 Theory		The Internet, Intranets, and Extranets		
8	2 Theory		Topology of a network		
9			First Exam		
10	2 Theory		Data communications systems		
11	2 Theory		Layering model		
12	2 Theory		Protocols Layering		
13	2 Theory		Addressing communications		
14	2 Theory		Transmission Media		
15			Final Exam		
16					

12. Infrastructure

 Required reading: CORE TEXTS COURSE MATERIALS OTHER 	LecturesHome works
Special requirements (include for example workshops, periodicals, IT software, websites)	 Ralph M. Stair & George W. Reynolds" Principles of Information Systems" Ninth Edition.2010 Data Communications and Networking, Fourth Edition by Behrouz A. Forouzan, McGraw-Hill ,2007
Community-based facilities (include for example, guest Lectures , internship , field studies)	

13. Admissions		
Pre-requisites	Fundamental of English .	
Minimum number of students	25	
Maximum number of students	40	

Dr. Salah Sleibi Al-Rawi



نموذج وصف المقرر

مراجعة أداء مؤسسات التعليم العالي ((مراجعة البرنامج الأكاديمي))

يوفر وصف المقرر هذا إيجازاً مقتضياً لأهم خصائص المقرر ومخرجات التعلم المتوقعة من الطالب تحقيقها مبرهناً عما إذا كان قد حقق الاستفادة القصوى من فرص التعلم المتاحة .ولابد من الربط بينها وبين وصف البرنامج.

جامعة الانبار / كلية علوم الحاسوب وتكنولوجيا المعلومات	١. المؤسسة التعليمية
نظم المعلومات	٢ . القسم الجامعي / المركز
اللغة العربية	۳. اسم / رمز المقرر
	٤ ـ البر امج التي يدخل فيها
دوام رسمي	 م. أشكال الحضور المتاحة
الفصل الأول / السنة الدر اسية الأولى	٦. الفصل / السنة
15	 ۷. عدد الساعات الدر اسية (الكلي)
2018 / 8 / 20	۸. تاريخ إعداد هذا الوصف
	 ٩. أهداف المقرر :
وقواعدها	أ . تعليم الطلبة على أساسيات اللغة العربية
	ب. تعليم الطلبة على كيفية الأعراب



١٠. مخرجات التعلم وطرائق التعليم والتعلم والتقييم
أ. المعرفة والفهسم : ١. أن يتعرف الطالب على قواعد اللغة العربية
 ٢. ان يعرف الطالب كيفية بناء الجمل واستخراجها للعنوان المطلوب
ب المهارات الذهنية: (القدرة على البيتورال العداد التي المرجوحة
 ٢ ٢ ٢ ٢ ٢ ٢
طرائق التعليم والتعلم
 المشاركة بالتحضير في قاعة الدرس
٢. طريقة الاسئلة والاجوبة في قاعة الدرس
طرائق التقييم
١. المشاركة في قاعة الدرس ٢. اختبار ات فصلية ونهائية
ج- مهارات التفكير ١. تطوير قدرة الطالب على الحوار والمناقشة ٢. تطوير قدرات الطالب في القيام بالأنشطة اللغوية والأدبية
طرائق التعليم والتعلم
١. إدارة المحاضرة على نحو تطبيقي مرتبط بواقع الحياة اليومية ٢. تكليف الطالب ببعض الأنشطة والواجبات



طرائق التقييم ا. المشاركة الفاعلة في قاعة الدرس دليل التزام الطالب وتحمله المسؤولية . ٢. الالتزام بالموعد المحدد في تقديم الواجبات والبحث . ٣. الاختبارات الفصلية والنهائية تعبر عن الالتزام والتحصيل المعرفي . ٢. المهارات العامة والمنقولة (المهارات الأخرى المتعلقة بقابلية التوظيف والتطور الشخصي). ١. تنمية قدرات الطالب على العامل مع الكتب الرسمية والمخاطبات باللغة السليمة . ٢. تنمية قدرات الطالب على العامل مع الكتب الرسمية والمحامة والخاصة .



١١. بنية المقرر					
طريقة التقييم	طريقة التعليم	اسم الوحدة / المساق أو الموضوع	مخرجات التعلم المطلوبة	الساعات	الأسبوع
التحضير وأسئلة ومناقشة	نظري	العدد تذكيره وتأنيثه		1	الأول
التحضير وأسئلة ومناقشة	نظري	الأعداد المفردة والمركبة		1	الثاني
التحضير وأسئلة ومناقشة	نظري	ألفاظ العقود و الأعداد (مئة ، ألف ، مليون)		1	الثالث
التحضير وأسئلة ومناقشة	نظري	تعريف العدد وتنكيره		1	الرابع
التحضير وأسئلة ومناقشة	نظري	ما يصاغ من العدد على وزن فاعل		1	الخامس
التحضير وأسئلة ومناقشة	نظري	كتابة الهمزة المتوسطة والمتطرفة		1	السادس
التحضير وأسئلة ومناقشة	نظري	كتابة الألف اللينة		1	السابع



التحضير وأسئلة	نظري	كتابة التاء المربوطة	1	الثامن
ومناقشة		والمبسوطة		
التحضير وأسئلة	نظري	كتابة الضاد والظاء	1	التاسع
ومناقشة				
التحضير وأسئلة	نظري	اللامات وأنواعها	1	العاشر
ومناقشة				
التحضير وأسئلة	نظري	الهاءات وأنواعها	1	الحادي عشر
ومناقشة				
التحضير وأسئلة	نظري	النونات وأنواعها	1	الثاني عشر
ومناقشة				
التحضير وأسئلة	نظري	استعمالات (ما ، من)	1	الثالث عشر
ومناقشة		والفرق بين (أما ، إمًا)		
التحضير وأسئلة	نظري	استعمالات (أن ، إن)	1	الرابع عشر
عامة ومناقشة		و (حتى ، رُويد)		
امتحان شهري	نظري		1	الخامس عشر
	•			



	١٢. البنية التحتية
١ – الكتاب : قواعد اللغة العربية ، أ. يوسف الصيداوي	القراءات المطلوبة :
٢ – الكتاب : رسالتان في اللغة ، أبو الحسن علي بن عيسى بن	■ كتب المقرر ■ اخرى
علي بن عبد الله الرماني ، دار الفكر للنشر والتوزيع –	- ,حرى
عمان ، ١٩٨٤م ، تحقيق : إبراهيم السامرائي .	
	متطلبات خاصة
	الخدمات الاجتماعية (وتشمل على سبيل
	المثال محاضرات الضيوف والتدريب المهني والدر إسرات المدراندة)
	المهدي والدراسات الميدانية ب

	١٣. القبول
لا توجد	المتطلبات السابقة
10	أقل عدد من الطلبة
40	أكبر عدد من الطلبة

TEMPLATE FOR COURSE SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

COURSE SPECIFICATION

Study of derivatives, their methods and applications, and their relationship to real problems. Teaching training students to deal with the rules and laws of derivatives and apply them in the future in a logical and correct manner.

College of Computer Science and
Anbar
nformation system
Mathematic 1
Computer Science
On-line (Contraction of the second se
2 nd Semester / 2021 – 2022
45 hours
01 / 10 / 2021
s and applications.
nd their applications.
tegration and the real problems and how to deal with

0 - Learning outcomes, teaching method, learning and assessment

A- Knowledge and Understanding

A 1. Acquiring the ability and skill to distinguish the bases of derivatives methods and dealing with them

A 2. Acquire the capabilities and skills of applications of derivatives

A3. Dealing with different methods of finite and indefinite derivatives

B. Subject-specific skills

- B1. Summer Training
- B2. Fourth year projects
- B3. Scientific projects

Teaching and Learning Methods

- Daily and weekly quizzes.
- Class room activities.
- Guiding the student to some electronic websites.

Assessment methods

- Participation inside the class.
- Presentation of activities.
- Semesters and final examinations.

C. Thinking Skills

- C1. Develop the student's ability to work and provide homework in a timely manner.
- C2. Analyze the problem and find the solution based on the methods used in the various derivatives
- C 3. To develop the student's ability to debate.

Teaching and Learning Methods

- Managing the lecture to deal with the real problem that attracts the student to the topic of the lesson.
- Assigning groups of students with some activities.
- Make part of the grades for the assignments.
 - Assessment methods
- Active participation in the classroom is evidence of student commitment and responsibility.
- Commitment to the deadline in submitting assignments and research.
- The exams express commitment and cognitive and skill achievement.

- D. General and Transferable Skills (other skills relevant to employability and personal development)
 - D1. Developing the student's ability to deal with technical methods.
 - D2. Developing the student's ability to deal with Internet.

D3. Developing the student's ability to deal with multi media.

D4. Developing the student's ability to discuss real problems.

11. Course Structure						
Week	Hour s	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method	
1	3	Derivatives	The Definition of the Derivative Interpretation of the Derivative	Theoretical	Assignments and Discussions	
2	3	Differentiation Formulas, Product and Quotient Rule	Properties of Derivative , Some laws of derivatives	Theoretical	Assignments and Discussions	
3	3	Differentiation Formulas, Product and Quotient Rule	Properties of Derivative , Some laws of derivatives	Theoretical	Quiz ,Assignments and Discussions	
4	3	Derivatives of Trig Functions	Derivatives of the six trig functions	Theoretical	Quiz	
5	3	Derivatives of Exponential and Logarithm Functions	Exponential Functions, Logarithm Functions	Theoretical	Assignments ,Discussions, H.W	
6	3	Derivatives of Inverse Trig Functions	Inverse Sine, Inverse cosine, Inverse tangent, Alternate Notation	Theoretical	Assignments and Discussions	
7	3	Derivatives of Inverse Trig Functions	Inverse Sine, Inverse cosine, Inverse tangent, Alternate Notation	Theoretical	Assignments and Discussions	
8	3	Derivatives of Hyperbolic Trig Functions	These are the six hyperbolic trig Functions .and They are defined as	Theoretical	Quiz, Assignments and Discussions	
9	3	Chain Rule	There are two forms of the chain rule	Theoretical	Assignments and Discussions	
10	3	Implicit Differentiation	Defined , formula, and used the chain rule	Theoretical	Assignments and Discussions, H.W	
11	3	Higher Order Derivatives	first derivative, second derivative, third derivative.	Theoretical	Quiz, Assignments and Discussions	
12	3	Logarithmic Differentiation	the properties of logarithms	Theoretical	Assignments and	

					Discussions
13		Examination		On- line	
14	3	Applications of Derivatives	Introduction, Critical Points and Minimum and Maximum Values	Theoretical	Assignments and Discussions
15	3	Applications of Derivatives	Introduction, Critical Points and Minimum and Maximum Values	Theoretical	Assignments and Discussions

12. Infrastructure					
 Required reading: CORE TEXTS COURSE MATERIALS OTHER 	 Book " Thomas Calculas Lecture Notes 				
Special requirements (include for example workshops, periodicals, IT software, websites)					
Community-based facilities (include for example, guest Lectures , internship , field studies)	Practical applications in the companies and projects.				

13. Admissions					
Pre-requisites	Mathematical I, Mathematical II, Advanced Mathematics				
Minimum number of students	15				
Maximum number of students	50				



University: Anbar College: CS & IT Department: CS and IS Departments Stage: Instructor name: Academic status: Qualification: Msc. Place of work: College of CS & IT

Course Weekly Outline

Course Name: Data Base I

Course Instructor						
E-mail						
Title						
Course Coordinator						
Course Objective	 أ. أن يفهم الطالب ماهي قواعد البيانات ، وماهي اهدافها ووظائفها وانواعها . وانواعها . ب. فهم مفهوم قواعد البيانات في نظام الحاسوب. ت. فهم مذارة العمليات وتحليل الانظمة . ث. فهم مكونات نظام قاعدة البيانات وتصميمها . ج. فهم مكونات نظام قاعدة البيانات ورادة الملفات في قواعد البيانات . 					
Course Description						
Textbook						
References						
Course Assessments	Term Tests	Laboratory	Quizzes	Project	Final Exam	
General Notes						



University: Anbar College: CS & IT Department: CS and IS Departments Stage: Instructor name: Academic status: Qualification: Msc. Place of work: College of CS & IT

Week	Date	Topics Covered	Lab. Experiment Assignments	Notes
1	First week	Intro: A brief history of Data,Information,Knowledge, Wisdom		/
2	Second week	Data Base concepts and structure		/
3	Third week	Database Management System		/
4	Fourth week	Database Models		/
5	Fifth week	The Entity Relationship model		/
6	Sixth week	Structured Query Language (SQL)		/
7	Seventh week	Data Definition Language (DDL)		/
8	Eighth week	Data Manipulation Language (DML)		/
9	Ninth week	Exam 1		/
10	Tenth week	Database Administrator		/
11	Eleventh week	Database Design		/
12	Twelfth week	The Design Process		/
13	Thirteenth week	Database Cardinality		/
14	Fourteenth week	Database Access Language		/
15	Fifteenth week	Life Cycle of Database Management System		/

Instructor Signature:

Dean Signature:



University: Anbar College: CS & IT Department: computer science Stage: 2nd Instructor name: Academic status: Qualification: Place of work:

Course Weekly Outline

Course Name: Computational theory 1

Course Instructor						
E-mail						
Title						
Course Coordinator						
Course Objective	This course covers the Theory of computation. Computation models: automata and formal languages. Practical consequences					
Course Description	Set notation, Definitions, Finite Automata (DFA, NFA), Regular Expression, Transition Graph, Kleens Theorem					
Textbook	Daniel L. A. Cohen, Introduction of the theory of computation.					
References	-Lewis, H.R. and Papadimitriou, Christos. 1998. Elements of the Theory of Computation. 2 nd Edition. Prentice-Hall.					
Course Assessments	TermTests Exam1=15% Exam 2=15%	Laboratory	Quizzes	Project -	Final Exam 60%	
General Notes	2	<u> </u>	1	<u> </u>	<u> </u>	



University: Anbar College: CS & IT Department: Stage: Instructor name: Academic status: Qualification: Place of work:

Course Weekly Outline

4			Lab.	
Vee	Date	Topics Covered	Experiment	Notes
k			Assignments	
1		Set notation, Definitions		
2		Regular Expression		
3		Regular Expression		
4		Finite Automata(F.A.)		
5		Finite Automata(F.A.)		
6		Transition Graphs		
7		Kleen theorm,		
8		Kleen theorm (part 2)		
9		Kleen theorm part 3		
10		DFA, NFA		
11		F. A. with output (Moore machine) (Mo)		
12		F. A. with output (Mealy machine) (Me)		
13		Converting from (Mo) to (Me) and vice versa		
14		Chomsky hierarchy language,		
15		Grammar(PSG, CSG, CFR, FSG)		

Instructor Signature:

Dean Signature:

TEMPLATEFORCOURSESPECIFICATION

HIGHEREDUCATIONPERFORMANCEREVIEW: PROGRAMMEREVIEW

COURSESPECIFICATION

The study of structured programming, entity programming and what is known as objectoriented programming, knowledge of injunctions and functions to prepare the student to know how to write a set of commands, knowing what are injunctions, how to build classes and objects, what the class has of properties and functions, how to build several classes and several objects, and how properties are inherited between them.

1.TeachingInstitution	College of Computer Science & Information Technology
2.UniversityDepartment/Centre	Information System
3.Coursetitle/code	Object Oriented Program-1
4.Programme(s)to which it contributes	
5.Modes of Attendance offered	Attendance
6.Semester/Year	Semester 1
7.Numberof hour stuition(total)	70
8.Dateofproduction/revisionofthis specification	15-9-2021

9.AimsoftheCourse: - The student's acquisition of the concept of entity programming, classes, and objects, and how to deal with them.

Clarify the concept of classes, what are the functions and properties of them, and the objects of each class.

Giving the student experience in dealing with objects and classes and the distribution of properties and functions. The study of structured programming, entity programming and what is known as object-oriented programming, knowledge of injunctions and functions to prepare the student to know how to write a set of commands, knowing what are injunctions, how to build classes and objects, what the class has of properties and functions, how to build several classes and several objects, and how properties are inherited between them.

10.LearningOutcomes,Teaching,LearningandAssessmentMethode

A-KnowledgeandUnderstanding

A1. Gain the ability and skill to distinguish and deal with program instructions and functions of entity programming.

A2- Acquire the skill of distinguishing between objects, classes and functions and linking them.

A3- Dealing with the attributes and characteristics of each class and programming functions.

B. Subject-specific skills

B1. summer training

B2. Graduate Research

B3. Scientific Reports

TeachingandLearningMethods

Sudden daily and continuous weekly tests. Exercises and activities in the classroom. Guide students to some websites to benefit from them.

Assessmentmethods

Participation in the classroom.

Presentation of activities

Semester and final exams and activities.

C. Thinking Skills C1. Develop the student's ability to work on the duties and deliver them on time.

C2. Programmatically analyze the problem and find solutions based on the expected results.

C3. - Develop the student's ability to dialogue and discussion.

TeachingandLearningMethods

Management of the lecture in an applied manner linked to the reality of daily life to attract the student to the topic of the lesson without moving away from the core of the topic so that the material is flexible and capable of understanding and analysis.

• Assigning the student some group activities and duties.

• Allocating a percentage of the grade for daily assignments and tests.

Assessment methods

• Active participation in the classroom is evidence of the student's commitment and responsibility.

• Commitment to the deadline in submitting assignments and research.

• The quarterly and final exams express commitment and cognitive and skill achievement.

D.GeneralandTransferableSkills(otherskillsrelevanttoemployabilityandpersonal development) D1. - Develop the student's ability to deal with technical means. D2. - Develop the student's ability to deal with the Internet. D3. - Develop the student's ability to deal with multiple media. D4. - Develop the student's ability to dialogue and discussion.

11.CourseStructure					
Week	Hours	ILOs	Unit/ModuleorTo picTitle	Teaching Method	Assessment Method
1	5	Program ming of C++	C++ Language (Quick review)	Theory+Practic al	General questions and discussion
2	5	Functions, classes, and objects	Function in C++ (Deep Look)	Theory+Practic al	General questions and discussion or an exam
3	5	Items and operations	Array Function Interaction	Theory+Practic al	General questions and discussion
4	5	previous topics	Structures and Array of Structures	Theory+Practic al	group assignments
5	5	previous topics	Introduction to Class Fundamentals	Theory+Practic al	Debate+quiz
6	5	previous topics	Closer Look at Class Member Access	Theory+Practic al	General questions and discussion
7	5	Functions, classes, and objects	Constructors and Destructors	Theory+Practic al	General questions and discussion or an exam
8	5	genetics	Creating Inline Functions Inside a Class	Theory+Practic al	General questions and discussion
9	5	previous topics	Arrays of Objects (Classes)	Theory+Practic al	group assignments
10	5	previous topics	Pointers to Objects (Classes)	Theory+Practic al	Debate+quiz
11	5	previous topics	Friend Functions	Theory+Practic al	General questions and discussion
12	5		Overloading Constructors	Theory+Practic al	General questions and discussion
13	5		Passing Objects (Classes) to Functions	Theory+Practic al	group assignments

14	5	Returning Objects (classes) From Functions	Theory+Practic al	Debate
15	5	Final Exam		Final Exam

12.Infrastructure	
Requiredreading: · CORETEXTS · COURSEMATERIALS · OTHER	- C++ from the Ground Up, Herbert Scheldt, Third Edition , McGraw-Hill/Osborne,2013.
Special requirements (include forexample workshops, periodicals,ITsoftware,websites)	
Community-based facilities(include for example, guestLectures,internship,fie ld studies)	Practical application in companies and related departments and graduation research projects.

13.Admissions		
Pre-requisites		
Minimumnumberofstudents	10	
Maximumnumber of students	70	

TEMPLATE FOR COURSE SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

COURSE SPECIFICATION

This Course Specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the programme specification.

1. Teaching Institution	University of Anbar
2. University Department/Centre	Information system
3. Course title/code	Advance mathematics
4. Programme(s) to which it contributes	classroom
5. Modes of Attendance offered	Attendance
6. Semester/Year	1st semester
7. Number of hours tuition (total)	45
8. Date of production/revision of this specification	
9. Aims of the Course	
1-To describe the aim of study advance mathematics	
2-To understand what difference between ordinary ec	uation and differential equation
3- To understand the difference between the type of c	lifferential equation
4- To learn the type of method to solve the differentia	ll equation
5- To apply the application of differential equation	

10. Learning Outcomes, Teaching ,Learning and Assessment Method

A- Knowledge and Understanding
A1. Understand the concept of ordinary and partial
A2.Understand the method of solving the first order differential equation
A3.Understand the method of solving second order differential equation
A4. Understand the Laplace transform
A5.Understand the Fourier series
A6.

B. Subject-specific skillsB1.expliean what mean of ordinary and partialB2.classify the method of solvingB3. Classify the differential equation

Teaching and Learning Methods

By solving many exercises

Assessment methods

10% homework

20% quiz

10% oral exam

20% mid exam

40% final exam

D. General and Transferable Skills (other skills relevant to employability and
personal development)
D1.
D2.
D3.
D4.

11. Course Structure					
Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
1	3		Abstract of differential equation		
2	3		Separable equation		
3	3		Solve some example		
4	3		Homogenous equation		
5	3		Exact equation		
6	3		Linear equation		
7	3		Some example		
8	3		Bernoulli equation		
9	3		Second order differential equation		
10	3		Some example		
11	3		Laplace transform		
12	3		Power series , Fourier series		
13	3		Mid exam		
14	3		Review		
15	3		Final exam		

12. Infrastructure	
Required reading: · CORE TEXTS · COURSE MATERIALS · OTHER	Lecture notes of Advance mathematics , by Makarim alturky

13. Admissions	
Pre-requisites	
Minimum number of students	20
Maximum number of students	40



نموذج وصف المقرر

مراجعة أداء مؤسسات التعليم العالي ((مراجعة البرنامج الأكاديمي))

يوفر وصف المقرر هذا إيجازاً مقتضياً لأهم خصائص المقرر ومخرجات التعلم المتوقعة من الطالب تحقيقها مبرهناً عما إذا كان قد حقق الاستفادة القصوى من فرص التعلم المتاحة ولابد من الربط بينها وبين وصف البرنامج.

جامعة الانبار / كلية علوم الحاسوب وتكنولوجيا المعلومات	١. المؤسسة التعليمية
نظم المعلومات	٢ ـ القسم الجامعي / المركز
ديمقراطية	۳. اسم / رمز المقرر
	٤. البر امج الذي يدخل فيها
دوام رسمي	 م. أشكال الحضور المتاحة
الفصل الأول / السنة الدر اسية الثانية	٦. الفصل / السنة
15	 ۷. عدد الساعات الدر اسية (الكلي)
2023 / 9 / 10	 ۲. تاريخ إعداد هذا الوصف
	 ٩. أهداف المقرر :
	أ . تعليم الطلبة على أساسيات الديمقر اطية
باستخدام الديمقر اطية	ب. تعليم الطلبة على كيفية حل المشكلات ب

١٠. مخرجات التعلم وطرائق التعليم والتعلم والتقييم
المعرفة والفهــــم :
 أن يعرف الطالب مفهوم الديمقر اطية وقو انبنها وتطبيقاتها
 ٢. أن يعرف الطالب كيفية المشاركة في الديمقر اطية واستخدام الحلول الايجابية
ب المهارات الذهنية :
 القدرة على استخدام الديمقر اطية في وضع الحلول الناجحة
 ٢. القدرة على مشاركة الآخرين في حرية الرأي
طرائق التعليم والتعلم
ر المشاركة بالتحضير في قاعة الدر س
٢. طريقة الأسئلة والأجوية في قاعة الدرس
طرائق التقييم
 المشاركة في قاعة الدرس
٢. اختبارات فصلية ونهائية
ج- مهارات التفكير
 تطوير قدرة الطالب على الحوار والمناقشة
٢. حل المشكلة بشكل ديمقر اطي
طريانة التجارم والتعام
طرائلي التغليم واستملم
 إدارة المحاضرة على نحو تطبيقي مرتبط بواقع الحياة اليومية
٢. تكليف الطالب ببعض الانشطة والواجبات



طرائق التقييم ا. المشاركة الفاعلة في قاعة الدرس دليل التزام الطالب وتحمله المسؤولية . ٢. الالتزام بالموعد المحدد في تقديم الواجبات والبحث . ٣. الاختبارات الفصلية والنهائية تعبر عن الالتزام والتحصيل المعرفي . ٢. المهارات العامة والمنقولة (المهارات الأخرى المتعلقة بقابلية التوظيف والتطور الشخصي). ٢. تنمية قدرات الطالب على التعامل مع القوانين الديمقر اطية . ٢. تنمية قدرة الطالب على الحوار والمناقشة في الأمور العامة والخاصة .



١١. بنية المقرر					
طريقة التقييم	طريقة التعليم	اسم الوحدة / المساق أو الموضوع	مخرجات التعلم المطلوبة	الساعات	الأسبوع
التحضير وأسئلة ومناقشة	نظري	مفهوم الديمقر اطية	الديمقر اطية	1	الأول
التحضير وأسئلة ومناقشة	نظري	مميزات الديمقراطية		1	الثاني
التحضير وأسئلة ومناقشة	نظري	أنواع الديمقراطية	أنواع الديمقر اطية	1	الثالث
التحضير وأسئلة ومناقشة	نظري	الديمقراطية المباشرة		1	الرابع
التحضير وأسئلة ومناقشة	نظري	الديمقراطية التمثيلية		1	الخامس
التحضير وأسئلة ومناقشة	نظري	الديمقراطية شبه المباشرة		1	السادس
التحضير وأسئلة ومناقشة	نظري	الديمقراطية غير المباشرة		1	السابع



التحضير وأسئلة ومناقشة	نظري	الحرية ، الكرامة الإنسانية	ركانز الديمقراطية	1	الثامن
التحضير وأسئلة ومناقشة	نظري	المساواة والعدالة ، المشاركة السياسية		1	التاسع
التحضير وأسئلة ومناقشة	نظري	التعددية السياسية ، الانتخابات		1	العاشر
التحضير وأسئلة ومناقشة	نظري	حق الأكثرية وحماية حقوق الأقلية ، تداول السلطة سلميا		1	الحادي عشر
التحضير وأسئلة ومناقشة	نظري	الفصل بين السلطات ، الشفافية والمساءلة		1	الثاني عشر
التحضير وأسئلة ومناقشة	نظري	القواعد والمبادئ العامة للديمقراطية	آليات الديمقر اطية	1	الثالث عشر
التحضير وأسئلة عامة ومناقشة	نظري	الآليات العامة للديمقراطية		1	الرابع عشر
امتحان شهري	نظري			1	الخامس عشر



	١٢. البنية التحتية
الديمقراطية وحقوق الإنسان ، وزارة حقوق الإنسان / المركز الوطني لحقوق الإنسان / قسم البحوث	القراءات المطلوبة : كتب المقرر اخرى
	متطلبات خاصة
	الخدمات الاجتماعية (وتشمل على سبيل المثال محاضر ات الضيوف والتدريب المهني والدر اسات الميدانية)

	١٣. القبول
لا توجد	المتطلبات السابقة
10	أقل عدد من الطلبة
40	أكبر عدد من الطلبة
TEMPLATE FOR COURSE SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

COURSE SPECIFICATION

This Course Specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the programme specification.

1. Teaching Institution	University of Anbar			
2. University Department/Centre	Information system			
3. Course title/code	znxlmo4			
4. Programme(s) to which it contributes	classroom			
5. Modes of Attendance offered	Attendance			
6. Semester/Year	2st smester			
7. Number of hours tuition (total)	45			
8. Date of production/revision of this specification				
9. Aims of the Course	·			
1-To convey the basic concepts of data st	ructures			
2-To understand basic concepts about sta	cking, queues, lists, trees, and graphs			
3-It helps the student to know how to deal with data and how to choose the appropriate graphic structure for it				
4-Data structure helps the student to understand the nature of the problem at a deeper level and thus better understanding the world for solving programming				

problems

10. Learning Outcomes, Teaching ,Learning and Assessment Method

A- Knowledge and Understanding

A1- Know the concept of data structures and how to apply them

A2- Understand how to use data structures to know the data to be organized in program memory

A3- Understand and know the use of data structures in different real applications

A4- Understand and know the methods of different data structures

B. Subject-specific skills

1. Providing the student with the skill of applying various data

2- Providing the student with the skill of structuring programs

3- Providing the student with the skill of planning any problem and solving it programmatically

4- Providing the student with the skill of dealing with any type of data

Teaching and Learning Methods

Data model use

using the Internet

Use the whiteboard

Use the Paint program

Use the group solution method

Assessment methods

10	semester exam	1
10	oral exam	2
10	homework	3
5	Attendees	4
15	Practical laboratory	5
50	final exam	6
% 100	total	

C. Thinking Skills

- 1- Clarification skill
- 2- Describing skill
- 3- The skill of accessing information and converting it into digital data
- 4- Classification skill
- 5- Problem solving skill
- 6- The skill of presenting and representing information
- 7- The skill of creating cognitive patterns to solve any software problem
- 8- The skill of applying procedures

D. General and Transferable Skills (other skills relevant to employability and personal development)

1-Providing the student with experience in the field of data structure

2- Providing the student with experience in the field of project management to solve any problem in a digital way

3- Providing the student with experience in the field of understanding applications

4- Providing the student with experience in using real data structures in business

11. Course Structure

Week	Hou rs	ILOs	Unit/Module orTopic Title	Teaching Method	Assessment Method
1	3	Introduction for data structure	Introduction	Theoretical	Activities
2	3	Learn the basic principles	General concept	Theoretical	Activities
3	3	Learn the array in different domination	Array Data structure	Practical and Theoretical	Oral exam
4	3	Learn stack and its operation	Stack data structure	Practical and Theoretical	Solving examples
5	3	Learn one of the stack application	Expression Parsing	Theoretical	Solving examples
6	3	review	Solving homework	Theoretical	Oral exam
7	3	Learn Queue and its operation	Queue data structure	Practical and Theoretical	Solving examples
8		Learn circular Queue and its operation	circular Queue data structure	Practical and Theoretical	Solving examples
9	3		lecture 1 to 7		Middle exam
10	3	Review for Pointer & Structure	Pointer &Structure	Practical and Theoretical	Daily exam
11	3	Learn Linked list representation	linked list data structure	Theoretical	Solving examples
12	3	Learn Linked list operations	linked list operations	Practical and Theoretical	Solving examples
13	3	Learn Doubly Linked list representation	Doubly linked list data structure	Theoretical	Solving examples
14	3	Learn Doubly Linked list operations	Doubly linked list operations	Practical and Theoretical	Solving examples
15	3	second semester exam			

12. Infrastructure	
Required reading: · CORE TEXTS · COURSE MATERIALS · OTHER	عصام الصفار, هياكل البيانات,2001

Special requirements (include for example workshops, periodicals, IT software, websites)	
Community-based facilities (include for example, guest Lectures, internship, field studies)	 https://www.programiz.com/dsa/algorithm https://www.tutorialspoint.com/data_struc tures_algorithms/index.htm

13. Admissions	
Pre-requisites	
Minimum number of students	20
Maximum number of students	40



University: Anbar College: CS & IT Department: computer science Stage: 2nd Instructor name: Academic status: Qualification: Place of work:

Course Weekly Outline

Course Name: Computational theory 2

Course Instructor					
E-mail					
Title					
Course Coordinator					
Course Objective					
	Grammar, Cho	omsky Nor	mal For	m, Greib	ach
Course Description	Normal Form,	LMD & F	RMD, Ai	mbiguity,	Regular
	language, PDA	A, TM, PM	[.		-
	Daniel L. A. Cohen, Introduction of the theory of				
Textbook	computation.				
	-Lewis, H.R. a	nd Papadi	mitriou,	Christos	. 1998.
References	Elements of the Theory of Computation. 2 nd				
	Edition. Prentice-Hall.				
	TermTests	Laboratory	Quizzes	Project	Final
Course Aggagements					Exam
Course Assessments	Exam1=15%		10%	-	60%
	Exam 2=15%				
General Notes					



University: Anbar College: CS & IT Department: Stage: Instructor name: Academic status: Qualification: Place of work:

Course Weekly Outline

Week	Date	Topics Covered	Lab. Experiment	Notes
			Assignments	
1		Regular Grammar (RG or FSG)		
2		Context Free Grammar (CFG)		
3		Grammar Generating, LMD & RMD, Parsing tree		
4		Ambiguity in CFG		
5		Chomsky Normal Form		
6		Greibach Normal Form		
7		Push Dawn Automata (PDA) for a ⁿ b ⁿ		
8		Push Dawn Automata (PDA) for a ⁿ b ⁿ a ⁿ		
9		Tracing in PDA		
10		Turing Machine (TM)		
11		Insert, delette, replace TM subprogram		
12		Post Machine (PM)		
13		PM tracing		
14		Regular language		
15		Regular language		

Instructor Signature:

Dean Signature:

TEMPLATEFORCOURSESPECIFICATION

HIGHEREDUCATIONPERFORMANCEREVIEW: PROGRAMMEREVIEW

COURSESPECIFICATION

The study of structured programming, entity programming and what is known as objectoriented programming, knowledge of injunctions and functions to prepare the student to know how to write a set of commands, knowing what are injunctions, how to build classes and objects, what the class has of properties and functions, how to build several classes and several objects, and how properties are inherited between them.

1.TeachingInstitution	College of Computer Science & Information Technology
2.UniversityDepartment/Centre	Information System
3.Coursetitle/code	Object Oriented Program-2
4.Programme(s)to which it contributes	
5.Modes of Attendance offered	Attendance
6.Semester/Year	Semester2
7.Numberof hour stuition(total)	70
8.Dateofproduction/revisionofthis	15-9-2021
specification	

9.AimsoftheCourse: - The student's acquisition of the concept of entity programming, classes, and objects, and how to deal with them.

Clarify the concept of classes, what are the functions and properties of them, and the objects of each class.

Giving the student experience in dealing with objects and classes and the distribution of properties and functions. The study of structured programming, entity

programming and what is known as object-oriented programming, knowledge of

injunctions and functions to prepare the student to know how to write a set of commands, knowing what are injunctions, how to build classes and objects, what the class has of properties and functions, how to build several classes and several objects, and how properties are inherited between them. 10.LearningOutcomes,Teaching,LearningandAssessmentMethode

A-KnowledgeandUnderstanding

A1. Gain the ability and skill to distinguish and deal with program instructions and functions of entity programming.

A2- Acquire the skill of distinguishing between objects, classes and functions and linking them.

A3- Dealing with the attributes and characteristics of each class and

programming functions.

B. Subject-specific skills

B1. summer training

B2. Graduate Research B3. Scientific Reports

TeachingandLearningMethods

Sudden daily and continuous weekly tests. Exercises and activities in the classroom. Guide students to some websites to benefit from them.

Assessmentmethods

Participation in the classroom. Presentation of activities

Semester and final exams and activities.

C. Thinking Skills

C1. Develop the student's ability to work on the duties and deliver them on time.

C2. Programmatically analyze the problem and find solutions based on the expected results.

C3. - Develop the student's ability to dialogue and discussion.

TeachingandLearningMethods

Management of the lecture in an applied manner linked to the reality of daily life to attract the student to the topic of the lesson without moving away from the core of the topic so that the material is flexible and capable of understanding and analysis. • Assigning the student some group activities and duties. • Allocating a percentage of the grade for daily assignments and tests.

Assessment methods

• Active participation in the classroom is evidence of the student's commitment and responsibility.

• Commitment to the deadline in submitting assignments and research.

• The quarterly and final exams express commitment and cognitive and skill achievement.

D.GeneralandTransferableSkills(otherskillsrelevanttoemployabilityandpersonal development)

- D1. Develop the student's ability to deal with technical means.
- D2. Develop the student's ability to deal with the Internet.
- D3. Develop the student's ability to deal with multiple media.
- D4. Develop the student's ability to dialogue and discussion.

11.Cours	seStructur	e			
Week	Hours	ILOs	Unit/ModuleorTo picTitle	Teaching Method	Assessment Method
1	5	chapter one	Introduction to Operator Overloading	Theory+Practic al	General questions and discussion
2	5	Functions, classes, and objects	Operator Overloading Using Member Functions	Theory+Practic al	General questions and discussion or an exam
3	5	Items and operations	Unary Operators Overloading	Theory+Practic al	General questions and discussion
4	5	previous topics	Operator Overloading Tips and Restrictions	Theory+Practic al	group assignments
5	5	previous topics	Nonmember Operator Functions	Theory+Practic al	Debate+quiz
6	5	previous topics	Using a Friend to Overload a Unary Operator	Theory+Practic al	General questions and discussion
7	5	Functions, classes, and objects	Overloading the Relational and Logical Operators	Theory+Practic al	General questions and discussion or an exam
8	5	genetics	Introducing Inheritance	Theory+Practic al	General questions and discussion
9	5	previous topics	Base Class Access Control	Theory+Practic al	group assignments
10	5	previous topics	Using protected Members	Theory+Practic al	Debate+quiz
11	5	previous topics	Inheriting Multiple Base Classes	Theory+Practic al	General questions and discussion

12	5	Constructors, Destructors, and Inheritance	Theory+Practic al	General questions and discussion
13	5	Passing Parameters to Base Class Constructors	Theory+Practic al	group assignments
14	5	Virtual Base Classes	Theory+Practic al	Debate
15	5	Final Exam		Final Exam

12.Infrastructure	
Requiredreading:CORETEXTSCOURSEMATERIALSOTHER	- C++ from the Ground Up, Herbert Scheldt, Third Edition , McGraw-Hill/Osborne,2013.
Special requirements (include forexample workshops, periodicals,ITsoftware,websites)	
Community-based facilities(include for example, guestLectures,internship,fie ld studies)	Practical application in companies and related departments and graduation research projects.

13.Admissions			
Pre-requisites			
Minimumnumberofstudents	10		
Maximumnumber of students	70		

TEMPLATE FOR COURSE SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

COURSE SPECIFICATION

Studying the numerical analysis, methods, applications and its relationship with the real problems. Teach train the students to deal with the numerical process in the future in logic and right style.

1 Teaching Institution	College of Computer Science and			
1. Teaching institution	Information Technology / University of			
	Anbar			
2. University Department/Centre	Information Systems			
3. Course title/code	Numerical Analysis			
4. Programme (s) to which it contributes	Computer Science			
5. Modes of Attendance offered	Class Room and On-line			
6. Semester/Year	2 nd Semester / 2020 – 2021			
7. Number of hours tuition (total)	60 hours			
8. Date of production/revision of this Specification	15 / 9 / 2021			
9. Aims of the Course				
A- Understanding the concept of numerical analysis,	its methods and applications.			
B- Explain the concept of the Matrices and its applic	ation in numerical analysis.			
C- Understanding the relationship between the numerical methods and the real problems and how to deal with it.				

10. Learning Outcomes, Teaching ,Learning and Assessment Method

A- Knowledge and Understanding

- A1. Gain the ability and skill to distinguish the numerical methods and deal with them.
- A2. Gain the ability and skills of the matrices applications.
- A3. Dealing with the different numerical methods.
- B. Subject-specific skills
- B1. Summer Training
- B2. Fourth year projects
- B3. Scientific projects

Teaching and Learning Methods

- Daily and weekly quizzes.
- Class room activities.
- Guiding the student to some electronic websites.

Assessment methods

- Participation inside the class.
- Presentation of activities.
- Semesters and final examinations.

C. Thinking Skills

- C1. Developing the student ability to work and present the home works in time.
- C2. Analyses the problem and find the solution based on the numerical methods
- C3. Developing the student discussion ability.
- C4.

Teaching and Learning Methods

- Managing the lecture to deal with the real problem that attracts the student to the topic of the lesson.
- Assigning groups of students with some activities.
- Make part of the grades for the assignments.

Assessment methods

- Active participation in the classroom is evidence of student commitment and responsibility.
- Commitment to the deadline in submitting assignments and research.
- The exams express commitment and cognitive and skill achievement.

D. General and Transferable Skills (other skills relevant to employability and personal development)
D1. Developing the student's ability to deal with technical methods.
D2. Developing the student's ability to deal with Internet.

D3. Developing the student's ability to deal with multi media.

D4. Developing the student's ability to discuss real problems.

11. Course Structure					
Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
1	4	Direct Methods	Direct methods for solving linear system of equation	Theoretical and Experimental	Assignments and Discussions
2	4	Gaussian Eliminatio n	Simple Gaussian elimination method, gauss elimination method with partial pivoting,	Theoretical and Experimental	Assignments and Discussions
3	4	Determina nt	determinant evaluation, gauss Jordan method,	Theoretical and Experimental	Quiz
4	4	LU decomposi tion	L U decompositions Doolittle's LU decomposition, Doolittle's method with row interchange	Theoretical and Experimental	Assignments and Discussions
5	4	Matrix inverse	Finding Matrix Inverse	Theoretical and Experimental	Assignments and Discussions
6	4	Iteration methods	Iterative methods for solving linear systems of equations	Theoretical and Experimental	Quiz
7	4	Jacobian iteration	Jacobian iteration, gauss – seidel method,	Theoretical and Experimental	Assignments and Discussions
8	4	gauss – seidel method,	Successive over relaxation method (sort method)	Theoretical and Experimental	Assignments and Discussions
9	4	gauss – seidel method,	Successive over relaxation method (sort method)	Theoretical and Experimental	Quiz
10	4	Newton- Raphson's	Newton-Raphson's Method	Theoretical and Experimental	Assignments and Discussions
11	4	Runge- kutta	Runge-kutta Method	Theoretical and Experimental	Assignments and Discussions
12	4	Polynomial , Data Approximat ion	Interpolation and the Lagrange Polynomial, Data Approximation and Neville's Method,	Theoretical and Experimental	Quiz
13	4	Differential Equation method	Numerical Analysis Methods for Differential Equation	Theoretical and Experimental	Assignments and Discussions
14	4	Integral Equation	Numerical Analysis Methods for Integral	Theoretical and Experimental	Assignments and Discussions

		methos	Equation		
15	4	Integral Equation method	Numerical Analysis Methods for Integral Equation	Theoretical and Experimental	Quiz

12. Infrastructure	
Required reading: · CORE TEXTS · COURSE MATERIALS · OTHER	 Book "Numerical methods with applications" Autar K. Kaw and Egwu Eric Kalu, 2002. Lecture Notes
Special requirements (include for example workshops, periodicals, IT software, websites)	
Community-based facilities (include for example, guest Lectures , internship , field studies)	Practical applications in the companies and projects.

13. Admissions			
Pre-requisites	Mathematical I, Mathematical II, Advanced Mathematics		
Minimum number of students	10		
Maximum number of students	40		

TEMPLATE FOR COURSE SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

COURSE SPECIFICATION

This Course Specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the programme specification.

1. Teaching Institution	University of anbar			
2. University Department/Centre	Information system			
3. Course title/code	znxlmo4			
4. Programme(s) to which it contributes	classroom			
5. Modes of Attendance offered	e-learning			
6. Semester/Year	2st smester			
7. Number of hours tuition (total)	30			
8. Date of production/revision of this specification				
9. Aims of the Course				
1. The student will be able to understand and understand the mechanics of their algorithmic data repair problems in terms of their degree of complexity.				
2. Trees, how to build them in C++, self-recall, and how to	deal with them			
3 that the student be able to understand the working mechanism	anics of algorithms for data structures			
4. What are the best search algorithms, and the criteria for choosing the type of algorithm?				
5.sorting algorithm				

10. Learning Outcomes, Teaching ,Learning and Assessment Methode

A- Knowledge and Understanding This article is based on knowledge

B. Subject-specific skills Learn to program in C++ in a professional way

Teaching and Learning Methods

Understand code and algorithms and implement them in different ways and new steps

Assessment methods

Each student performs part of a problem and then gives a set of questions to each lecture for the student to solve

C. Thinking Skills

The student will have the ability to imagine and suggest hybrid methods between data structures, for example, a hybrid data structure that combines two different models of data structures. And also ways to embed and deal with evidence

Teaching and Learning Methods

The giver and the receiver Writing the code Write action steps in an algorithm

Assessment methods

Each student performs part of a problem and then gives a set of questions to each lecture for the student to solve

D. General and Transferable Skills (other skills relevant to employability and personal development)

This course opens the horizon for the student to represent data in digital form and deal with it professionally

11. Course Structure Unit/Modul Teaching Assessment **ILOs** Week Η Method e orTopic Method ou Title rs 1 The general structure of An individual 2 general the subject and the study vocabulary explanation from vocabulary the instructor 2 2 Define algorithms, their Introduction to adopt scheme properties, and how to the article write them Know the 3 Solve a set of code 2 complexity of the Calculate the algorithm in terms of time complexity of collectively and execution the algorithm in terms of time and steps 4 2 Recursion Recursion Converting a normal code to a Recursion code 5 2 Study all previous lectures Solve the with homework assessment Give other examples methods in the previous 3 lectures Introduction for Solve numeric 6 2 How to choose the type of sorting algorithm sorting algorithm examples according to the data 7 2 selection sort Solve numeric Understand the workings of the algorithm algorithm examples 8 2 Insertion sort Solve numeric Understand the workings of the algorithm algorithm examples

9	2	Understand the workings of the algorithm	Bubble sort algorithm	Solve numeric examples	
10	2	Study all previous lectures	Solve the assessment methods in the previous 3 lectures	Give other examples	
11	2	Exam			
12	2	Representing data as a tree	the trees	Convert tree to code	
13	2	Programmatically represent the tree	Print, delete and add to the tree in the form of code	adopt scheme give examples	
14	2	How to search in trees	search algorithms	Solve a set of code collectively	
15	2	second semester exam			

12. Infrastructure			
Required reading: · CORE TEXTS · COURSE MATERIALS · OTHER	عصام الصفار, هياكل البيانات,2001		
Special requirements (include for example workshops, periodicals, IT software, websites)			
Community-based facilities (include for example, guest Lectures , internship , field studies)	 https://www.programiz.com/dsa/algorithm https://www.tutorialspoint.com/data_struc tures_algorithms/index.htm 		

13. Admissions	
Pre-requisites	
Minimum number of students	20
Maximum number of students	33

TEMPLATE FOR COURSE SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

COURSE SPECIFICATION

This Course Specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the programme specification.

1. Teaching Institution	University of Anbar
2. University Department/Centre	College of computer science and information technology- Information systems Department
3. Course title/code	Web Design
4. Programme(s) to which it contributes	2 nd Stage
5. Modes of Attendance offered	Theoretical and practical
6. Semester/Year	Second Semester 2020\2021
7. Number of hours tuition (total)	2 h. theoretical 2 h. practical per week
8. Date of production/revision of this specification	14-9-2021
9. Aims of the Course	

Understanding fundamentals of Windows programming

Preparing students to apply and producing programs for Windows programming. Designing static web pages using HTML as well as JavaScript programming language

10. Learning Out	comes, Tead	ching ,Learnii	ng and Assess	sment Method
A- Knowledge a A1. Learn HTM A2.Learn CSS A3.Learn Java A4. A5. A6.	nd Underst AL5 Script	anding		
B. Subject-spec B1. B2. B3.	cific skills			
Teaching and I	Learning M	ethods		
Assessment me	ethods			
Final Exam project 50%	Quizzes 10%	Laboratory 15%	Term Tests 25%	
C. Thinking Sl C1. C2. C3. C4.	cills			
Teaching and	Learning	Methods		
Assessment	nethods			
Final Exam project 50%	Quizzes 10%	Laboratory 15%	Term Tests 25%	

D. General and Transferable Skills (other skills relevant to employability and personal development) D1. D2. D3.

D4.

11. Course Structure								
Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method			
First Week	2 h.		General introduction Stander HTML Basics	Give general description of HTML + start our first program				
Second Week	2 h.		HTML Attributes	Design and implement our web pages.				
Third Week	2 h.		HTML Format.	Design and implement our web pages.	Quiz			
Fourth Week	2 h.		HTML Lists	Design and implement our web pages.				
Fifth Week	2 h.		HTML Images	Design and implement our web pages.				
Sixth Week	2 h.		HTML Tables	Design and implement our web pages.	Quiz			
Seventh Week	2 h.		Advance HTML HTML forms	Design and implement our web pages.				
Eighth Week	2 h.		HTML Embed Multimedia	Design and implement our web pages.				
Ninth Week	2 h.	To evaluate the students	Monthly exam		By exam			
Tenth Week	2 h.		Introduction to CSS cascading style sheet	Design and implement our web pages.				
Eleventh Week	2 h.		External Stylesheet & Internal Stylesheet	Design and implement our web pages.				
Twelfth Week	2 h.		CSS Borders	Design and implement our web pages.				
Thirteenth Week	2 h.		JavaScript Introduction	Design and implement our web pages.				
Fourteenth Week	2 h.		Put a JavaScript into an HTML page	Design and implement our web pages.				
Fifteenth	2 h.	To evaluate	Monthly exam		By exam			

Week the students

12. Infrastructure						
Required reading: · CORE TEXTS · COURSE MATERIALS · OTHER	Web Based Application. Web development and design Java script step by step Web Programming with ASP.					
Special requirements (include for example workshops, periodicals, IT software, websites)	https://www.w3schools.com https://www.w3schools.com/css/					
Community-based facilities (include for example, guest Lectures , internship , field studies)						

13. Admissions	
Pre-requisites	
Minimum number of students	25-30
Maximum number of students	50-60



University: Anbar College: CS & IT Department: CS and IS Departments Stage: 3rd Instructor name: Academic status: Asst. Teacher Qualification: Msc. Place of work: College of CS & IT

Course Weekly Outline

Course Name: Compiler I

Course Instructor					
E-mail					
Title					
Course Coordinator					
Course Objective	 A. Definition of how to build and design of programming languages by looking at the work of the translator techniques and how to build it B. Training students to design and build programming languages through the implementation of some stages of the translator in the practical side C. Accommodate the student how the data is stored within the memory process through simulation methods of storage D. Increase the possibility of student programming by giving him examples of different issues within the limits set 				
Course Description	 1 - To distinguish between the types of algorithms of Compiler 2 - Determine the best algorithm for designing compiler 3 - The language used components to convert any algorithm to the interpreter program 4- Determine the evolution in the field of design compilers and programming languages 5- Distinction between the types of translators by knowing the the input and output of the compiler 6- Take collective project to design and build compiler for some simple programming languages proposed 				
Textbook	Compilers Principles, Techniques, and Tools, Aho Law, Addison Wesley				
References	Basics of Compiler Design, T. Mogensen, Copenhagen Uni.				
	Term Tests	Laboratory	Quizzes	Project	Final Exam
Course Assessments	30%	15%	5%	-	50%
General Notes	General Notes				



University: Anbar College: CS & IT Department: CS and IS Departments Stage: 3st Instructor name: Academic status: Asst. Teacher Qualification: Msc. Place of work: College of CS & IT

Course Weekly Outline

Week	Date	Topics Covered	Lab. Experiment Assignments	Notes
1	First week	Introduction to Programming Languages	files	/
2	Second week	Introduction to Translators & Compilation Concepts	files	/
3	Third week	Lexical Analysis – Scanner	TokenType	/
4	Fourth week	Finite Automata	TokenType	/
5	Fifth week	Symbol Table	TokenType	/
6	Sixth week	Symbol Table	TokenType	/
7	Seventh week	Syntax Analysis – parser	Left_Recursive	/
8	Eighth week	Context Free Grammar	Left_Recursive	/
9	Ninth week	Ambiguity-Left Recursive-Left Factoring	Left_Recursive	/
10	Tenth week	First & Follow	Left_Recursive	/
11	Eleventh week	Top-Down Parsing	Left_Factoring	/
12	Twelfth week	LL(1) Grammar	Left_Factoring	/
13	Thirteenth week	Bottom – Up parsing	Left_Factoring	/
14	Fourteenth week	LR – Parsers	Left_Factoring	/
15	Fifteenth week	Semantic Analysis – Type Checking	Left_Factoring	/

Instructor Signature:

Dean Signature:



University: Anbar College: CS & IT Department: :CS & IT Stage: 3rd Instructor name: Dr. Salah Awad Salman Academic status: Ass. Prof. Qualification: PhD Place of work:

Course Weekly Outline

Course Name : Communications and Networks Fundamentals

Course Instructor	Dr. Salah Awad Salman				
E-mail	Salah_eng	1996@yahoo.	com		
Title	3107:Com	munications a 3214:Comp	and Netwo	rks Fundam /orks I - IS	entals – CS
Course Coordinator			-		
Course Objective	The students will be able to: 1. Build an understanding of the fundamental concepts of computer networking. 2. Familiarize the student with the basic taxonomy and terminology of the computer networking area. 3. Introduce the student to advanced networking concepts, preparing the student for entry Advanced courses in computer networking. 4. Allow the student to gain expertise in some specific areas of networking such as the design and maintenance of individual networks.				
Course Description	This course is to provide students with an overview of the concepts and fundamentals of data communication and computer networks. Topics to be covered include: data communication concepts and techniques in a layered network architecture, communications switching and routing, types of communication, network congestion, network topologies, network configuration and Management, network model components, layered network models (OSI reference model, TCP/IP networking architecture) and their protocols, various types of networks (LAN, MAN, WAN and Wireless networks) and their				
Textbook	Data Communications and Networking, 3, 4 /e, Behrouz A Forouzan				
References	Computer Networks, Fourth Edition, Andrew S. Tanenbaum.				
	Term Tests	Laboratory	Quizzes	Project	Final Exam
Course Assessments	25	15	10	-	50
General Notes	25 15 10 - 50 The course is supplemented by a practical component				



University: Anbar College: CS & IT Department: CS & IT Stage: 3rd Instructor name: Dr. Salah Awad Salman Academic status: Ass. Prof. Qualification: PhD Place of work:

Course Weekly Outline

Week	Date	Topics Covered	Lab. Experiment Assignments	Notes
		PART 1: Overview: Chapter: 1 Introduction	Labl: Comm	
VerticityDateTopics CoveredLab. Experiment Assignments11PART 1: Overview: Chapter: 1 Introduction 1.1 DATA COMMUNICATIONS Components, Data Representation, Data FlowLab1: Comm. Sys.2-31.2 NETWORKS Distributed Processing , Network Criteria, Physical Structures, Network 				
		Components, Data Representation, Data Flow		
Vertice Date Topics Covered Lab. Experiments 1 1 PART 1: Overview: Chapter: 1 Introduction 1.1 DATA COMMUNICATIONS Components, Data Representation, Data Flow Lab1: Comm. Sys. 2-3 1.2 NETWORKS Distributed Processing , Network Criteria, Physical Structures, Network Components: NIC, Repeater HUB, Bridge, Router, BROuter, GATEWAY Lab2: Simulator 4-5 1.2 NETWORKS Network Models, Categories of Networks, Network topologies: Mesh, Star, Bus and Ring, the advantages and disadvantages of each topology. Interconnection of Networks: Internetwork Lab2: Simulator 6 1.3 THE INTERNET A Brief History, The Internet Today Lab3:Network Components 7-9 2.1 LAYERED TASKS Sender, Receiver, and Carrier , Hierarchy 2.2 THE OSI MODEL Dayer 2.2 THE OSI MODEL Physical Layer, Data Link Layer, Network Models Lab3:Network Components 10-11 2.3 TCP/IP PROTOCOLS UNITE Physical and Data Link Layer, Network Layer, Transport Layer, Session Layer, Presentation Layer, Application Layer, Summary of Layers Lab4:Network Topology 12 PANDESSING Physical Addresses, Logical Addresses, Port Addresses , Specific Addresses Lab4:Network Topology 12 PART 2: Physical Layer and Media Chapter 1: 3 Data and Signals Lab4:Network Topology 12 PART 2: Physical Layer and Media Chapter 1: 3 Data and Signals Lab4:Network Topology				
2-3		Distributed Processing, Network Criteria, Physical Structures, Network	Simulator	
		Components: NIC, Repeater HUB, Bridge, Router, BRouter, GATEWAY	Comm. Sys.	
		1.2 NETWORKS		
		Network Models, Categories of Networks, Network Classification I AN MAN and WAN	Lab2:	
4-5		Network topologies: Mesh Star Bus and Ring the advantages and	Simulator	
		disadvantages of each topology.	:Comm. Sys	
		Interconnection of Networks: Internetwork		
		1.3 THE INTERNET		
		A Brief History, The Internet Today	Lab2·Network	
6			Components	
		1.4 PROTOCOLS AND STANDARDS	r	
		Protocols, Standards, Standards Organizations, Internet Standards		
		Chapter: 2 Network Models		
7-9		2.1 LATERED TASKS Sender Receiver and Carrier Hierarchy		
		2.2 THE OSI MODEL	Lab2·Network	
		Lavered Architecture, Peer-to-Peer Processes Encapsulation	Components	
		2.2.1 I AVERS IN THE OSI MODEI	r	
		Physical Laver. Data Link Laver. Network Laver. Transport Laver. Session		
		Layer, Presentation Layer, Application Layer, Summary of Layers		
		2.3 TCP/IP PROTOCOL SUITE	Lab 4. Natara ala	
10-11		Physical and Data Link Layers, Network Layer Transport Layer, Application	Lab4:Network	
		Layer	Topology	
12		2.4 ADDRESSING	Lab4:Network	
		Physical Addresses, Logical Addresses, Port Addresses, Specific Addresses	Topology	
		PART 2: Physical Layer and Media Chapter : 3 Data and Signals		
		Chapter : 5 Data and Signals		
		Analog and Digital Data, Analog and Digital Signals, Periodic and Non-		
		periodic Signals		
13-14		3.2 PERIODIC ANALOG SIGNALS	Lab4:Network	
		Sine Wave, Phase, Wavelength, Time and Frequency Domains, Composite	Topology	
		Signals, Bandwidth		
		3.3 DIGITAL SIGNALS		
		Bit Rate, Bit Length, Digital Signal as a Composite Analog Signal,		
		1 ransmission of Digital Signals		
		3.4 INALVOLVIIISOIUN IIVIPAIKIVIEINI Attenuation Distortion Noise		
15		3.4.1 DATA RATE LIMITS	Lab5:Cabling	
		Noiseless Channel: Nyquist Bit Rate, Noisy Channel: Shannon Capacity. Using	Lacereating	
		Both Limits		
		Chapter: 4 Transmission Media		
		4.1 GUIDED MEDIA		
16		Twisted-Pair Cable, Coaxial Cable, Fiber-Optic Cable	Lab5:Cabling	
		4.2 UNGUIDED MEDIA: WIKELESS Radio Wayes Microwayes Infrared		
	1			1



Dean Signature:

Republic of Iraq Ministry of Higher Education & Scientific Research Al Anbar University



University: University of Anbar College: CS & IT Instructor Name: Academic status: Qualification: Place of work: Anbar University Book's Title, Computer Architecture, William Stalling

Course Weekly Outline Course Name: Computer Architecture

Course Instructor					
E-mail					
Title					
Course Coordinator					
Course Objective					
Course Description					
Textbook					
References	Introduction Second Editi	to Algorithms on			
Course Assessments	TermTests	Laboratory	Quizzes	Project	Final Exam
General Notes					

Republic of Iraq Ministry of Higher Education & Scientific Research Al Anbar University



University: University of Anbar College: CS & IT Instructor Name: Academic status: Qualification: Place of work: Anbar University Book's Title, Computer Architecture, William Stalling

First Course Weekly Outline

Week	Date		Topics Covered					
1		Intro	luction					
1		Comp	outer organizati	ion				
2		Histo	listorical development for computers					
3		Comp	outer Levels					
4		Data	Representation	in Computer S	ystems.			
5		Signe	signed Integer Representation					
6		Float	Floating Point Representation					
7		Intro	Introduction to a Simple Computer					
8		CPU	CPU Functions					
9		Mid I	Mid Examination					
10		Regis	Registers, Buses					
11		simpl	simple model computer design, Marie					
12		Instru	Instruction Processing					
13		Asser	Assembler					
14		Contr	ol Unit, Real V	Vorld Architect	ure			
15		Final	Examination.					
	Term 7	Fests	Laboratory	Quizzes	Project	Final	Exam	
	(30%	(0)		(10 %)	(%)	(60	%)	

Instructor Signature:

Dean Signature:

Republic of Iraq Ministry of Higher Education & Scientific Research Al Anbar University



University: University of Anbar College: CS & IT Instructor Name: Academic status: Qualification: Place of work: Anbar University Book's Title, Computer Architecture, William Stalling

1

Second Course Weekly Outline

Week	Date		Topics Covered Note					
1		Instru	ction Set Arch	itecture				
2		Instru	nstruction Format and types					
3		Addre	essing modes:1	-3				
4		Addre	essing modes:3	-7				
5		Mem	ory system, Int	roduction				
6		Comp	Components of memory system					
7		The n	Гhe memory Hierarchy					
8		Cache	Cache Memory					
9		Mid H	Mid Examination					
10		Cache	Cache Organization					
11		Repla	Replacements Algorithms					
12		Write	Write Strategies					
13		Virtu	Virtual Memory					
14		Virtu	Virtual Memory					
15		Final	Examination.					
	Term 7	ſests	Laboratory	Quizzes	Project	Final Exam		
	(30%	6)		(10 %)	(%)	(60%)		

Instructor Signature:

Dean Signature:



University: of Anbar. College: CS&IT Department: of Information Systems. Stage: 3rd Instructor name: Academic status: Qualification: Place of work: College of CS&IT

Course Weekly Outline

Course Instructor					
E-mail					
Title					
Course Coordinator					
Course Objective	It involves planning, design, development, testing, implementation, operations coordination, and maintenance for automated systems and business application software that integrate hardware, software, and communication technologies.				
Course Description	Project Management includes the development and integration, system and application project and technical support to improve the automated systems and agency-wide applications of an organization.				
Textbook	NO				
References	Book Title: Developments in Power Communications Systems ISBN : 978-1-4244-4041-2 Year Published: 2003 Pages: 159				
	Term Tests	Laboratory	Quizzes	Project	Final Exam
Course Assessments	30%	-	10%		60%
General Notes	•				



Course Weekly Outline

Week	Date	Topics Covered	Lab. Experiment Assignments	Notes
1		What is Project Management	Chapter1	
2		A Structured Project Management Methodology	Chapter1	
3		Waterfall Development, Parallel Development and Phased Development	Chapter2	
4		Types of Information Systems Management	Chapter3	
5		Transaction Processing Systems and Management Information Systems	Chapter3	
6		Decision Support Systems and Executive Information Systems	Chapter4	
7		Strategic Project Management Common Elements Systems	Chapter4	
8		The Stages of a Project Management	Chapter5	
9		Why Should We Manage Projects?	Chapter6	
10		Systems Development Life Cycle	Chapter7	
11		What is a design methodology of Project Management?	Chapter8	
12		Phases of project Design	Chapter9	
13		Goals for the Design of a Project.	Chapter10	
14		Developing Enterprise Systems with Intelligent Agent Technology	Chapter11	
15		A full-lifecycle solution development process and An intelligent agent can:	Chapter11	
		First Examination		
TEMPLATE FOR COURSE SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

COURSE SPECIFICATION

This Course Specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the programme specification.

10. Learning Outcomes, Teaching ,Learning and Assessment Method

A- Knowledge and Understanding

- A1. Gain the ability and skill to build C# program and solving different problem.
- A2- Acquire the skills of advance problem analysis.
- A3- Acquire the skills of solving a complex mathematical concept and build a program for them.

B. Subject-specific skills

- B1. summer training
- B2. Graduate Research
- **B3.** Scientific Reports

Teaching and Learning Methods

Quizzes and monthly test.

Exercises and activities in the classroom and Homework. Guide students to some websites to benefit from them.

Assessment methods

- Participation in the classroom.
- Presentation of activities
- Semester and final exams and activities.

C. Thinking Skills

- C1. Develop the ability of students to work on the Homework and deliver them on time.
- C2. Analyze the problem Programmatically and find solutions based on the expected results.
- C3. Development the ability of students for discussion.

Teaching and Learning Methods

- the lecture Management in an applied manner linked to the reality of daily • life to attract the student to the topic of the lesson without moving away from the core of the topic so that the material is flexible and capable of understanding and analysis.
- Assigning the student some group activities and duties.
- Allocating a percentage of the grade for daily assignments and tests.

Assessment methods

- Effective participation in the classroom is evidence of the commitment and responsibility of students.
- Commitment to the final deadline to submit assignments and research.
 Quarterly and final exams reflect the commitment and achievement of knowledge and skills.

D. General and Transferable Skills (other skills relevant to employability and personal development)

D1. Develop the ability of students to deal with technical means.D2. Develop the ability of students to deal with the Internet and multiple media.D3. Develop the ability of students to deal with knowledge sharing.

11. Cour	11. Course Structure							
Week	Hours	ILOs	Unit/Module orTopic Title	Teaching Method	Assessment Method			
1	4	String and Characters	Fundamentals of Strings string Constructors Comparing strings Locating Characters and Substrings in strings	Theory+Practical	General questions and discussion			
2	4	String	Extracting Substrings from strings Concatenating strings Miscellaneous string Methods	Theory+Practical	General questions and discussion or an exam			
3	4	Characters	Fundamentals of Characters Char Methods	Theory+Practical	General questions and discussion			
4	4	Advanced String	Regular Expressions	Theory+Practical	General questions and discussion			
5	4	Advanced String	Complex Regular Expressions Regex Methods Replace and Split	Theory+Practical	Debate+quiz			
6	4	Structures	Introduction to Structures Structures with Constructors Work with	Theory+Practical	General questions and discussion			

			structures		
7	4	Collections	Introduction to Collections List Collection	Theory+Practical	General questions and discussion or an exam
8		Mid-Exam			Mid-Exam
9	4	LINQ Providers	Querying an Array of int Values Using LINQ Querying an Array of Employee Objects Using LINQ	Theory+Practical	group assignments
10	4	LINQ Providers	Querying a Generic Collection Using LINQ		General questions and discussion
11	4	Files	Computer Files Files Categories Input Files Outputs Files Append to Files	Theory+Practical	General questions and discussion
12	4	Windows Form Application	Form Buttons textbox LabelBox	Theory+Practical	General questions and Quiz
13	4	Windows Form Application	Checkbox RadioButtons Menu	Theory+Practical	group assignments
14	4	Classes	Introduction to classes Class with Constructors Work with classes	Theory+Practical	Debate
15	4	Fin	al Exam		Final Exam

12. Infrastructure

Required reading: · CORE TEXTS · COURSE MATERIALS · OTHER Paul J. Deitel and Harvey Deitel. 2016. C# 6 for Programmers (6th Edition) (6th. ed.). Prentice Hall Press, USA.

Special requirements (include for example workshops, periodicals, IT software, websites)	
Community-based facilities (include for example, guest Lectures, internship, field studies)	

13. Admissions				
Pre-requisites				
Minimum number of students	10			
Maximum number of students	34			



University: Anbar College: CS & IT Department: CS and IS Departments Stage: 3rd Instructor name: Academic status: Asst. Teacher Qualification: Msc. Place of work: College of CS & IT

Course Weekly Outline

Course Name: Compiler II

Course Instructor						
E-mail						
Title						
Course Coordinator						
Course Objective	 A. Definition of how to build and design of programming languages by looking at the work of the translator techniques and how to build it B. Training students to design and build programming languages through the implementation of some stages of the translator in the practical side C. Accommodate the student how the data is stored within the memory process through simulation methods of storage D. Increase the possibility of student programming by giving him examples of different issues within the limits set 					
Course Description	 1 - To distinguish between the types of algorithms of Compiler 2 - Determine the best algorithm for designing compiler 3 - The language used components to convert any algorithm to the interpreter program 4- Determine the evolution in the field of design compilers and programming languages 5- Distinction between the types of translators by knowing the the input and output of the compiler 6- Take collective project to design and build compiler for some simple programming languages 					
Textbook	Compilers Principles, Techniques, and Tools, Aho Law, Addison Wesley					
References	Basics of Compiler Design, T. Mogensen, Copenhagen Uni.					
	Term Tests	Laboratory	Quizzes	Project	Final Exam	
Course Assessments	30%	15%	5%	-	50%	
General Notes						



University: Anbar College: CS & IT Department: CS and IS Departments Stage3st Instructor name: Sumaya A. Hamad Academic status: Asst. Teacher Qualification: Msc. Place of work: College of CS & IT

Course Weekly Outline

W	Date	Topics Covered	Lab.					
/ee			Experiment	Notes				
k			Assignments					
1	First week	Introduction to Back-End	First & follow	/				
2	Second week	Intermediate Code Generation	First & follow	/				
3	Third week	Intermediate Code Generation	First &follow	/				
4	Fourth week	Code Optimization Concepts	First &follow	/				
5	Fifth week	Local Optimization	Predicative parser	/				
6	Sixth week	Data – Flow Analysis	Predicative parser	/				
7	Seventh week	Global Optimization	Predicative parser	/				
8	Eighth week	Code Generation	Predicative parser	/				
9	Ninth week	Code Generation	Predicative parser	/				
10	Tenth week	Optimization during Code Generation	Bottom-up	/				
11	Eleventh	Assembler & Loader – Linker Editor	Bottom-up	/				
10	week							
12	Twelfth week	Decompiler concepts	Shift reduce parser	/				
13	Thirteenth week	Decompiler concepts	Shift reduce parser	/				
14	Fourteenth week	Compiler of Object Oriented Language	Shift reduce parser	/				
15	Fifteenth week	Debugging concepts	Shift reduce parser	/				
	Final Year Exam							

Instructor Signature:



University: Anbar College: CS & IT Department: CS & IT Stage: 3rd Instructor name: Dr. Salah Awad Salman Academic status: Assistant Prof. Qualification: PhD Place of work:

Course Weekly Outline

Course Name : Communications and Networks Fundamentals

Course Instructor	Dr. Salah	Awad Salman			
E-mail	Salah_eng1996@yahoo.com				
Title	Commu	nications and Comput	Networks er Networ	Fundament	als – CS,
Course Coordinator			-		
Course Objective	The students will be able to: 1. Build an understanding of the fundamental concepts of computer networking. 2. Familiarize the student with the basic taxonomy and terminology of the computer networking area. 3. Introduce the student to advanced networking concepts, preparing the student for entry Advanced courses in computer networking. 4. Allow the student to gain expertise in some specific areas of networking such as the design and maintenance of individual networks.				
Course Description	This course is to provide students with an overview of the concepts and fundamentals of data communication and computer networks. Topics to be covered include: data communication concepts and techniques in a layered network architecture, communications switching and routing, types of communication, network congestion, network topologies, network configuration and Management, network model components, layered network models (OSI reference model, TCP/IP networking architecture) and their protocols, various types of networks (LAN, MAN, WAN and Wireless networks) and their				
Textbook	Data Communications and Networking, 3, 4 /e, Behrouz A Forouzan				
References	Computer Networks, Fourth Edition, Andrew S. Tanenbaum.				
	Term Tests	Laboratory	Quizzes	Project	Final Exam
Course Assessments	25	15	10	-	50
General Notes	The course is supplemented by a practical component				



University: Anbar College: CS & IT Department: CS & IT Stage: 3rd Instructor name: Dr. Salah Awad Salman Academic status: Assistant Prof. Qualification: PhD

Course Weekly Outline

Week	Date	Topics Covered	Lab. Experiment Assignments	Notes
1-2		 PART 2: Physical Layer - Chapter: 5 Digital Transmission 5.1 DIGITAL-TO-DIGITAL CONVERSION Line Coding, Block Coding, Scrambling 5.2 ANALOG-TO-DIGITAL CONVERSION Pulse Code Modulation (PCM), Delta Modulation (DM) 5.3 TRANSMISSION MODES Parallel Transmission, Serial Transmission 	Lab1: Coding	
3-4		Chapter: 6 Analog Transmission & Bandwidth Utilization 6.1 DIGITAL-TO-ANALOG CONVERSION ASK, FSK, PSK, QAM 6.2 ANALOG-TO-ANALOG CONVERSION AM, FM, PM 6.3 MULTIPLEXING FDM, WDM, STDM, S TDM 6.4 SPREAD SPECTRUM FHSS, DSSS	Lab2: Modulation &SSS	
5-6		 PART 3: Data Link Layer- Chapter: 7 Error Detection, Correction & Multiple Access 7.1 INTRODUCTION Types of Errors, Redundancy, Detection Versus Correction, Coding, Modular Arithmetic 7.2 BLOCK CODING Error Detection, Error Correction 7.3 CYCLIC CODES Cyclic Redundancy Check, Hardware Implementation 7.4 MAC 7.5 CHANNELIZATION FDMA,TDMA, CDMA 	Lab4:TCP/IP Programming	
7-8		Chapter8: Wired LANs & Wireless LANs 8.1 Wired LANs: Ethernet 8.1.1 IEEE STANDARDS, 8.1.2 STANDARD ETHERNET 8.2 Wireless LANs 8.2.1 IEEE 802. 8.2.2 BLUETOOTH	Lab6:TCP/IP Programming	
9-10		 PART 4 Network Layer- Chapter 9: Logical Addressing 9.1 IPv4ADDRESSES 9.2 IPv6 ADDRESSES 9.3 Internet Protocol 9.3.1 IPv4 Datagram, Fragmentation, Checksum, Options, 9.3.2 IPv6 Advantages, Packet Format, Extension Headers 	Lab7:TCP/IP Programming	
11		 Chapter 10: Address Mapping & Routing 10.1 ADDRESS MAPPING ARP, RARp, BOOTP, and DHCP 10.2 UNICAST ROUTING PROTOCOLS Intra- and Inter-domain Routing, Distance Vector Routing, Link State Routing, Path Vector Routing 10.1 MULTICAST ROUTING PROTOCOLS Unicast, Multicast, and Broadcast, Applications, Multicast Routing, Routing Protocols 	Lab7:TCP/IP Programming	
12-13		PART 5 Transport Layer- Chapter 11: UDP, TCP11.1 PROCESS-TO-PROCESS DELIVERY11.2 USER DATAGRAM PROTOCOL (UDP)User Datagram, Checksum, UDP Operation, Use of UDP11.3 TCPTCP Services, TCP Features, Segment, A TCP Connection , Flow Control	Lab8:Network Programming	

14-15	 PART 6 Application Layer- Chapter 12 DNS, Remote Logging, E-Mail, and FTP 12.1 NAME SPACE 12.2 DOMAIN NAME SPACE Label , Domain Narne, Domain 12.3 RESOLUTION Resolver, Mapping Names to Addresses, Mapping Address to Names 12.4 REMOTE LOGGING: TELNET 12.5 ELECTRONIC MAIL 12.6 FILE TRANSFER FTP, Anonymous FTP 	Lab9:Network Programming	
16	 Chapter 13 WWW and HTTP 13.1 ARCHITECTURE Client (Browser), Server, Uniform Resource Locator, Cookies 13.2 WEB DOCUMENTS 	Lab9:Network Programming	

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University: Anbar College: CS & IT Department: Computer Science Stage: 3rd Instructor name: Academic status: Qualification: Place of work: Dept. of Comp. Science

Course Weekly Outline Course Name : Computer Graphics

Course Instructor					
E-mail					
Title					
Course Coordinator					
Course Objective	Software Engineering				
Course Description	Provide students information about fundamental of software engineering with different SW algorithms.				
Textbook	Software Engineering: A practitioner's approach Fifth Edition- Roger S. Pressman, Ph.D.				
References	Software E Fifth Editio	Engineering: . on- Roger S.	A practitio Pressman	oner's appro , Ph.D.	oach
C	TermTests	Laboratory	Quizzes	Project	Final Exam
Course Assessments	10 %	10 %	20 %	10 %	50 %
General Notes		·	·	·	·



University: Anbar College: CS & IT Department: Computer Science Stage: 3rd Instructor name: Academic status: Qualification: Place of work: Dept. of Comp. Science

Course Weekly Outline

Week	Date	Topics Covered	Lab. Experiment Assignments	Notes
1	5/11/2016	Section (1) Fundamental of S.E.	2	
2	15/11/2016	System analysis System planning	2	
3	20/11/2016	System design System documentation	2	
4	1/12/2016	Coding and programming Software testing 8) Cost and time estimation	2	
5	8/12/2016	Software project management Software quality CASE	2	
6	15/1/2016	Section (2) System Planning	2	
7	25/1/2016	Section (8) Software Project Management	2	
8	1/2/2016	Section (3) System Design	2	
9	15/2/2016	Section (4) System Documentation	2	
10	1/3/2016	Section (5) Coding and programming	2	
11	18/3/2016	Section (6) System Testing	2	
12	5/4/2016	Section (7) Software Quality	2	
13	17/4/2016	UML	2	
14	3/4/2016	Review	2	
15	25/4/2016	Comprehensive exam	2	

Instructor Signature:



University: University of Anbar College: CS & IT Department: Information Systems Stage: Forth Instructor Name: Academic status: Qualification: Place of work: Anbar University

Course Weekly Outline

Course Name: Mobile Computing

Course Instructor							
E-mail							
Title							
Course Coordinator							
Course Objective	Give the student basic topics in mobile computing concepts, mobile device management (MDM) and Android Applications						
Course Description	The purpose of this course is to provide an introduction to the exciting and emerging world of wireless and mobile computing, and mobile technology. Reading this book will teach you the fundamentals of computer networking and protocols, radio frequency communication principles, and IEEE standards based wireless technology and give you an overview of hardware and software components, cellular communications, wireless site surveys, mobile device management, troubleshooting, and security principles for both wireless networking and mability						
Textbook	Mobile Cor Barts, by J	mputing Depl ohn Wiley &	oyment aı Sons, Inc.	nd Manager , Indianapo	ment, by Robert J. lis, Indiana, 2015.		
References	 Mobile Computing Deployment and Management, by Robert J. Barts, by John Wiley & Sons, Inc., Indianapolis, Indiana, 2015. Android Studio Development Essentials – Second Edition, by Neil Smyth, 2015. 						
Course Assessments	Term Tests	Laboratory	Quizzes	Project	Final Exam		
	(10%)		(10 %)	(10 %)	(70%)		
General Notes							



University: University of Anbar College: CS & IT Department: Information Systems Stage: Forth Instructor Name: Academic status: Qualification: Place of work: Anbar University

Course Weekly Outline

4			Lab.	
Vee	Date	Topics Covered	Experiment	Notes
k			Assignments	
1		Introduction		
1		Historical Notes		
2		Computer Network Types, Topologies, and the	Sominor	
		OSI Model	Seminar	
3		Common Network Protocols and Ports	Seminar	
5		Radio Frequency and Antenna Technology	Seminar	
		Fundamentals Standards and Certifications for		
Δ		Wireless Technology IEEE 802.11		
–		Terminology and Technology Computer		
		Network Infrastructure Devices		
		Cellular Communication Technology Site	Seminar	
5		Survey, Capacity Planning, and Wireless		
5		Design Understanding Network Traffic Flow		
		and Control		
6		Introduction to Mobile Device Management	Seminar	
7		Mobile Device Policy, Profiles, and	Seminar	
/		Configuration		
8		Implementation of Mobile Device Technology	Seminar	
9		Mid Examination		
10		Mobile Device Operation and Management	Seminar	
10		Concepts		
11		Mobile Device Technology Advancements,	Seminar	
12		Requirements, and Application Configuration	Seminar	
13		Mobile Device Security Threats and Risks	Seminar	
14		Android Application Design	Seminar	
15		Final Examination		

Instructor Signature:

TEMPLATE FOR COURSE SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

COURSE SPECIFICATION

This Course Specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the programme specification.

College of Computer Science &			

10. Learning Outcomes, Teaching ,Learning and Assessment Method

A- Knowledge and Understanding

- A1. Gain the ability and skill to build C# program and solving different problem.
- A2- Acquire the skills of advance problem analysis.
- A3- Acquire the skills of solving a complex mathematical concept and build a program for them.

B. Subject-specific skills

- B1. summer training
- **B2.** Graduate Research
- **B3.** Scientific Reports

Teaching and Learning Methods

Quizzes and monthly test.

Exercises and activities in the classroom and Homework. Guide students to some websites to benefit from them.

Assessment methods

- Participation in the classroom.
- Presentation of activities
- Semester and final exams and activities.

C. Thinking Skills

- C1. Develop the ability of students to work on the Homework and deliver them on time.
- C2. Analyze the problem Programmatically and find solutions based on the expected results.
- C3. Development the ability of students for discussion.

Teaching and Learning Methods

- the lecture Management in an applied manner linked to the reality of daily • life to attract the student to the topic of the lesson without moving away from the core of the topic so that the material is flexible and capable of understanding and analysis.
- Assigning the student some group activities and duties.
- Allocating a percentage of the grade for daily assignments and tests.

Assessment methods

- Effective participation in the classroom is evidence of the commitment and responsibility of students.
- Commitment to the final deadline to submit assignments and research.
 Quarterly and final exams reflect the commitment and achievement of knowledge and skills.

D. General and Transferable Skills (other skills relevant to employability and personal development)

D1. Develop the ability of students to deal with technical means.D2. Develop the ability of students to deal with the Internet and multiple media.D3. Develop the ability of students to deal with knowledge sharing.

11. Cour	11. Course Structure						
Week	Hours	ILOs	Unit/Module orTopic Title	Teaching Method	Assessment Method		
1	4	String and Characters	Fundamentals of Strings string Constructors Comparing strings Locating Characters and Substrings in strings	Theory+Practical	General questions and discussion		
2	4	String	Extracting Substrings from strings Concatenating strings Miscellaneous string Methods	Theory+Practical	General questions and discussion or an exam		
3	4	Characters	Fundamentals of Characters Char Methods	Theory+Practical	General questions and discussion		
4	4	Advanced String	Regular Expressions	Theory+Practical	General questions and discussion		
5	4	Advanced String	Complex Regular Expressions Regex Methods Replace and Split	Theory+Practical	Debate+quiz		
6	4	Structures	Introduction to Structures Structures with Constructors Work with	Theory+Practical	General questions and discussion		

			structures		
7	4	Collections	Introduction to Collections List Collection	Theory+Practical	General questions and discussion or an exam
8		Mi	d-Exam		Mid-Exam
9	4	LINQ Providers	Querying an Array of int Values Using LINQ Querying an Array of Employee Objects Using LINQ	Theory+Practical	group assignments
10	4	LINQ Providers	Querying a Generic Collection Using LINQ		General questions and discussion
11	4	Files	Computer Files Files Categories Input Files Outputs Files Append to Files	Theory+Practical	General questions and discussion
12	4	Windows Form Application	Form Buttons textbox LabelBox	Theory+Practical	General questions and Quiz
13	4	Windows Form Application	Checkbox RadioButtons Menu	Theory+Practical group assignmen	
14	4	Classes	Introduction to classes Class with Constructors Work with classes	Theory+Practical	Debate
15	4	Fin	al Exam		Final Exam

12. Infrastructure

Required reading: · CORE TEXTS · COURSE MATERIALS · OTHER Paul J. Deitel and Harvey Deitel. 2016. C# 6 for Programmers (6th Edition) (6th. ed.). Prentice Hall Press, USA.

Special requirements (include for example workshops, periodicals, IT software, websites)	
Community-based facilities (include for example, guest Lectures, internship, field studies)	

13. Admissions				
Pre-requisites				
Minimum number of students	10			
Maximum number of students	34			



University: Anbar College: CS & IT Department: Computer Science + Information Technology Stage: 4th Year Instructor name: Dr. Belal Al-Khateeb Academic status: Asst. Prof. Qualification: PhD Place of work: University of Anbar

Course Weekly Outline Course Name: Artificial Intelligence I

Course Instructor	Dr. Belal Al-Khateeb					
E-mail	belal@comp	belal@computer-college.org				
Title	Asst. Prof.					
Course Coordinator	Dr. Belal Al-	-Khateeb				
Course Objective	 Understanding of AI definitions, characteristics and types. Distinguishing between AI search techniques. Designing smart systems for solving daily life problems. 					
Course Description	This course aims to make students know about AI and how to solve problems by using blind search techniques and resolution methods.					
Textbook	Artificial Intelligence: A Modern Approach, Stuart Russell and Peter Norvig, Pearson Education 2010.					
References	Artificial Intelligence: Structures and Strategies for Complex Problem Solving, George F. Luger, Addison-Wesley, 2008					
	Term Tests	Laboratory	Quizzes	Project	Final Exam	
Course Assessments	25%	15%	10%	5%	50%	
General Notes						



University: Anbar University: Anbar College: CS & IT Department: Computer Science + Information Technology Stage: 4th Year Instructor name: Dr. Belal Al-Khateeb Academic status: Asst. Prof. Qualification: PhD Place of work: University of Anbar

Course Weekly Outline

Week	Date	Topics Covered	Lab. Experiment Assignments	Notes
1		General Introduction.		
2		The History of AI.		
3		Systematic Search: basic graph concepts; state space representation of problems.		
4		Depth-First Search.		
5		Breadth-First search.		
6		Hybrid Search.		
7		Predicate logic: basic concepts and definitions		
8		Predicate logic: basic concepts and definitions		
9		Mid Term Exam		
10		Propositional logic and resolution in proposional logic;		
11		Horn clauses; unification		
12		Clause normal form.		
13		Modus-ponens and resolution inference rules in predicate logic.		
14		Control strategies for resolution inference (problem solving).		
15		Control strategies for resolution inference (problem solving).		

Instructor Signature:

5



University: Anbar College: CS & IT Department: Stage: 4th Instructor name: Dr. Salah Awad Salman Academic status: Ass. Prof. Qualification: PhD Place of work:

Course Weekly Outline Course Name : Multimedia Computing I

Course Instructor	Dr. Salah	Awad Salmai	n							
E-mail	Salah_eng1996@yahoo.com									
Title										
Course Coordinator										
Course Objective	 أ. تغطي هذه المادة الإساس النظري لنظم المعلومات من جانب الإوساط (النص. رسم. الصورة. الصوت والفديو) ب.و ان يعرف معلومات عن كل نوع من الاوساط) طرق ادخالها ومعالجتها واخراجها). ج. ان يفهم كيفية التحويل للاوساط من الشكل المدخل الى الشكل الذي يعالج بالحاسبة وكذلك انواع الصيغ التي يخزن بها في الحاسبة. د. ان يفهم الطالب الاسس التي يتم ضغط الاوساط والفائدة من ذلك. 									
Course Description	Introduction to Multimedia computing, Multimedia Systems, Components of a Multimedia System, Multimedia Data Basics Analog and Digital Signal Conversion, Presentation of text and graph, Presentation of still image and digital audio, Presentation of video, Digital Audio Synthesis, MIDI, Basic Algorithms Compression, Graphic/Image Data Structures, Basics of Video Spatial and Frequency Domain, Image Compression, Video compression, Audio compression									
Textbook	Fundamentals of Multimedia, Ze-Nian Li, Mark S. Drew, Prentice Hall, 2003(ISBN: 0130618721									
References	Multimedia Module No: CM0340 c David Marshall 2013									
	TermTests	Laboratory	Quizzes	Project	Final Exam					
Course Assessments	30%	10%	5%	5%	50%					
General Notes										



University: Anbar College: CS & IT Department: Stage: 4th Instructor name: Dr. Salah Awad Salman Academic status: Ass. Prof. Qualification: PhD Place of work:

Week	Date	Topics Covered	Lab. Experiment	Notes
1		Introduction to Multimodia computing	Assignments	
1				
2		Multimedia Systems		
3		Components of a Multimedia System		
4		Multimedia Data Basics		
5		Analog and Digital Signal Conversion		
6		Presentation of text and graph		
7		Presentation of still image and digitalaudio		
8		Presentation of video		
9		Digital Audio Synthesis		
10		Graphic/Image Data Structures		
11		Basics of Video		
12		Spatial and Frequency Domain		
13		Image Compression		
14		Video compression		
15		Audio compression		
16		Exam		

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Dean Signature:

Instructor Signature:



University: Anbar College: CS & IT Department: CS and IS Departments Stage: 4th Instructor name: Academic status: Qualification:. Place of work: College of CS & IT

Course Weekly Outline

Course Name: Information Security I

Course Instructor						
E-mail						
Title						
Course Coordinator						
Course Objective	To make students familiar with the basic concepts of applied cryptography, including classical cryptography and modern secret key cryptography.					
Course Description	This is an introductory undergraduate course on cryptography and data security. We will focus on classical and symmetric key cryptography, including block ciphers and their modes of operation. The course will emphasize rigorous mathematical formulations of security goals and aim to train students in spotting weaknesses in designs.					
Textbook	William Stallings, Cryptography and Network Security: Principles and Practice, 6/E, Pearson Education, Inc., 2014.					
References	 Charles P. Pfleeger and Shari Lawrence Pfleeger, Security in Computing, John Wiley & Sons, Inc., 2007. Mark Stamp, Information Security Principles and Practice, John Wiley & Sons, 2006. 					
Comme Assessments	Term Tests	Laboratory	Quizzes	Project	Final Exam	
Course Assessments	30%		10%	10%	50%	
General Notes						



University: Anbar College: CS & IT Department: CS and IS Departments Stage: 4th Instructor name: Academic status: Qualification: Place of work: College of CS & IT

Course Weekly Outline

W	_	— • • • •	Lab.	
eek	Date	Topics Covered	Experiment Assignments	Notes
		Introduction	11001611110110	
1		Historical Notes		
2		Classical Encryption Techniques		
2		Substitution Ciphers		
		Transposition Ciphers		
3		Encryption Machines		
4		Block Ciphers		
5		The Data Encryption Standard		
6		DES Cryptanalysis		
7		Groups, Rings, and Fields		
8		Modular Arithmetic		
9		Polynomial Arithmetic		
10		Finite Fields		
11		Finite Fields of the Form $GF(2^n)$		
12		AES: The Advanced Encryption Standard		
13		AES Strength		
14		Using Block and Stream Ciphers		
15		Modes of Operation		

Instructor Signature:



University: University of Anbar College: CS & IT Department: Information Systems Stage: Forth Instructor Name: Academic status: Qualification: Place of work: Anbar University

Course Weekly Outline

Course Name: Web Application Development I

Course Instructor						
E-mail						
Title						
Course Coordinator						
Course Objective	Give the student programming language to					
Course Objective	design ar	nd control v	web app	lication.	-	
	Give ove	rview abou	t Asp.N	et and .N	et	
	Framewo	ork, apply 1	the First	Asp.Net		
	Program	, Explain A	SP.NET	State		
Course Description	Manager	nent, ASP.	NET We	eb Contro	ol Tools,	
-	ASP.NET Statements. ASP.NET Data					
	Structure, ASP.NET Collection, ASP.NET					
	Data Access					
	Web Application Development , Free online					
Torrthool	resources for Microsoft .NET developers, Net-					
Textbook	Informations.com, net-informations.com (C)					
	2013					
	1- Beginning ASP.NET 4.5 in CSharp and VB,					
	Imar Spaanjaars, Joen Wiley & Suns, Inc.,					
	2013.					
References	2- Web Application Development , Free online					
	resources for Microsoft .NET developers,					
	Net-Informations.com, net-					
	info	rmations.co	om (C) 20)13	I	
	Term	Laboratory	Quizzes	project	Final	
Course Assessments	Tests			(10.0/)	Exam	
	(20%)	(10 %)	(10 %)	(10 %)	(50%)	
General Notes						



University: University of Anbar College: CS & IT Department: Information Systems Stage: Forth Instructor Name: Academic status: Qualification: Place of work: Anbar University

Course Weekly Outline

V			Lab.	
Vee	Date	Topics Covered	Experiment	Notes
ek		•	Assignments	
		What is ASP.NET ?		
1		Deploy an ASP.NET Web Application		
2		ASP.NET View State		
		ASP.NET Session State ASP.NET CookiesASP.NET		
3		Caching		
		Web Control Tools		
		Label Control		
		Button Control		
4		Textbox Control		
		DropDownList Control		
		Listbox Control		
		Checkbox Control		
		-RadioButton Control		
		-LinkButton Control		
5		-Image Control		
		-Colander Control		
		-Treeview Control		
		Control Statements		
		-if else statements		
-		-for loop		
6		-foreach loop		
		-while loop		
		-switch case		
		-Exceptions		
1		Mid Exam		
8		Recursion, Definition		
Q		Trees, Tree Structure,		
7		Binary Tree, Other types of trees		
10		Tree Traversing, Trees Representation, General Tree,		
10		Binary Search Tree		
		Collections		
11		-ArrayList		
		-HashTable		
		-Stack		
12		-Queue		
		-Array		
13		ADO.NET Architecture, Advantages of ADO.Net		
		Disconnected Data Access Architecture		
14		ASP.NET Connection String		
		First ASP.NET Database Program		
15		Final Exam		



University: Anbar College: CS & IT Department: Computer Science + Information Technology Stage: 4th Year Instructor name: Dr. Belal Al-Khateeb Academic status: Asst. Prof. Qualification: PhD Place of work: University of Anbar

Course Weekly Outline Course Name: Artificial Intelligence I

Course Instructor	Dr. Belal Al-Khateeb				
E-mail	belal@computer-college.org				
Title	Asst. Prof.				
Course Coordinator	Dr. Belal Al-	-Khateeb			
Course Objective	 Understanding of AI definitions, characteristics and types. Distinguishing between AI search techniques. Designing smart systems for solving daily life problems. 				
Course Description	This course aims to make students know about AI and how to solve problems by using blind search techniques and resolution methods.				
Textbook	Artificial Intelligence: A Modern Approach, Stuart Russell and Peter Norvig, Pearson Education 2010.				
References	Artificial Intelligence: Structures and Strategies for Complex Problem Solving, George F. Luger, Addison-Wesley, 2008				
	Term Tests	Laboratory	Quizzes	Project	Final Exam
Course Assessments	25%	15%	10%	5%	50%
General Notes					



University: Anbar University: Anbar College: CS & IT Department: Computer Science + Information Technology Stage: 4th Year Instructor name: Dr. Belal Al-Khateeb Academic status: Asst. Prof. Qualification: PhD Place of work: University of Anbar

Course Weekly Outline

Week	Date	Topics Covered	Lab. Experiment Assignments	Notes
1		Heuristic Search: Heuristic Functions.	0	
2		Hill Climbing Algorithm.		
3		Best-First Search Algorithm.		
4		Cost Functions.		
5		A* Algorithm.		
6		Properties of Heuristic Functions.		
7		Search in Games: Introduction.		
8		Min-Max Algorithm.		
9		Mid Term Exam		
10		Alpha-Beta Search Procedure; Enhancement to Game Search.		
11		Expert Systems: Structure; Rule Based Expert Systems.		
12		Control Strategies in Rule Based Production Systems: Backward Chaining and its Implementation.		
13		Pure Forward Chaining and its Implementation; Rule- Cycle Hybrid Control Strategy and its Implementation.		
14		Uncertaininty in Expert Systems: Representing Probabilities in Rules; Combining Evidence.		
15		Other Approaches to Expert System Design: Decision Lattices; And-Or-Not Lattices.		

Instructor Signature:

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University: Anbar College: CS & IT Department: Stage: 4th Instructor name: Dr. Salah Awad Salman Academic status: Ass. Prof. Qualification: PhD Place of work:

Course Weekly Outline Course Name: Multimedia Computing II

Course Instructor	Dr. Salah Awad Salman				
E-mail	Salah_eng	1996@yahoo	.com		
Title					
Course Coordinator					
Course Objective	 أ. تغطي هذه المادة الإساس النظري لنظم المعلومات من جانب الأوساط (النص. رسم. الصورة. الصوت والفديو) ب.و ان يعرف معلومات عن كل نوع من الأوساط) طرق ادخالها ومعالجتها واخراجها). ج. ان يفهم كيفية التحويل للأوساط من الشكل المدخل الى الشكل الذي يعالج بالحاسبة وكذلك انواع الصيغ التي يخزن بها في الحاسبة. د. ان يفهم الطالب الأسس التي يتم ضغط الأوساط والفائدة من ذلك. 				
Course Description	Media Protection, Media Retrieval, Media Distribution Across Internet, Media Communications, Internet elephony and Teleconference, Mobile Multimedia Service Over Wireless Networks				
Textbook	Fundamentals of Multimedia, Ze-Nian Li, Mark S. Drew, Prentice Hall, 2003(ISBN: 0130618721				
References	Multimedia Module No: CM0340 c David Marshall 2013				
a	TermTests	Laboratory	Quizzes	Project	Final Exam
Course Assessments	30%	10%	5%	5%	50%
General Notes					



University: Anbar College: CS & IT Department: Stage: 4th Instructor name: Dr. Salah Awad Salman Academic status: Ass. Prof. Qualification: PhD Place of work:

Week	Date	Topics Covered	Lab. Experiment Assignments	Notes
1		Media Protection		
2		Media Encryption		
3		Media Watermark		
4		Information Retrieval,		
5		Image Retrieval		
6		Video Retrieval		
7		Audio Retrieval		
8		Media Distribution Category, Media Streaming, Streamed Media On Demand Delivery		
9		Streamed Media Internet Broadcast, Streamed Media Server and Client/Player,		
10		Streaming Service System, Scenario and Issue of IP Telephony		
11		Scenario and Issue of IP Teleconference, ITU and IETF Standards for IP Telephony/conf.		
12		H.323 Standard Series for IP Multimedia Comm, T.120 Standard Series for Data Conferencing SIP/SDP (Session Initiation/Description Protocol)		
13		Mobility and Universal Services, Wireless LAN (Local Area Network), Wireless WAN (Wide Area Network)		
14		3G Wireless Networks and IMT-2000, FOMA and DoCoMo Mobile Services		
15		WAP (Wireless Application Protocol), Techniques and Challenges in Mobile Multimedia		
16		Exam		

Instructor Signature:

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University: Anbar College: CS & IT Department: CS and IS Departments Stage: 4th Instructor name: Academic status: Qualification: Place of work: College of CS & IT

Course Weekly Outline

Course Name: Information Security II

Course Instructor					
E-mail					
Title					
Course Coordinator					
Course Objective	To make students familiar with the basic concepts and applications of public key cryptography and hash functions.				
Course Description	In the second semester, our focus will mainly be directed to public key cryptography. We will cover topics like hash functions, digital signatures, asymmetric encryption, RSA, public-key infrastructure, key distribution, and various applications. Indeed, we will cover topics like viruses, worms, and operating systems security.				
Textbook	William Stallings, <i>Cryptography and Network Security:</i> <i>Principles and Practice</i> , 6/E, Pearson Education, Inc., 2014.				
References	Charles P. Pfleeger and Shari Lawrence Pfleeger, Security in Computing, John Wiley & Sons, Inc., 2007. Mark Stamp, Information Security Principles and Practice, John Wiley & Sons, 2006.				
	Term Tests	Laboratory	Quizzes	Project	Final Exam
Course Assessments	30%		10%	10%	50%
General Notes		1	L	1	1



University: Anbar College: CS & IT Department: CS and IS Departments Stage: 4th Instructor name: Academic status: Qualification:. Place of work: College of CS & IT

Course Weekly Outline

V			Lab.	
Veel	Date	Topics Covered	Experiment	Notes
×			Assignments	
		Issues for Symmetric Key Cryptography:		
1	20/2/2016	Key Distribution		
2	27/2/2016	Random Number Generation		
		Prime Numbers		
3	5/3/2016	Primality Tests		
4	12/3/2016	Public-Key Cryptography I: General Concepts		
		RSA System		
5	19/3/2016	RSA Security		
		Public-Key Cryptography II:		
6	26/3/2016	Exchanging Secret Session Keys		
7	2/4/2016	Diffie-Hellman System		
		Public-Key Cryptography III:		
8	9/4/2016	Constructing Digital Signatures		
9	16/4/2016	El-Gamal System		
		Hashing for Message Authentication		
10	23/4/2016	Cryptographic Hash Functions		
11	30/4/2016	MACs Schemes		
12	7/5/2016	Malware: Viruses		
13	14/5/2016	Worms		
14	21/5/2016	Trusted Systems		
		Mounting Targeted Attacks with		
15	28/5/2016	Trojans and Social Engineering		



University: University of Anbar College: CS & IT Department: Information Systems Stage: Forth Instructor Name: Academic status: Qualification: Place of work: Anbar University

Course Weekly Outline

Course Name: Web Application DevelopmentII

Course Instructor					
E-mail					
Title					
Course Coordinator					
Course Objective	Give the manage	student pr Database o	ogramm n web aj	ing langupling languplication	age to 1.
Course Description	Give overview about ASP.NET Data Providers, Command, Dataset, Dataset row count, ASP.NET Database Programming, Stored Procedures, ASP.NET GridView, DetailsView, ASP.NET Repeater, ASP.NET Repeater, ASP.NET Communications, ASP.NET Excel Automation,				
	ASP.NE'	T Data Acc	ess		
Textbook	Web Application Development , Free online resources for Microsoft .NET developers, Net- Informations.com, net-informations.com (C) 2012				
References	 1- Beginning ASP.NET 4.5 in CSharp and VB, Imar Spaanjaars, Joen Wiley & Suns, Inc., 2013. 2- Web Application Development , Free online resources for Microsoft .NET developers, Net-Informations.com, net- informations.com (C) 2013 				
Course Assessments	Term Tests	Laboratory	Quizzes	project	Final Exam
~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~	(20%)	(10 %)	(10 %)	(10 %)	(50%)
General Notes					

Course Weekly Outline


University: University of Anbar College: CS & IT Department: Information Systems Stage: Forth Instructor Name: Academic status: Qualification: Place of work: Anbar University

•			Lab.	
Vee	Date	Topics Covered	Experiment	Notes
ek	Dute		Assignments	
1		ASP.NET Connection, Sql Server Connection,		
1		OLEDB Connection, ODBC Connection		
		ASP.NET ExecuteNonQuery		
		ExecuteScalar		
2		ExecuteReader		
2		DataReader		
		DataAdapter		
		DataAdapter Commands		
3		How to Asp.Net Dataset		
5		Find Tables in a Dataset		
4		How to Asp.Net Dynamic Dataset		
		Dataset Column Definition		
5		ASP.NET DBNull Value		
5		ASP.NET single quotes		
		ASP.NET Procedure with Parameter		
6		Range of records from database		
		ASP.NET Image to Database		
7		ASP.NET Simple GridView		
,		Sorting, Paging and AutoGenerateColumns		
8		Mid Exam		
9		ASP.NET GridView Editing and GridView Delete		
		Detailsview Update		
10		Detailsview Delete		
		GridView with DetailsView		
		How to Repeater		
11		ASP.NET Repeater Templates		
		Repeater with HTML Table		
		ASP.NET Repeater Paging		
12		ASP.NET Email application		
		Email Address Validation		
13		ASP.NET File Upload		
		ASP.NET Email Attachment		
14		Export ASP.NET to Excel		
		Write content from ASP.NET to Excel		
		Read Excel file from ASP.NET		
15		Insert to Excel file from ASP.NET		
		Modify Excel file from ASP.NET		



University: of Anbar. College: CS&IT Department: of Information Systems. Stage: 4th Instructor name: Maha Mahmood Academic status: Asst. Teacher Qualification: Msc Place of work: College of CS&IT

Course Weekly Outline

Course Instructor	Maha Mahmood Jassam				
E-mail	Maha_882010@yahoo.com				
Title	Asst.Teacher				
Course Coordinator	Maha Mahmood Jassam				
Course Objective	Provide computer science students to understand the basic-to advanced concepts related to data warehousing				
Course Description	Introductory	course to Data	Warehouse	».	
Textbook	Data Warehousing . Copyright 2014 by Tutorials Point (I) Pvt. Ltd.				
References	Data Warehousing Guide with Oracle® Database. Release 2 (11.2), E10810-02. August 2009.				
	Term Tests	Laboratory	Quizzes	Project	Final Exam
Course Assessments	20%	15%	5 %	10	50%
General Notes	PROGECTS for this Course: DW and Data Mining.DW and Integration. Dimensions.eneral NotesMaterialized View. DW and Indexing.DW AI techniques.DW Architectures.Metadata. Extraction tools.ETL.				



Course Weekly Outline

W			Lab.	
/eek	Date	Topics Covered	Experiment	Notes
	1/11/2015	Data Warehousing Overview and	Assignments	
1	1/11/2013	Concepts		
-		·		
2	8/11/2015	Need for data warehousing.		
	15/11/2015	The building blocks of a Data		
3		warehouse.		
4	22/11/2015	Architecture of Data Warehouse.		
5	29/11/2015	Metadata Management.		
6	6/12/2015	Principles of Dimension Modeling:		
7	13/12/2015	Introduction to Dimensional Modeling,		
-	20/12/2015	Advanced Concepts.		
	20/12/2015	ETL overview, Extraction, Loading,		
8		Transformation techniques.		
	27/12/2015			
9	27/12/2015	Information Access and Delivery .		
	3/1/2016	Matching information to classes of usors		
	5/1/2010	OLAD the need Design of the OLAD		
10		OLAP – the need. Design of the OLAP		
		database, OLAP.		
	10/1/2016	Design of the OLAP database OLAP		
11	10/1/2010	Design of the OLAP database, OLAP.		
12	17/1/2016	Operations: slice, dice, rollup, drill-down etc.		
12	24/1/2016	OLAP implementations.		
15				
14	31/1/2016	Others Analysis Techniques		
15	7/2/2016	Useful Applications of Data Warehouses		

Instructor Signature:

Dean Signature:



University: Anbar College: CS & IT Department: computer network system department Stage: 4th Year Instructor name: Dr. Ahmed Noori Academic status: Asst. Prof. Qualification: PhD Place of work: University of Anbar

Course Weekly Outline

Course Name: Research methodology

Course Instructor	Asst. Prof. Dr. Khalid Shaker				
E-mail	khalidalhity@uoanbar.edu.iq				
Title	Research methodology				
Course Coordinator					
Course Objective	 -Studies with this object in view are termed as exploratory or formative research studies -Studies with this object in view are known as descriptive research studies -Studies with this object in view are known as diagnostic research studies 				
Course Description	منهج البحث يعني الاتباع، فالمنهج هو عبارة عن منظومة محددة يتم اتباعها لغرض معين، وكذلك مناهج البحث العلمي عبارة عن الطريق الذي سيسلكه الباحث او الطالب في جمع وترتيب المعلومات داخل بدر استه وفقاً لمتطلبات الدر اسة وطبيعة المعلومات وتحمل أيضا كلمة مناهج صيغة الجمع التي توحي بأن هناك أكثر من نوع ضمن هذا المصطلح العام				
Textbook	RESEARCH METHODOLOGY: TOOLS AND TECHNIQUES ISBN 978-606-93502-7-0 Buzau, Al. Marghiloman 245 bis, 120082				
References	RESEARCH METHODOLOGY: TOOLS AND TECHNIQUES ISBN 978-606-93502-7-0 Buzau, Al. Marghiloman 245 bis, 120082				
Course Assessments	Term Tests 20%	Laboratory 15%	Quizzes	Project 5%	Final Exam 50%
General Notes	-				



University: Anbar College: CS & IT Department: computer network system department Stage: 4th Year Instructor name: Dr. Ahmed Noori Academic status: Asst. Prof. Qualification: PhD Place of work: University of Anbar

Week	Date	Topics Covered	Lab. Experiment Assignments	Notes
1		Definition of Research methodology		
2		Formulating the Research Problem		
3		Formulating the Research Objective		
4		Extensive Literature Survey		
5		Developing the Research Hypothesis		
6		Preparing the Research Design		
7		Determining the Research Design		
8		Collecting the Research Data		
9		الامتحـــــان الشهري		
10		Analyzing the Research Data		
11		Execution of the Project		
12		Hypothesis Testing		
13		Generalization and Interpretation		
14		Analysis of Data		
15		Preparing of the Report or Presentation of the Result		

Course Weekly Outline

Instructor Signature: Signature: Dean