



**الخطة الدراسية لبرنامج بكالوريوس
قسم هندسة البرمجيات
كلية علوم الحاسب والمعلومات**

المعتمدة بقرار مجلس كلية علوم الحاسب والمعلومات
بجلسته التاسعة في ١٤/٤/٢٨ هـ
وبقرار مجلس الجامعة بجلسته الثامنة
في ١٤/٦/٢٨ هـ

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

.....
..... : :
..... : :
..... : :
..... : :
..... : :
..... : :
..... : :
..... : .
..... : .
..... : -
..... : .
..... : .
.....
.....
..... -
..... -

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

:

/ . -

/ . . -

/ . -

/ . -

/ . -

.

.

مذكرة
مذكرة مرفوعة إلى مجلس الجامعة
الخطة الدراسية لبرنامج بكالوريوس
قسم هندسة البرمجيات
كلية علوم الحاسب والمعلومات

./ / / / /

//

" Software Engineering Department "

// /

//

Software

"

//

" Engineering Department

//

/

"

"

"

"

"

"

Tools

Techniques

:

.

Reliability

Quality Assurance

() (').

:

Imperial College

-

Stuttgart

-

Ottawa

-

-

Queensland University

-

/

- .
- .
//

.
.
: :

/ .
/ .
.

()

.

()

:

١. أهداف الخطة الدراسية:

:

(

(

(

(

٢. الخصائص العامة للخطة:

:

-

-

-

-

- Software Tools
- Software Systems Development
- .Databases & Its Applications
- E- system
- Systems & Networks Administration
- Internet Technologies & Solutions

٣- تصميم المنهج الدراسي:

() +

(
:

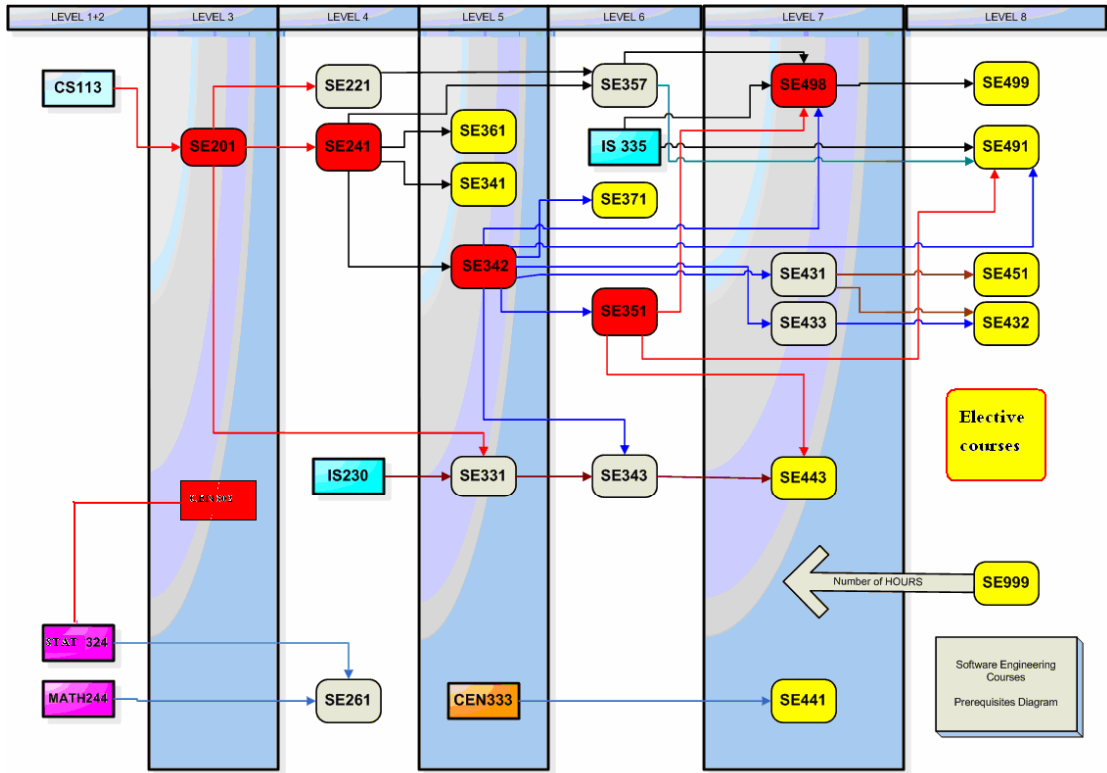
-
-
-
-
-

-
-
-
-
تطوير النظم البرمجية والتطبيقية -

:

-
-
-
-
-
-
-
-

.



خطة قسم هندسة البرمجيات باللغة الانجليزية

Code	Course Name	Credit	Code	Course Name	Credit
Level -1			Level -2		
CSC 107	Introduction to Computing	3	Arab 101	Arabic Language Skills	2
CSC 112	Computer Programming -1	3	CSC 113	Computer Programming -2	4
Eng 102	English for Computer & Engineering Students	6	Eng 104	English for Computer & Engineering Students	3
IC 101	Introduction to Islamic Culture	2	Math 102	Introduction to Integral Calculus	3
Math 101	Introduction to Differential Calculus	3	Phys 104	General Physics	4
	TOTAL	17		TOTAL	16
Level -3			Level -4		
CSC 211	Data Structures	3	CSC 227	Operating Systems	3
SEN 201	Introduction to Software Engineering	3	IS 230	Introduction to Database Systems	3
Math 151	Discrete Math	3	SEN 221	Web Applications Development	3
Stat 324	Engineering Probability & Statistics	3	SEN 241	Software Requirements Engineering	3
Math 244	Linear Algebra	3	CEN 302	Computer Communications & Networks	3
Eng 110	Report Writing	2	SEN 261	Computational Management Science	3
	TOTAL	17		TOTAL	18
Level -5			Level -6		
SEN 331	Object-Oriented Software Engineering	4	IS 335	DB Architecture	3
SEN 341	Software Design and Architecture	3	SEN 351	Software Testing	3
SEN 342	Software Quality Assurance	3	SEN 357	Web Applications Engineering	3
SEN 361	Human – Computer Interaction	3	SEN 343	Software Engineering Lab 1	2
CEN 333	Computer Architecture for Computer Science	3	SEN 371	Software Engineering Project management	3
Media 205	Communication Skills	3	Arab 103	Arabic Writing	2
			IC 102	Islam and Society	2
	TOTAL	19		TOTAL	18
Level -7			Level -8		
IC 103	Economic system in Islam	2	IC 104	Political System in Islam	2
SEN 433	Software Engineering Tools and Methods	3	SEN 451	Software Maintenance	3
SEN 431	Software Measurements and Metrics	3		Department Elective 2	3
SEN 443	Software Engineering Lab 2	2		Department Elective 3	3
SEN 441	Embedded System Design	3	SEN 499	Project -2	4
	Department Elective 1	3	SEN 999	Training	1
SEN 498	Project -1	2			
	TOTAL	18		TOTAL	(15+1)

Department Electives:

The student should choose the department electives from the following courses

Course Id	Title	Credit
SEN 491	Selected Topics in Software Engineering	3
SEN 432	Advanced Software Engineering	3
IS 481	E-Commerce for Software Engineers	3
IS 455	Enterprise Resource Planning for Software Engineers	3
CSC 458	Distributed Systems and Parallel Processing	3
CSC 429	Computer Security	3
CEN 401	Queuing Systems & Simulation	

٤. آلية تطبيق الخطة :

٥. مقارنة الخطة الدراسية بالخطط المشابهة:

IEEE

ACM

//

:

-

-

-

-

....

المراجع

- 1) "Academic Software Engineering: What Is and What Could Be? Results of the First Annual Survey for International SE Programs "; Kenneth L. Modesitt , Don Bagert & Laurie Werth, IASTED International Conference Applied Informatics (AI 2001) Innsbruck, Austria February 20, 2001

(٢) دراسة استشرافية للكوادر الوطنية في تقنية المعلومات ، مشروع الخطة الوطنية لتقنية المعلومات، جمعية الحاسبات السعودية
شوال ١٤٢٤هـ - ديسمبر ٢٠٠٣م

- 3) Computing Curricula 2004 , Joint Task Force for Computing Curricula, A cooperative project of ACM , AIS & IEEE-CS , November 2004
- 4) Software Engineering 2004:Curriculum Guidelines for Undergraduate Degree Programs in Software Engineering. A Volume of the Computing Curricula Series The Joint Task Force on Computing Curricula IEEE Computer Society and ACM, August 23, 2004

أ- المقررات الإجبارية

: :
(, ,) : :
:

:

Course Code: SEN 201
Engineering
Credit Hours: 3(3,0,1)
Prerequisites: CSC113

Course Title: Introduction to Software
Level: 3-Third

Course Description:

This is a central course, presenting the basic principles and concepts of software engineering and giving firm foundation for many other courses in the field. It gives broad coverage of the most important terminology and concepts in the software engineering; basic understanding of software life cycle, software processes, requirements engineering processes; introduction to agile and extreme programming, basic modeling and design; basic of project management, software cost estimation, configuration management, and testing.

Textbooks:

1. Ian Sommerville: "Software Engineering", 7th edition, Addison-Wesley, 2005.
2. Roger S. Pressman: "Software Engineering, a Practitioner's Approach", Sixth Edition; McGraw-Hill; 2005.
3. Jeffrey A. Hoffer, Joey F. George, and Joseph S. Valacich : "Modern Systems Analysis and Design"; Fourth Edition; Pearson Education, Inc.; 2005.
4. Stephen Schach, "Classical and Object-Oriented Software Engineering", 7/e, Vanderbilt University, McGraw-Hill, 2007.

/ / ()

--	--

(, ,) : : :
 :
 :
 :
 :
 .HTML
 - CSS -
 - :DHTML -
 PHP : - -
 .NET Framework ASP CGI

Course Code: SEN221

Course Title: Web Applications Development

Credit Hours: 3(3,0,1)

Level: 4-Fouth

Prerequisites: SEN 201

Course Description:

A basic introduction to the internet and WWW. Static Web page development using HTML. Developing web pages and formatting with tables, images and frames. Using CSS (Cascading Style sheets). Introduction to client side scripting, using JavaScript. DHTML: Dynamic aspects of site design, animation, caching, event driven scripting and browser compatibility. The basics of XML, building simple XML files. Web Services, feeds and blogs. Scripting on the server side: PHP and an introduction to other alternative scripting languages such as CGI, ASP and .NET Framework.

Textbooks:

1. Ralph Moseley: "Developing Web Applications"; John Wiley, 2006
2. [Adam Nathan](#): "Windows Presentation Foundation Unleashed (WPF)"; SAMS; 2007

/ / ()

--	--

Course Code: SEN241
Engineering

Course Title: Software Requirements

Credit Hours: 3 (3,0,1)

Level: 4-Fourth

Prerequisites: SEN201

Course Description:

The requirements Engineering Process - Elicitation of requirements - Functional and non functional requirements - System services and constraints – Quality of Requirements - Requirements traceability matrix - Metrics for non-functional requirements - Use case description - Use case and context diagrams - Software Requirements Specification -IEEE Standard - Requirements for agile developments - Requirements for various systems: embedded systems, web-based systems, business systems, etc. – Requirements management. Students participate in a group project on software requirements engineering.

Textbooks:

1. Axel van Lamsweerde: “Requirements Engineering: from System Goals to UML Models to Software Specifications”; John Wiley 2007.
 2. Linda I. Shafer and Mike Christie: “Software Requirement: A Standards-Based Guide”; John Wiley 2005.
 3. Robertson, S. & Robertson, J: “Mastering the Requirements Process”; Addison-Wesley; 1999.
 4. Gerald Kotonya, Ian Sommerville: “[Requirements Engineering: Processes and Techniques](#)”; John Wiley; 1998
 5. Ian K. Bray: “An Introduction to Requirements Engineering, Addison-Wesley, 2002.
 6. G. Kotonya and I. Sommerville: “*Requirements Engineering: Processes and Techniques*”, John Wiley & Sons, 2000.
 7. R.R. You, *Effective Requirements Practices*, Addison-Wesley, 2001.
- IEEE Std. 1233, 1998 Edition IEEE Guide for Developing System Requirements Specifications
 - IEEE Std. 830-1998 IEEE Recommended Practice for Software Requirements Specifications
 - Certified Software Development Professional (CSDP) - IEEE

/ / ()

--	--

:
(, ,) :

- :

:

- :

Course Code: SEN331
Engineering

Course Title: Object-Oriented Software

Credit Hours: 4 (4,0,1)

Level: 5-Fifth

Prerequisites: SEN201, IS230

Course Description:

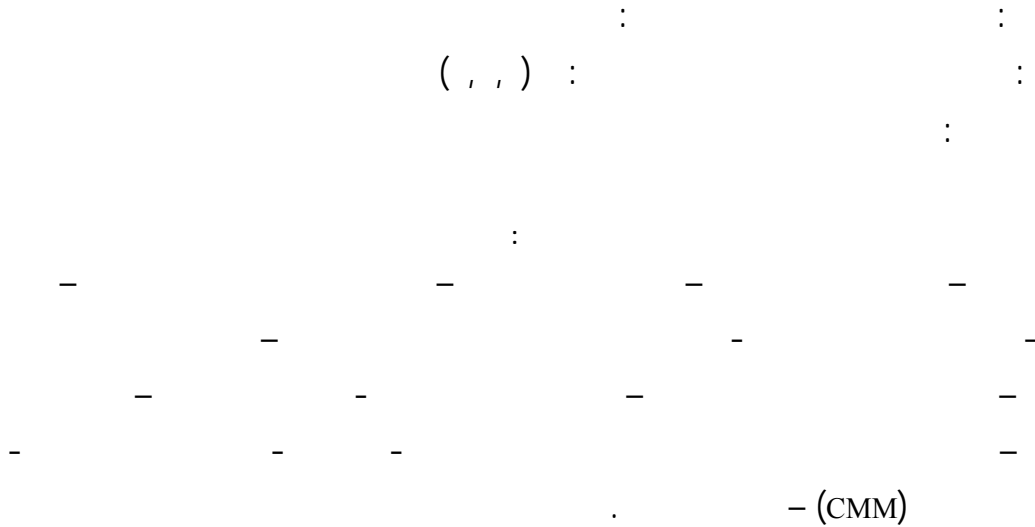
Review of Object-Oriented Concepts– More modeling with UML: Structural Modeling, Behavioral Modeling – System architecture design, – User Interface Design – Object Persistence Design - Class and Method Design - Object-Oriented Testing. Students participate in a group project on object-oriented software engineering.

Textbooks:

1. John W. Satzinger, Robert Jackson, Stephen D. Burd: "[Object-Oriented Analysis and Design with the Unified Process](#)"; Course Technology, 2002.
2. Bennet S., McRobb S., Farmer, R., *Object Oriented Systems Analysis and Design using UML*, 3rd edition, McGraw-Hill, 2006.
3. Lethbridghe T., Lagraniere R., *Object Oriented Software Engineering (using UML and Java)*, 2nd edition, McGraw-Hill, 2005.
4. Larman C.: *Applying UML and Patterns – An Introduction to Object-Oriented Analysis and Design and Iterative development*, 3rd edition, Prentice Hall, 2005.
5. John W. Satzinger, Tore U. Orvik: "*The Object-Oriented Approach: Concepts, Systems Development, and Modeling with UML*"; Course Technology, 2001.
6. Stephen Schach, "*Classical and Object-Oriented Software Engineering*", 7/e, Vanderbilt University, McGraw-Hill, 2007.

/ / ()

--	--



Course Code: SEN342
 Assurance
Credit Hours: 3 (3,0,1)
Prerequisites: SEN241

Course Title: Software Quality

Level: 5-Fifth

Course Description:

Quality concepts – Software quality assurance - Software quality management - Quality planning and control – Quality manual – Product and process standards - Internal and external software quality attributes - Software reviews, walkthrough and inspection – Statistical software quality assurance – Software configuration management - Software reliability – International Software quality models, e.g. ISO 9000 Quality standards and ISO 9000-3, etc.. – Software process improvement – The Capability Maturity Model (CMM), Balanced scorecards. Students participate in a group project on Software quality assurance.

Textbooks:

1. Ernest Wallmuller: “Software Quality Assurance: A practical approach”; Prentice Hall. 1994
2. Roger S. Pressman: “Software Engineering, a Practitioner’s Approach”; Sixth Edition; McGraw-Hill; 2005.
3. H. van Vliet: “Software Engineering” 2nd. Edition, John Wiley, 2000
4. J. W. Horch: “Practical Guide to Software Quality Management”, Artech House Publishers, 2003.
5. S.H. Kan: “Metrics and Models in Software Quality Engineering”, second ed., Addison-Wesley, 2002.
6. G.C. Schulmeyer and J.I. McManus: “Handbook of Software Quality Assurance”, third ed., Prentice Hall, 1999.

/ / ()

--	--

Course Code: SEN351

Course Title: Software Testing

Credit Hours: 3 (3,0,1)

Level: 6-Sixth

Prerequisites: SEN342

Course Description:

Introduction to testing - Software validation and verification – Test cases – Managing the testing process: developing test plans, test scripts and test cases, reports - Unit, functional, and acceptance testing - Black-box and white-box testing - Equivalence partitioning - Path testing – Cyclomatic complexity - Integration testing – System Testing: Regression testing; Interface testing; Stress testing; Incremental testing; Interaction and Usability testing ... etc. - Object-oriented testing - Software testing tools - Alpha, beta, and user acceptance testing – Testing in agile development environment - Automated testing. Students participate in a group project on software testing.

Textbooks:

1. Dorothy Graham, Erik van Veenendaal, etal: “Foundations of Software Testing”; Thomson Learning; 2007
2. Boris Beizer: “Black-Box Testing: Techniques for Functional Testing of Software and Systems”; John Wiley; 1995.
3. Marc Roper: “Software Testing”; McGraw-Hill, 1994.
4. Marnie L Hutcheson: “Software Testing Fundamentals: Methods and Metrics”; John Wiley 2003.
5. Mauro Pezze, Michal Young :”Software Testing and Analysis: Process, Principles and Techniques”; John Wiley; 2008
6. P.C. Jorgensen, "Software testing: a craftsman's approach", 2nd ed., CRC Press, 2004.
7. B. Beizer, *Software Testing Techniques*, International Thomson Press, 1990
8. C. Kaner, J. Falk, and H.Q. Nguyen, *Testing Computer Software*, second ed., John Wiley & Sons, 1999
9. R. Patton, "Software Testing", Sams Publishing, 2nd ed., 2006.
10. W. Hetzel, "The complete guide to software testing", Wiley, 1988.
11. G.J. Myers, T. Badgett, T.M. Thomas and C. Sandler, "The Art of Software Testing", 2nd ed., Wiley, 2004.

/ / ()

--	--

(, ,) :

- :

:

Course Code: SEN357
Engineering

Course Title: Web Applications

Credit Hours: 3(3,0,1)

Level: 6-Sixth

Prerequisites: SEN221, SEN241

Course Description:

This covers business aspects, market drivers and site design reflecting interdisciplinary influences on web applications development. The course explains how Web Engineering differs from software engineering, detailing the rapid prototyping and agile development methods mandated by short lead times, emphasis on interactivity and multimedia, and the increased importance of user interfaces and human-computer interaction. It covers: the systematic development of Web applications; requirement engineering for Web applications; modeling; Architectures of Web Applications; technology driven design; testing, operation and maintenance of Web applications. Special emphases should be given to: Web project management, development processes, usability, performance and security of Web applications.

Textbooks:

1. Gerti Kapel, Birgitt Prol, Siegfried Reich, and Werner Retschitzegger: "Web Engineering"; John Wiley, 2006.
2. Roger S. Pressman: "Software Engineering, a Practitioner's Approach"; Sixth Edition; McGraw-Hill; 2005.

/ / ()

--	--

(, ,) :

- :

:

.NET

Course Code: SEN343

Course Title: Software Engineering Lab

I

Credit Hours: 2(0,4,0)

Level: 6-Sixth

Prerequisites: SEN331, SEN342

Course Description:

A project course where students practice what they have learned or are learning in class, through directed study. The class is an ongoing project in which students register to participate as engineers in a specific role in accordance to individual levels of expertise and profile. More emphases should be given in producing a small software application using a simple middleware architectures such as .NET and applying the software quality assurance & testing concepts.

/ / ()

--	--

Course Code: SEN371
Project Management
Credit Hours: 3(3,0,1)
Prerequisites: SEN342

Course Title: Software Engineering

Level: 6-Sixth

Course Description:

Project planning, cost estimation, earned-value analysis techniques and scheduling. Project management tools. Factors influencing productivity and success. Productivity metrics, Analysis of options, risk management and dynamic adjusting of project plans. Planning for change. Management of expectations. Release and configuration management. Software process standards and process implementation. Using standards in project management, including ISO10006 (project management quality) and ISO12207 (software development process) along with CMM model. Software contracts and intellectual property. Approaches to maintenance and long-term software development. Case studies of real industrial projects.

Textbooks:

1. Bob Huhes, Mike Cotterell: "Software Project Management"; McGraw Hill; 2002
2. Mark Christensen and Richard H. Thayer: "The Project Manager's Guide to Software Engineering's Best Practices"; John Wiley, 2002.
3. Pat Hall and Juan Fernandez-Ramil: "Managing the Software Enterprise", Thomson Learning; 2007

/ / ()

--	--

(, ,) : :
:

Course Code: SEN433
Tools & Methods
Credit Hours: 3(3,0,1)
Prerequisites: SEN342

Course Title: Software Engineering

Level: 7-Seventh.

Course Description:

The objective of this course is to guide students to understand and use different models, tools, and computer-aided software engineering, techniques, methodologies in developing application systems. This course introduces the students to different types of software development life cycles, new trends in Methodologies and programming: RAD, Prototyping, Agile, eXtreme etc. The considerations involved in choosing which methodology to use. Examples and cases will be drawn from actual systems projects that enable students to learn in the context of solving problems

Textbooks:

1. I. Sommerville: "Software Engineering", seventh ed., Addison-Wesley, 2005.

/ / ()

--	--

: :
 (, ,) : :
 :

Course Code: SEN431

Course Title: Software Measurements and Metrics

Credit Hours: 3 (3,0,1)

Level: 7-Seventh

Prerequisites: SEN342

Course Description:

Measurements and metrics in software industry – Measurements of product, process and resource attributes – Planning a measurements program - Goal/Question/Metric - Collection and analysis of software empirical measurements - Building software metrics - Cost estimation models, Function points, COCOMO, and Use case points – Measurements and metrics of object oriented software: Coupling and cohesion – Tools for software measurements – Benchmarking. Students participate in a group project on Software Measurements and Metrics.

Textbooks:

1. S.D. Conte, H.E. Dunsmore, and V.Y. Shen: “*Software Engineering Metrics and Models*”; The Benjamin Cummings Publishing Company, 1986.
 2. S.H. Kan: “*Metrics and Models in Software Quality Engineering*”, second ed., Addison-Wesley, 2002.
- ISO/IEC 14143-1 Software Measurement--Functional Size Measurement-Part1: Definition of Concepts
 - ISO/IEC 14143-2 Software Measurement--Functional Size Measurement-Conformity evaluation of software size measurement methods to ISO/IEC 14143-1:1998
 - ISO/IEC 19761 COSMIC-FFP - A Functional Size Measurement Method
 - BS ISO/IEC 20926 IFPUG 4.1 Unadjusted functional size measurement method. Counting practices manual
 - ISO/IEC 20968 Mark II Function Point Analysis Counting Manual

/ / ()

--	--

: :
 (, ,) : :
 - :
 :
 ()
 ..

Course Code: SEN443

Course Title: Software Engineering Lab II

Credit Hours: 2(0,4,0)

Level: 7-Seventh

Prerequisites: SEN351, SEN343

Course Description:

A project course where students practice what they have learned or are learning in class, through directed study. The practicum is an ongoing project in which students register to participate as engineers in a specific role in accordance to individual levels of expertise and profile. A larger project than the one in Lab I should be assigned to students and emphases is given into applying more software management and software measurements and metrics.

/ / ()

--	--

() :

/

Course Code: SEN 441
Credit Hours: 3(3,0,1)
Prerequisites: CEN333

Course Title: Embedded Systems Design
Level: 7-Seventh

Course Description:

An introduction to embedded system design - complex systems and microprocessors - The embedded design process - Formalism for system design - Introduction to instruction sets, CPUs, I/O – The Embedded computing platform – Program design and Analysis in an embedded system – Embedded operating systems – Coprocessors.

Textbooks:

- Wayne Wolf: “*Computers as Components: Principles of Embedded Computing System Design*”; Morgan Kaufmann, 2001.

/ / ()

--	--

CASE

Course Code: SEN451
Credit Hours: 3(3,0,1)
Prerequisites: SEN431

Course Title: Software Maintenance
Level: 8-Eighth

Course Description:

Students will study the four types of maintenance: corrective, adaptive, perfective, and preventive maintenance; economic implications of maintenance; managerial issues related to system maintenance such as maintenance organizational structure; quality measurement, processes related to change requests and configuration management. Topics including: Website maintenance; role of CASE tools; reverse engineering, reengineering; code restructuring and amenability measures. Students will also learn different maintenance process models such as: Boehm, Osborne, Iterative enhancement and reuse-oriented modes.

Textbooks:

1. Armstrong A. Taknang, and Penny A. Grubb: "Software Maintenance"; ITP, 1996.
2. Penny Grubb & Armstrong A Takang: "Software Maintenance Concepts and Practice"; Second Edition, World Scientific Publishing (UK) Ltd; 2003
3. Jeffrey A. Hoffer, Joey F. George, and Joseph S. Valacich : "Modern Systems Analysis and Design"; Fourth Edition; Pearson Education, Inc.; 2005.
4. Keith Bennett and Melcolter: "Software Maintenance, Research and Practice" Journal Published by John Wiley.
5. T.M. [Pigoski](#): "Software Maintenance"; John Wiley; 2001
6. T.M. Pigoski, *Practical Software Maintenance: Best Practices for Managing your Software Investment*, first ed., John Wiley & Sons, 1997.
7. K.H. Bennett, "Software Maintenance: A Tutorial," in *Software Engineering*, M. Dorfman and R. Thayer, eds., IEEE Computer Society Press, 2000.
 - o IEEE 1219 Standards: Software Maintenance
 - o ISO/IEC 14764 standards: Software Maintenance

/ / ()

--	--

: :
 (, ,) : :
 - - - :
 :

Course Code: SEN498

Course Title: Graduation Project I

Credit Hours: 2

Level: 7-Seventh

Prerequisites: IS335, SEN342, SEN57, SEN351

Course Description:

The student should take a B.Sc. project in related area to his specialization and with technical merit. This project is for two semesters, it is counted as two hours in the first semester. At the end of the semester the student submits a report describing his projects and the parts he completed in the first semester and proposed parts in the 2nd semester.

The Basic lines of the graduation project is that students should develop a significant software system, employing knowledge gained from courses throughout the curriculum. Includes development of requirements, design, implementation, testing and quality assurance. Students may follow any suitable process model, must pay attention to quality issues, and must manage the project themselves, following all appropriate project management techniques. Success of the project is determined in large part by whether students have adequately solved their customer's problem.

/ / ()

--	--

:
:
:
:

Course Code: SEN 999

Course Title: Training

Credit Hours: 1

Level:

Prerequisites: IS335, SEN342, SEN357, SEN351

/ / ()

--	--

ب- المقررات الاختيارية

() : :
:
:

Course Code: SEN491
Software Engineering

Course Title: Selected Topics in

Credit Hours: 3(3,0,1)

Level:

Prerequisites: IS335, SEN342, SEN57, SEN351

Course Description:

This course is designed to enable students to study different special topics of interest, which are carefully selected from software engineering topics as formal specification using Z-language, design patterns, component based development, etc. The contents of such a course are to be determined by the instructor and should be approved by the department.

/ / ()

--	--

: :
 () : :
 :
 :

Course Code: IS 455
 Engineers

Course Title: Enterprise Resource Planning for Software

Credit Hours: 3(3,0,1)

Level:

Prerequisites: SEN 371

Course Description:

This course covers the following topics: definition of Enterprise Resource Planning (ERP), organization, business processes, and integration. Motivation of integration, the differences between Software Development Life Cycle (SDLC) and implementation of ERP, obstacles to achieving Integrated Systems, actual benefits of Integrated Systems, the environment of ERP, the architecture of ERP, the critical success factors of ERP implementation, planning of ERP implementation, the preparation of ERP implementation, Change Management (CM), realizing and operation ERP system, and extending ERP

Textbooks:

1. Ellen Monk and Bret Wagner: *Concepts in Enterprise Resource Planning*, Thomas Course Technology, 2nd. Edition. 2006,

/ / ()

--	--

:: :
() : :
:

:

-

Course Code: IS 481 **Course Title:** E-Commerce for Software Engineers
Credit Hours: 3(3,0,1) **Level:**
Prerequisites: SEN 371

Course Description:

Types of E-Commerce; Corporate strategic planning for EC adoption; Business design/architecture for EC application; Web-based marketing strategies and models; E-Commerce Project Management; Public Policy and Legal Issues of Privacy; Socio-Technical Infrastructure for E-Commerce; Risk Management in E-Commerce Initiatives; E-Transformation; Measuring Effectiveness of E-Commerce Projects; EC and organizational change management; EC and competitiveness; Success and failure in EC implementation; Retailing in E-Commerce; Techniques of consumer behavior analysis in E-Commerce context; Advertisement in E-Commerce; E-Commerce in Banking; E-Commerce and Online Publishing; E-Commerce in Manufacturing; E-Commerce and Supply Chain Management; E-Commerce and Customer Asset Management; B2B E-Commerce; B2C E-Commerce; Electronic Payment Systems; Mobile Commerce; Modern trends in developing E-commerce systems; Available packages and software tools: technical evaluation.

Textbooks:

1. Efraim Turban, Jae Lee, David King and Michel Chung: *Electronic Commerce, A Managerial Perspective* Prentice Hall, 2006, 4th. Edition

/ / ()

--	--

:: :
 () : :
 :
 :
 " " :
 . :
 M/M/1 : : .
 : M/G/1 M/M/1/K

Course Code: CEN 401 Course Title: Queuing Systems and Simulation
 Credit Hours: 3(3,0,1) Level:
 Prerequisites: SEN 331 , Stat 324

Probability theory: random variables, transformation of random variables. probability density functions ,. Markov chains: stochastic processes, Poisson and Exponential processes,. Queuing Systems: Little's theorem, M/M/1, M/M/1/K, , M/G/1.
 Computer simulation: random number generators, validation tests, generating random variables, event-driven simulation, Simulation languages and software and simulation project of systems.

References:

1-Averill M Law, Simulation Modeling & Analysis McGraw Hill I, 2005.

/ / ()

--	--

