



Faculty of Computers and Information
Computer Science Department



Computer Science PhD Program





Assiut University

Faculty of Computers
& Information



CS Ph.D. Program

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*Program
Specifications*



CS Ph.D. Program Specifications 2010-2011

A. Basic Information

1. **Program Title:** Ph.D. in Computers and Information (Computer Science)
2. **Program Type:** Single
3. **Faculty (Faculties):** Faculty of Computers and Information
4. **Department:** Computer Science
5. **Assistant Coordinator:**
6. **Coordinator:** Prof. Yousef B.Mahdy
7. **Last date of program specifications approval:**–

B. Professional Information

1. Program Aims and Objectives

Successfully completing this program will contribute to some certain graduate attributes. Specifically, a graduate of Computers and Information (Computer Science) Ph. D. Program should be able to:

- I. Master scientific research basics and methodologies.
- II. Work continuously to add knowledge in information systems.
- III. Apply analytical and criticizing methodologies in computer science and other related domains.
- IV. Merge the specialized knowledge with other and indicate relations between them.
- V. Be deeply aware of current problems and recent theories in computer science.
- VI. Determine professional problems and find innovative solutions for them.
- VII. Master professional skills in computer science.
- VIII. Develop new tools, methodologies, and techniques for practicing the profession.
- IX. Communicate effectively at work and lead team work at various professional contexts.
- X. Take decisions from provided information.
- XI. Utilize and develop available resources efficiently and discover new resources.
- XII. Be aware of his role in developing the society and preserve the environment.
- XIII. Act with integrity, credibility and applying the rules of the profession.
- XIV. Adopt life-long self-learning and transfer his/her knowledge and experience to others.

2. Intended Learning Outcomes (ILOs)

a. Knowledge and Understanding

After completing the Ph. D. program in Computers and Information (computer Science), the graduate should be able to know and understand the following:

- a1. Theories, fundamentals, and current state-of-the-art in computer science domain and their related domains.
- a2. Scientific research fundamentals, methodologies, ethics, and its various tools.
- a3. Ethical and legal principles for professional practice in computer science.
- a4. Quality principles for professional practice in computer science.
- a5. Related knowledge of professional practice effect on the environment and methods to develop and preserve it.

b. Intellectual Skills

On successful completion of this program, graduates should be able to:

- b1. Analyze and evaluate the information in the domain of computer science and take references and induce from them.
- b2. Solve specialized problems based on the available inputs.
- b3. Carry out new research studies in computer science.
- b4. Write scientific papers in computer science.
- b5. Assess risks in professional computer science practices.
- b6. Plan to develop the performance in computer science.
- b7. Take professional decisions in different scenarios related to computer science.
- b8. Create and innovate.
- b9. Talk and discuss based on proofs and evidences.
- b10. Recognize the need for, and show an ability for, dealing with constantly changing technology and continuing professional development.
- b11. Generate and apply innovative solutions to solve problems based on reasoned rationale.

c. Professional and Practical Skills

On successful completion of this program, graduates should be able to:

- c1. Master basic and modern professional skills in computer science.
- c2. Write and evaluate professional reports related to computer science.
- c3. Evaluate and develop current methods and tools in computer science.
- c4. Use technological tools to serve the professional computer science practice.
- c5. Plan to develop the professional computer science practice and the performance of the others.
- c6. Propose and design possible alternative directions for further work.
- c7. Analyze, evaluate and synthesize research and apply theoretical ideas to practical settings.

d. General and Transferable Skills

On successful completion of this program, graduates should be able to:

- d1. Communicate efficiently by different means.
- d2. Use the information technology to develop the professional practice.
- d3. Educate the others and assess their performance.
- d4. Have a self-assessment and long-life learning.
- d5. Use different recourses to obtain information and knowledge.
- d6. Work productively in team or collaborative settings to achieve common goals or purposes including the ability to lead a team.

- d7. Manage scientific meeting with the ability to manage time.
- d8. Participate within the professional, legal and ethical framework within which they would be expected to operate as professionals within the IT industry.
- d9. Effectively present ideas, designs and solutions in a logical framework in a variety of forms with proper language structure and mechanics, and to produce appropriate written documentation.
- d10. Make use of the qualities and transferable skills necessary for employment requiring concerning the exercise of initiative and personal responsibility, and decision making in complex and unpredictable situations.

3. Academic Standards

The academic standards invoked in this specification are driven from generic the standards in the “Guide of Academic Standards for Graduate Programs” published by the National Authority for Quality Assurance & Accreditation (NAQAAE) on March 2009.

4. Curriculum Structure and Contents

4a. Program duration: at least 2 years.

4b. Program structure

- No. of hours per week: Lectures (10), Lab./Tut. (0), Total (10)
- No. of credit hours: Compulsory (18), Elective (12)
- No. of hours of basic computing: ... credits, ...%
- No. of hours of specialized computer science courses: ... credits, ...%
- Field Training: Not compulsory
- Program Levels (in credit-hours system): Not applicable.

5. Program Courses

5a. Compulsory Courses

Course Code / No.	Course Title	Units No	No. of hours /week			Year	Semester	Achieved ILOs
			Lect	Lab	Exer			
CS621	Software Quality	4	2	–	–	1 st	1 st + 2 nd	a1, a2, a4, a5, b1, b2, b5, b7, b9, b11, c1, c3, c4, c6, d1, d2, d5, d9
CS622	Advanced Object-Oriented Software Design	4	2	–	–	1 st	1 st + 2 nd	a1, a2, a5, b1, b2, b9-b11, c1, c4, c6, c7, d1, d2, d5, d9
CS623	Advanced Topics in Fault-Tolerant Computing	4	2	–	–	1 st	1 st + 2 nd	a1, a2, a4, a5, b1, b2, b5, b7, b9-b11, c1, c3, c4, c6, c7, d1, d2, d5, d9
TOTAL		12	6	–	–			

5b. Elective Courses

Course Code / No.	Course Title	Units No	No. of hours /week			Year	Semester	Achieved ILOs
			Lect.	Lab	Exer.			
1	Elective Course I	4	2	–	–	1 st	1 st + 2 nd	a1, a2, a5, b1, b2, b9-b11, c1, c4, c6, c7, d1, d2, d5, d9
2	Elective Course II	4	2	–	–	1 st	1 st + 2 nd	a1, a2, a5, b1, b2, b9, b11, c1, c4, c6, c7, d1, d2, d5, d9
TOTAL		12	4	–	–			

Elective Course I		Elective Course II	
Course Code	Course Title	Course Code	Course Title
CS624	Visual Interfaces to Computers	CS625	Object-Oriented and Semantic Database Systems
CE621	Parallel Computer Architectures	CS626	Advanced Topics in Data Structures
CE622	Design of Embedded Systems	CS627	Graph Theory

5c. Ph. D. Thesis

No.	Title	Units No	Year	Semester	Achieved ILOs
1	Ph. D. Thesis	40	2 nd	1 st + 2 nd	a1- a5, b1 -b11, c1-c7, d1, d2, d4-d10

6. Contents of Courses

Syllabus: See below

7. Program Admission Requirements

High score in secondary school education certificate in (mathematic section).

8. Regulations for progression and program completion

Please, refer to faculty bylaw (curriculum of undergraduate programs), 2004, pages 4-5.

9. Student Assessment (Methods and rules for student assessment)

Method (tool)	Intended learning outcomes assessed
1- Written examinations	Knowledge and Understanding - Intellectual Skills - Professional Skills - General Skills
2- Oral examination	Knowledge and Understanding - Intellectual Skills - General Skills
3- Thesis	Knowledge and Understanding - Intellectual Skills - Professional Skills - General Skills

10. Program Evaluation

Evaluator	Tool	Sample
1- Senior students		
2- Alumni		
3- Stakeholders		
4-External Evaluator(s) (External Examiner(s))		
5- Other		

Program Coordinator: Prof .Adel A.Swisy

Signature:

Date: 22/9/2010

Department Head: Prof. Yousef B. Mahdy

Signature:

Date: 22/9/2010

Approved by the Dean: Prof. Hosny M. Ibrahim

Signature:

Date: 22/9/2010

*Program
Matrices*



Assiut University
 Faculty of Computers & Information
 Computer Science Department
 Quality Assurance Unit



CS Phd Program Matrices

Program ILOs		a1	a2	a3	a4	a5	b1	b2	b3	b4	b5	b6	b7	b8	b9	b10	b11	c1	c2	c3	c4	c5	c6	c7	d1	d2	d3	d4	d5	d6	d7	d8	d9	d10		
Courses and Thesis	CS621	✓	✓		✓	✓	✓	✓			✓		✓		✓		✓	✓		✓	✓		✓		✓	✓			✓				✓			
	CS622	✓	✓			✓	✓	✓							✓	✓	✓	✓			✓		✓	✓		✓	✓			✓				✓		
	CS623	✓	✓		✓	✓	✓	✓				✓		✓		✓	✓	✓	✓		✓	✓		✓	✓		✓	✓			✓				✓	
	EL1	✓	✓			✓	✓	✓							✓	✓	✓	✓	✓			✓		✓	✓		✓	✓			✓				✓	
	EL2	✓	✓			✓	✓	✓							✓		✓	✓	✓			✓		✓	✓		✓	✓			✓				✓	
	Thesis	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓

*Program
Report*



*Assiut University
Faculty of Computers & Information
Computer Science Department
Quality Assurance Unit*



Program Report2010-2011

This program has no graduate during the academic year 2010-2011.