



INSTITUTO POLITÉCNICO NACIONAL
SECRETARÍA ACADÉMICA
DIRECCIÓN DE EDUCACIÓN SUPERIOR



SYNTHESIZED SCHOOL PROGRAM

ACADEMIC UNIT: Escuela Superior de Cómputo

ACADEMIC PROGRAM: Ingeniería En Sistemas Computacionales

LEARNING UNIT: e-Commerce

NIVEL: III

AIM OF THE LEARNING UNIT:

The student develops e-commerce applications based on security models, design and implementation of these systems.

CONTENTS:

- I Introduction to Electronic Commerce
- II. Business Models in Electronic Commerce
- III. Electronic Commerce Systems Design
- IV. Electronic Commerce Security
- V. Legal Aspects of Electronic Commerce

TEACHING PRINCIPLES:

This unit will be addressed from the project-oriented learning strategy and the heuristic method, be activities of inquiry, analysis, development and evaluation of the different elements of an electronic trading system, to understand the business models through of concept mapping, exhibitions, practices, research and implementation of a project team led to their area of training that integrates the general concepts and skills relevant to the use of technologies, environments and features of different models e-commerce. The activities to be implemented in the classroom encourages students to some techniques, such as collaborative, participatory, brainstorming, graphic organizers, inquiry documents, worksheets, presentation of additional topics, facilitated discussion and the realization of a project To do this the teacher in planning learning activities established to develop and times for delivery by the student, likewise mark the inspection time to make comments and annotations for the student to improve learning

EVALUATION AND PASSING REQUIREMENTS

The program will evaluate the students in a continuous formative and summative way, which will lead into the completion of project portfolio. Some other assessing methods will be used, such as revisions, practical's, class participation, exercises, learning evidences and a final project.

Other means to pass this Unit of Learning:

- Evaluation of acknowledges previously acquired, with base in the issues defined by the academy.
- Official recognition by either another IPN Academic Unit of the IPN or by a national or international external academic institution besides IPN.

REFERENCES:

- Chaffey, D. *E-Business and E-Commerce Management: Strategy, Implementation and Practice*. (4th Edition). United States of America: Prentice Hall. ISBN: 9780273719601.
- De Reynoos, Janice. (2009). *The Complete e-Commerce Book*. United States of America: Ed. Elsevier Science Ltd. ISBN-13: 9781578203123.
- Laudon, Kenneth/ Travis, Jeffrey (2010). *E-Commerce 2010*. United States of America: Prentice Hall. ISBN: 0136100570.
- Rayport. (2002). *e-Commerce*. México: Ed. McGrawHill. ISBN 13: 9789701037225
- Treese. (2003). *Design Systems For Internet Commerce 2/e*. United States of America: Pearson. ISBN 13: 9780201760354.



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ACADEMIC UNIT: Escuela Superior de Cómputo
ACADEMIC PROGRAM: Ingeniería en Sistemas Computacionales
LATERAL OUTPUT: Analista Programador de Sistemas de Información
FORMATION AREA: Profesional
MODALITY: Presencial

LEARNING UNIT: e-Commerce
TYPE OF LEARNING UNIT: Theoretical - Practical, Optative
VALIDITY: 2011
LEVEL: III
CREDITS: 7.5 TEPIC – 4.39 SATCA

ACADEMIC AIM

This learning unit contributes to the profile of graduates of Computer Systems Engineer, developing the skills of designing and developing applications for mobile devices to know the different platforms, development environments and elements of applications for mobile devices attached to the standards of quality and extent of existing architectures. Generic skills. Likewise, invigorate the powers of creative thinking, assertive communication, collaborative work.

It requires learning units as well as Software Engineering Object Oriented Programming the ability to program solutions in a high-level language, Data Structure, the use of appropriate structures to manipulate data efficiently and Technologies for developing Web applications on the Internet. Work units are consistent Trabajo Terminal I and Trabajo Terminal II.

AIM OF THE LEARNING UNIT:

The student develops e-commerce applications based on security models, design and implementation of these systems.

CREDITS HOURS

THEORETICAL CREDITS / WEEK: 3.0
PRACTICAL CREDITS / WEEK: 1.5
THEORETICAL HOURS / SEMESTER: 54
PRACTICAL HOURS / SEMESTER: 27
AUTONOMOUS LEARNING HOURS: 54
CREDITS HOURS / SEMESTER: 81

LEARNING UNIT DESIGNED BY: Academia de Ingeniería de Software

REVISED BY:

Dr. Flavio Arturo Sánchez Garfias
Subdirección Académica

APPROVED BY:

Ing. Apolinar Francisco Cruz Lázaro
Presidente del CTCE.

AUTHORIZED BY:

Comisión de Programas Académicos del Consejo General Consultivo del IPN. 2011

Ing. Rodrigo de Jesús Serrano Domínguez

Secretario Técnico de la Comisión de Programas Académicos

THEMATIC UNIT: I		TITLE: Introduction to Electronic Commerce				
UNIT OF COMPETENCE						
The student determines the elements of an e-commerce model based on their application environment.						
No.	CONTENTS	Teacher led-instruction HOURS		Autonomous Learning HOURS		REFERENCES KEY
		T	P	T	P	
1.1	Information Technology and Communication	0.5		1.0	1.0	1B,2B,3C,4B,5C
1.2	Defining Electronic Commerce	0.5		1.0		
1.2.1	Assets					
1.2.2	Advantage					
1.2.3	Challenges and Difficulties					
1.3	Methods of Electronic Commerce	0.5	1.0			
1.4	Evolution and Internet Services	0.5				
1.5	Trade Networks	0.5				
1.6	Internet Communication Protocols	0.5				
1.7	Website: Structure and Characteristics	1.0	0.5	2.0		
1.7.1	E-Commerce Site		1.0			
1.7.2	Architecture E-Commerce Site			2.0	2.0	
	Subtotals:	4.0	1.5	7.0	3.0	
TEACHING PRINCIPLES						
This unit will address the strategy from project-oriented learning and heuristics, enabling the consolidation of the following learning techniques: brainstorming, worksheets, inquiry documentary, directed discussion, concept mapping, resolution problems, exposure to additional topics and team work experience.						
LEARNING EVALUATION						
Diagnostic Test						
Proyect Portfolio:						
Charts 5%						
Technical data 5%						
Exercise-solving 10%						
Cooperative Presentation 10%						
Report of Practicals 20%						
Proyect proposal 10%						
Self-Evaluation Rubrics 5%						
Cooperative Evaluation Rubrics 5%						
Written Learning Evidence 30%						

THEMATIC UNIT: II		TITLE: Business Models in Electronic Commerce							
UNIT OF COMPETENCE									
The student classifies business models in e-commerce systems based on their application services.									
No.	CONTENTS	Teacher led-instruction HOURS		Autonomous Learning HOURS		REFERENCES KEY			
		T	P	T	P				
2.1	General classification of Internet Business Models	0.5	0.5	1.0	1.0	1B,2B,3C,4B,5C			
2.2	Classification of business models according to the participants	1.0		2.0					
2.3	E-commerce between enterprises (B2B)	1.0		1.0	1.0				
2.3.1	B2B Definition						1.0		
2.3.2	Types of Business Models in B2B						0.5	1.0	
2.3.3	Utility B2B for companies								
2.3.4	Model shop (e-Procurement)								
2.3.5	Supplies (e-Purchasing)								
2.3.6	EDI and electronic trading system between companies								
2.3.7	Marketplaces								
2.3.8	The B2B for SMEs								
2.3.9	Technical aspects of B2B								
2.3.10	B2B Market								
2.4	Electronic Commerce Business to Consumer (B2C)	1.0	2.0	1.0					
2.4.1	Needs and Benefits of B2C								
2.4.2	Solutions for Electronic Commerce B2C								
2.4.3	Virtual store								
2.4.4	Virtual Mall Shopping Center								
2.4.5	B2C Market								
2.5	Virtual Financial Services and Banking								
	Subtotals:				4.0	1.5	7.0	4.0	
TEACHING PRINCIPLES									
This unit will be addressed from the project-oriented learning strategy and heuristics, enabling the consolidation of the following learning techniques: inquiry document, worksheet, guided discussion, table of comparisons, computer programs, exposure complementary team issues, project proposal and work experience.									
LEARNING EVALUATION									
Project Portfolio:									
	Charts	5%							
	Technical data	5%							
	Computer programs w/report	20%							
	Cooperative Presentation	10%							
	Report of Practicals	20%							
	Advance of Project	10%							
	Self-Evaluation Rubrics	5%							
	Cooperative Evaluation Rubrics	5%							
	Written Learning Evidence	20%							



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THEMATIC UNIT: III		TITLE: Electronic Commerce Systems Design				
UNIT OF COMPETENCE						
The Student designs e-commerce systems based on different models of electronic commerce						
No.	CONTENTS	Teacher led-instruction HOURS		Autonomous Learning HOURS		REFERENCES KEY
		T	P	T	P	
3.1	Architectures of Electronic Commerce Systems	0.5		1.5		2B,3C,4B,5C
3.2	General Considerations on the Internet Payment	0.25				
3.3	Purchasing mechanisms in e-commerce	0.25				
3.4	Internet Payment Systems	0.5	0.5	1.5	2.0	
3.5	Payment systems in B2B Electronic Commerce	0.5		1.5		
3.6	Main features of Internet marketing	0.5				
3.7	System Design Ecommerce	0.5	1.0	1.5	2.0	
3.7.1	System Modeling					
3.7.2	Sequence and collaboration					
3.7.3	Activities and business plan					
3.8	Elements of marketing a website	0.5				
3.9	Characteristics of Internet Advertising	0.25		1.0		
3.9.1	Mechanisms to promote a website					
3.9.2	Measuring the effectiveness of online advertising					
3.10	The management of customer relationships: CRM	0.25				
	Subtotals:	4.0	1.5	7.0	4.0	
TEACHING PRINCIPLES						
This unit will be addressed from the project-oriented learning strategy and heuristics, enabling the consolidation of the following learning techniques: inquiry document, worksheet, guided discussion, table of comparisons, computer program, exposure complementary team issues, project implementation and completion practices.						
LEARNING EVALUATION						
Project Portfolio:						
	Charts	5%				
	Technical data	5%				
	Computer programs w/report	20%				
	Cooperative Presentation	10%				
	Report of Practicals	20%				
	Advance ofProyect	30%				
	Self-Evaluation Rubrics	5%				
	Cooperative Evaluation Rubrics	5%				

LEARNING UNIT: e-Commerce

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THEMATIC UNIT: IV			TITLE: Electronic Commerce Security			
UNIT OF COMPETENCE						
The student Implement aspects of security based on e-commerce architectures						
No.	CONTENTS	Teacher led- instruction HOURS		Autonomous Learning HOURS		REFERENCES KEY
		T	P	T	P	
4.1	Safety aspects of Internet transactions	0.5		1.0		2B,3C,4B,5C
4.2	Necessary conditions for safe e-commerce	0.5				
4.3	Encryption methods	0.5	0.5	1.0	2.0	
4.4	Certification schemes and digital signature	0.5		1.5		
4.5	The electronic ID or eDNI	0.5		1.5		
4.6	Security protocols on transactions:	1.5	1.0	2.0	2.0	
4.6.1	PGP					
4.6.2	SSL					
4.6.3	SET					
	Subtotals:	4.0	1.5	7.0	4.0	
TEACHING PRINCIPLES						
This unit will be addressed from the project-oriented learning strategy and heuristics, enabling the consolidation of the following learning techniques: inquiry document, worksheet, guided discussion, table of comparisons, computer program, exposure complementary team issues, project implementation and completion practices						
LEARNING EVALUATION						
Project Portfolio:						
Charts		5%				
Technical data		5%				
Computer programs w/report		20%				
Cooperative Presentation		10%				
Report of Practicals		20%				
Advance of Project		30%				
Self-Evaluation Rubrics		5%				
Cooperative Evaluation Rubrics		5%				

THEMATIC UNIT: V		TITLE: Legal Aspects of Electronic Commerce				
UNIT OF COMPETENCE						
The student apply legal aspects of the implementation, development and operation of electronic trading systems based on their application environment.						
No.	CONTENTS	Teacher led-instruction HOURS		Autonomous Learning HOURS		REFERENCES KEY
		T	P	T	P	
5.1 5.2	The drawbacks of e-commerce legal Community Regulations and Electronic Commerce	0.5 05		0.5		2B,5C
5.3	Legal issues about intellectual property in Internet	1.0	0.5	1.5	3.0	
5.4	Internet Taxation Considerations	0.5		1.5		
5.5	The rules on data protection in Internet	1.0		1.5		
5.6	The Law of Services of the Information Society and Electronic Commerce (LSSICE)	0.5	0.5	1.0	2.0	
	Subtotals:	4.0	1.0	6.0	5.0	
TEACHING PRINCIPLES						
This unit will be addressed from the project-oriented learning strategy and heuristics, enabling the consolidation of the following learning techniques: inquiry document, worksheet, guided discussion, table of comparisons, computer program, exposure complementary team issues, project implementation and completion practices.						
LEARNING EVALUATION						
Proyect Portfolio:						
Charts		5%				
Technical data		5%				
Computer programs w/report		20%				
Cooperative Presentation		10%				
Report of Practicals		20%				
Proyect report		30%				
Self-Evaluation Rubrics		5%				
Cooperative Evaluation Rubrics		5%				



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LEARNING UNIT:

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RECORD OF PRACTICALS

No.	NAME OF THE PRACTICAL	THEMATIC UNITS	DURATION	ACCOMPLISHMENT LOCATION
1	Architecture E-Commerce Site	I	4.5	Computer Labs.
2	Creating a business model for an online store or ecommerce site	II	5.5	
3	Designing an eCommerce site	III	5.5	
4.	Implementation of a security protocol for electronic commerce	IV	5.5	
5	Legal Legal Plan a draft e-commerce	V	6.0	
		TOTAL OF HOURS	27.0	

EVALUATION AND PASSING REQUIREMENTS:

The practicals are considered mandatory to pass this learning unit.
The practicals worth 20% in each thematic unit.



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LEARNING UNIT:

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PERIOD	UNIT	EVALUATION TERMS
1	I	Continuous evaluation 70% and written learning evidence 30%
	II	Continuous evaluation 80% and written learning evidence 20%
2	III	Continuous evaluation 100%
3	IV y V	Continuous evaluation 100%
		<p>The learning unit I and II is 30% worth of the final score The learning unit III is 30% worth of the final score The learning unit IV is 40% worth of the final score</p> <p>Other means to pass this Learning Unit:</p> <ul style="list-style-type: none"> Evaluation of acknowledges previously acquired, with base in the issues defined by the academy. Official recognition by either another IPN Academic Unit of the IPN or by a national or international external academic institution besides IPN. <p>If accredited by Special Assessment or a certificate of proficiency, it will be based on guidelines established by the academy on a previous meeting for this purpose.</p>

KEY	B	C	REFERENCES
1		X	Chaffey, D. <i>E-Business and E-Commerce Management: Strategy, Implementation and Practice</i> . (4th Edition). United States of America: Prentice Hall. ISBN: 9780273719601 .
2	X		De Reynools, J. (2009). <i>The Complete e-Commerce Book</i> . United States of America: Ed. Elsevier Science Ltd. ISBN-13: 9781578203123.
3		X	Laudon, K (2010). <i>E-Commerce 2010</i> . United States of America: Prentice Hall. ISBN: 0136100570.
4	X		Rayport. (2002). <i>e-Commerce</i> . México: Ed. McGrawHill. ISBN 13: 9789701037225
5		X	Treese. (2003). <i>Design Systems For Internet Commerce 2/e</i> . United States of America: Pearson. ISBN 13: 9780201760354



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TEACHER EDUCATIONAL PROFILE PER LEARNING UNIT

1. GENERAL INFORMATION

ACADEMIC UNIT: Escuela Superior de Cómputo

ACADEMIC PROGRAM: Ingeniería en Sistemas Computacionales NIVEL III

FORMATION AREA:

Institutional	Basic Scientific	Professional	Terminal and Integration
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ACADEMY: Ingeniería de Software LEARNING UNIT: e-Commerce

SPECIALTY AND ACADEMIC REQUIRED LEVEL: Masters Degree or Doctor in Computer Science

2. AIM OF THE LEARNING UNIT:

The student develops e-commerce applications based on security models, design and implementation of these systems.

3. PROFESSOR EDUCATIONAL PROFILE:

KNOWLEDGE	PROFESSIONAL EXPERIENCE	ABILITIES	APTITUDES
<ul style="list-style-type: none">• Programming languages.• Web Technologies.• Software Engineering.• Databases• Web Site Administration• English language	<ul style="list-style-type: none">• A year in web programming• Actual in educational as facilitator of the knowledge of six months.• Six months in the handling of equipment of calculation.• A year experience in the Institutional Educational Model.	<ul style="list-style-type: none">• Analysis and synthesis.• Problems resolution.• Cooperative.• Leadership.• Applications of Institutional Educational Model.• Decision making.	<ul style="list-style-type: none">• Responsible.• Tolerant.• Honest.• Respectful.• Collaborative.• Participative.• Interested to learning.• Assertive.

DESIGNED BY

REVISED BY

AUTHORIZED BY

M. en C. Chadwick Carreto Arellano
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Dr. Flavio Arturo Sánchez Garfías
Subdirector Académico

Ing. Apolinar Francisco Cruz Lázaro

M. en C. Roberto Eswart Zagal Flores
M. en C. Jaime Lopez Rabadan
COLLABORATING PROFESSORS

Date: 2011