

Information Technology systems Department

Cairo University

Institute of Statistical Studies & Research

Ph.D. Information System Program Handbook

ISSR Established 1947
Information & Technology system Department Established 2015

PH.D. Information System Program Handbook

Handbook Teamwork

Prof.Mohamed Naguib

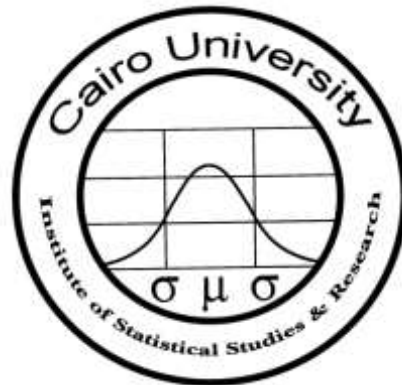
Director of the Quality Assurance unit

Institute of statistical studies &research

Prof. Abdelhamed Elabbasy

Head of Information Technology systems
Department

Institute of statistical studies &research



TO WHOM IT MAY CONCERN

This is an approved copy of the courses specifications of the Information System PH.D Program offered by Information Technology system department of the Institute of Statistical Studies and Research , Cairo University, during the academic year 2015-2016.

Vice Dean

Dean

For Teaching and studies Affairs

Prof. HeshamA.Hefny

Prof.AbdElhamedElabassy

Doctorate of Information System**Program Specification** **5**

<u>Title</u>	<u>Code</u>	
Advances in information system	IT702	<u>9</u>
Select Topics in InformationSystems	IT701	<u>13</u>
Directed Reading	IT703	<u>16</u>
State of the Art the in Information Technologies	IT704	<u>19</u>

Doctorate of Information System

Program Specification

Cairo University

Institute of Statistical Studies and Research (ISSR)

A. Basic Information

- Program title: *Doctorate of Information Systems*
- Program type: *Single (Pure)*
- Department: *Computer And Information Sciences.*
- Coordinator: *Head of Department*
- External Evaluator(s): *N/A*
- Last date of program specifications approval: *28-2-2016*

B. Professional Information:

1. Program Aims

Prepare qualified persons to achieve contributions in Information Systems & Technology to enhance the national research's share among other countries as well as to have a role in the development of our society.

2. Intended Learning Outcomes (ILOs)

a. Knowledge and Understanding

a1-Knowledge of advanced topics in information systems

a2-Knowledge of advanced topics in information technologies.

b. Intellectual Skills

b1-Advanced analytical skills in solving real life problems.

b2-Advanced intellectual skills in integrating ideas from different disciplines .

c. Professional and Practical Skills

c1- The ability to criticize the work of other researchers.

c2-Practical skills in preparing a PhD research.

d- General and Transferable Skills

d1-*Enhancing the criticism thinking.*

d2- *The ability of self learning of new computational methodologies.*

3. Academic Standards

3a External References for Standards: N/A

3b Comparison of Provision to External References: N/A

4. Curriculum Structure and Contents

4.a- Program duration: *2 semesters (One Academic Years)*

4.b- Program Structure:

4.b.i- No. of hours / week: Lectures...15. Lab/Exercise N/A TotalN/A

4.b.ii- No. of credit hours: **Compulsory...9.Elective...3**

4.b.iii- No. of credit hours of **basic** courses: 9 75 %.

4.b.iv- No. of credit hours of **specialized** courses: 3 25 %

4.b.v- No. of credit hours of **other** courses: N/A

4.b.vi- Practical / Field Training: N/A

4.b.vii- Program Levels (in credit-hours system): N/A

5. Program Courses

5.1- Level / Year of Program: 1 Semester: 1

a-Compulsory

Code No.	Course Title	PRE.	No. of Units	No. of hours/week			Program ILOs covered (By No.)
				Lec.	Lab.	Exe.	
IT703	<i>Directed Reading</i>		3	3			c2,d1-d2
IT702	<i>Advances in Information Systems</i>		3	3			a1,b1,c1-c2,d1-d2

5.2- Level / Year of Program: 1 Semester: 2**a. Compulsory**

Code No.	Course Title	PRE.	No. of Units	No. of hours/week			Program ILOs covered (By No.)
				Lec.	Lab.	Exe.	
IT701	<i>Selected Topics in Information Systems</i>		3	3			<i>a1,b2,c1-c2,d1-d2</i>
IT704	<i>State of the art in Information Technology</i>		3	3			<i>a1,b2,c1-c2,d1-d2</i>

6. Program Admission Requirements

1. *Students having the ISSR's Master of IS..*
2. *Students having equivalent Master degree in IS from other universities.*

7. Regulations for Progression and Program Completion

*Student must successfully complete (12) credit hours structured as follows:
(9) compulsory, (3) specialized elective.*

8. Evaluation Program Intended Learning Outcomes

Evaluator	Tool	Sample
1- Senior students	<i>Questionnaire</i>	<i>N/A</i>
2- Alumni	<i>Annual Department Conference</i>	<i>N/A</i>
3- Stakeholders (Employers)	<i>Annual Department Conference</i>	<i>N/A</i>
4-External Evaluators(s) External Examiner(s)	<i>Prof. Said Seliem Prof. Abdel Aziz Khamis</i>	<i>N/A</i>
5- others		

Course Specifications

A. Basic Information

- Program(s) on which the course is given: *Ph.D. of IS*
- Major or Minor element of program: *Major*
- Department offering the program: *Information Systems and Technology*
- Department offering the course: *Information Systems and Technology*
- Academic year / level: *Qualifying to Ph.D.*
- Date of Specification approval: *28-2-2016*
- Title: *Advances in Information Systems* Code: *IT702*
- Credit Hours: *Three* Lecture: *1.5 hours (Two/week)*
- Tutorial: *N/A* Practical: *N/A* Total: *N/A*

B. Professional Information

1. Overall Aims of Course

This course provides students with knowledge of agile methods, agile metrics, agile practices, critical success factors in agile software projects. In addition, this course provides students with the concepts of software quality and software quality. In addition, it aims to enhance the critical, analytical, and logical skills of the student to determine the weaknesses and strengths of any research related to the course topics. It improves the ability of technical writing of researches.

2. Intended Learning Outcomes (ILOs)

a. Knowledge and Understanding

a1- Understanding of agile methods, agile metrics, and critical success factors in agile software projects.

a2- Understanding of agile practices such as: communication practices and refactoring.

a3- Understanding of software quality, quality attributes, quality assurance, quality standards, and quality metrics.

a4- Understanding of fundamentals of software project management and agile projects.

a6- Understanding of hybrid software development approach: RUP, XP and Scrum.

b. Intellectual Skills

b1- The ability to identify the basic concepts and terminology related to agile methods, agile metrics and practices.

b2- The ability to identify the basic concepts of: software quality and software project management.

b3- The ability to apply the concepts of: software quality and software project management to agile projects.

b4- The ability to link between many software development approaches such as: RUP, XP and Scrum.

c. Professional and Practical Skills

c1- Differentiate among agile methods through evaluating the agility of each one.

c2- Determine the main practices and metrics, of agile software development.

c3- Determine the success factors in agile software projects.

c4- Differentiate among quality concepts such as: quality planning, quality assurance, and quality control in the domain of software development project and agile projects.

d- General and Transferable Skills

d1- Improve the analytical and logical skills

d2-Improve the ability of self-learning.

d3- Improve the ability of technical writing of researches.

d4- improve the presentation skills.

3. Contents

Topic	No. of hours	No. of Lectures
Agile Methods.	3	2
Software Quality Assurance.	3	2
Software Project Management.	3	2

Critical success factors in agile software projects.	3	2
Communication practices for Extreme Programming in software development team.	3	2
Scrum Metrics for Hyper-productive Teams.	3	2
Quality Assurance in Scrum Software Projects.	3	2
Agility degree in agile methods.	3	2
Agile Metrics.	3	2
Refactoring in Software Development Process.	3	2
Evaluation, adoption and improvement of agile methods in practice.	3	2
Hybrid Software Development Approach: RUP, XP and SCRUM.	3	2

4. Teaching and Learning Methods

- *Lectures*
- *Examples*
- *Presentations and Discussions*
- *Case study*

5. Student Assessment Methods

- *Assignments, presentations, and discussions to assess ILOs (b, c, and d).*
- *End- term Exam to assess ILOs (a, b, c, and d).*

Weighting of Assessment

Semester Work	25 %
<u>Final- Term Examination</u>	<u>75 %</u>
Total	100 %

6. List of References

1	Lecture Notes.
2	Franck Belmont and Christian Dhondt, "Ensuring Quality Assurance in a Scrum Project", ITECOR, April 2013.
3	Christopher Stangohr, Anna Maria Vollmer, and YasamanLesani, "Success Report 06", May 2012.
4	J.S. Bradbury and J.R. Cordy "Software Metrics".
5	T sun, Chow and Dac-Buu, Cao, "A survey study of critical success factors in agile software projects", the journal of systems and software, Volume 81 Issue 6. , 2007.
6	Lucas Laymana, Laurie Williamsa, Daniela Damianb, and HynekBures, "Essential communication practices for Extreme Programming in a global software development team", Information and Software Technology Volume 48, Issue 9, September 2006.
7	Scott Downey and Jeff Sutherland, "Scrum Metrics for Hyperproductive Teams: How They Fly like Fighter Aircraft", 46th Hawaii International Conference on System Sciences (HICSS), 2013.
8	Amrita Raj Mukker, Anil Kumar Mishra, Latika Singh, "Enhancing Quality in Scrum Software Projects", International Journal of Science and Research (IJSR), Volume 3 Issue 4, April 2014.
9	A. Qumer and B. Henderson-Sellers, "An evaluation of the degree of agility in six agile methods and its applicability for method engineering", Information and Software Technology, Volume 50, Issue 4, March 2008.
10	"Agile Metrics: let the numbers tell the tale", white paper
11	K. Usha, N. Poonguzhali ,E. Kavitha, "A Quantitative Approach for Evaluating the Effectiveness of Refactoring in Software Development Process", International Conference on Methods and Models in Computer Science, 2009.
12	A. Qumer and B. Henderson-Sellers, "A framework to support the evaluation, adoption and improvement of agile methods in practice", Journal of Systems and Software Volume 81, Issue 11, November 2008.
13	M. Salman Bashir and M. RizwanJameelQureshi, "Hybrid Software Development Approach for Small to Medium Scale Projects: RUP, XP & SCRUM", Science International (Lahore), Volume 24 Issue 4, 2012.

7. Facilities Required for Teaching and Learning

Printed Materials / Soft Materials / Whiteboard / Projector / Data show

Course Coordinator: *Dr. Nagy Ramadan Darwish*

Date: 2015/2016

Course Specifications

A. Basic Information

- Program(s) on which the course is given: *Pre-Master for IS*
- Major or Minor element of program: *Major*
- Department offering the program: *Computer and Information Sciences*
- Department offering the course: *Computer and Information Sciences*
- Academic year / level: *Second Level*
- Date of Specification approval: *28-2-2016*
- Title: *Select Topics in Information Systems* Code: *IT701*
- Credit Hours: *Three* Lecture: *1.5 hours (Two/week)*
- Tutorial: *N/A* Practical: *N/A* Total: *Three*

B. Professional Information

1. Overall Aims of Course

Almost all system failures can be traced back to a problem with the system's requirements. Such failures are usually attributed to poor requirements engineering practices and requirements management, and poor understanding of the actual need or problem that must be solved by the system. This course will provide delegates with the necessary insight, understanding and skills to effectively elicit a customer's need and convert this into feasible and realistic system.

2. Intended Learning Outcomes (ILOs)

aAfter successfully completing these three modules, delegates will:

- Understand the importance, roles and purpose of writing clear and unambiguous specifications
- Understand the contractual implications of poor specifications
- Be able to develop a specification hierarchy
- Be able to define a project-specific process of moving from project requirements to specifications, including the implied translation process from requirement to specification
- Be provided with a framework of what constitutes good specifications
- Understand what constitutes good specifications
- Understand the tools and processes needed to properly structure and develop specifications
- Know most common types of specifications
- Be able to organise and manage appropriate specification reviews
- Be able to manage the change of specifications as the project progresses
- Know appropriate specification standards

3. Contents

Topic	No. of hours	No. of Lectures	Tutorial/ Practical
	3	2	N/A
	3	2	N/A
	6	4	N/A
	3	2	N/A
	3	2	N/A
	6	4	N/A
	4.5	3	N/A
	4.5	3	N/A
	3	2	N/A
	6	4	N/A

4. Teaching and Learning Methods

4.1- *Lectures*

4.2- *Examples*

4.3- *Discussions*

4.4- *Discussion of Quizzes thereafter*

5. Student Assessment Methods

5.1. *Quizzes* to assess *ILOs (b&c)*

5.2. *End of term Exam* to assess *ILOs (a, b, c &d).*

Assessment Schedule

Assessment 1: *Quiz I* Week 5

Assessment 2: *Quiz II* Week 10

Assessment 3: *End of term Exam* Week 15

Weighting of Assessment

Semester Work	25 %
<u>Final- Term Examination</u>	<u>75 %</u>
Total	100 %

6. List of References6.1- Course Notes*Lectures Notes*6.2- Essential Books (Text Books)6.3- Recommend Books**7. Facilities Required for Teaching and Learning***Printed Materials / Whiteboard / Projector / Data show*Course Coordinator: prof *Hesham A. Hefny*Head Department: *prof. Hesham A. Hefny*

Date 2015/ 2016

Course Specifications

A. Basic Information

- Program(s) on which the course is given: *Pre-Master for IS*
- Major or Minor element of program: *Major*
- Department offering the program: *Computer and Information Sciences*
- Department offering the course: *Computer and Information Sciences*
- Academic year / level: *Second Level*
- Date of Specification approval: *28-2-2016*
- Title: *Directed Reading* Code: *IT703*
- Credit Hours: *Three* Lecture: *1.5 hours (Two/week)*
- Tutorial: *N/A* Practical: *N/A* Total: *Three*

B. Professional Information

1. Overall Aims of Course

The intent of the course is to present a fairly broad graduate-level introduction to Natural Language Processing (NLP, a.k.a. computational linguistics), the study of computing systems that can process, understand, or communicate in human language. The primary focus of the course will be on understanding various NLP tasks as listed on the course syllabus, algorithms for effectively solving these problems, and methods for evaluating their performance. There will be a focus on statistical learning algorithms that train on (annotated) text corpora to automatically acquire the knowledge needed to perform the task. Class lectures will discuss general issues as well as present abstract algorithms. Implemented versions of some of the algorithms will be provided in order to give a feel for how the systems discussed in class "really work" and allow for extensions and experimentation as part of the course projects.

□

2. Intended Learning Outcomes (ILOs)

- 1 Demonstrate a systematic understanding of knowledge and a critical awareness of current problems and/or new insights much of it at or informed by the forefront of the computer science discipline
- 2 Use originality in the application of knowledge in a professional environment, together with a practical understanding of how established techniques of research and enquiry are used to create and interpret knowledge in the discipline of computer science

- 3 Evaluate and critique methodologies and practices within the field of computer science
- 4 Demonstrate self-direction, originality and creativity in tackling and solving practical computer science related problems which have been planned and implemented within a global professional, legal, social and ethical framework
- 5 Exercise initiative and personal responsibility in dealing with complex and unpredictable situations, making sound judgements, communicating their conclusions clearly to specialist and nonspecialist audiences

3. Contents

Topic	No. of hours	No. of Lectures	Tutorial/ Practical
	3	2	N/A
	3	2	N/A
	6	4	N/A
	3	2	N/A
	3	2	N/A
	6	4	N/A
	4.5	3	N/A
	4.5	3	N/A
	3	2	N/A
	6	4	N/A

4. Teaching and Learning Methods

4.1- *Lectures*

4.2- *Examples*

4.3- *Discussions*

4.4- *Discussion of Quizzes thereafter*

5. Student Assessment Methods

5.1. *Quizzes* to assess *ILOs (b&c)*

5.2. *End of term Exam* to assess *ILOs (a, b, c &d).*

Assessment Schedule

Assessment 1: *Quiz I* Week 5

Assessment 2: *Quiz II* Week 10

Assessment 3: *End of term Exam* Week 15

Weighting of Assessment

Semester Work	25 %
<u>Final- Term Examination</u>	<u>75 %</u>
Total	100 %

6. List of References

6.1- Course Notes

Lectures Notes

6.2- Essential Books (Text Books)

6.3- Recommend Books

7. Facilities Required for Teaching and Learning

Printed Materials / Whiteboard / Projector / Data show

Course Coordinator: *Dr. tarek elghazaly*

Head Department: *Dr. Hesham A. Hefny*

Date 2015 / 2016

Course Specifications

A. Basic Information

- Program(s) on which the course is given: *Pre-Master for IS*
- Major or Minor element of program: *Major*
- Department offering the program: *Computer and Information Sciences*
- Department offering the course: *Computer and Information Sciences*
- Academic year / level: *Second Level*
- Date of Specification approval: *28-2-2016*
- Title: *State of the Art in Information Systems* Code: *IT704*
- Credit Hours: *Three* Lecture: *1.5 hours (Two/week)*
- Tutorial: *N/A* Practical: *N/A* Total: *Three*

B. Professional Information

1. Overall Aims of Course

1. To prepare students for careers in advanced research and/or development environments by extending their knowledge and skills in the specialisation of cloud computing
2. To develop the students' ability to make a critical evaluation of the theories, techniques, tools and systems used in cloud computing
3. To enable students to contribute to future developments in their field by providing them with an understanding of recent advances and current research activity
4. To develop the students' ability to undertake research by providing appropriate resources and guidance in their use
5. To develop the students' ability to make an effective contribution to team-based activity to encourage students to adopt an investigative approach and develop autonomous study skills in order to assist their continuing professional development □

2. Intended Learning Outcomes (ILOs)

a. Knowledge and Understanding

A1 Theory : current and emerging concepts, principles and theories relevant to cloud computing and the supporting areas of computer science
 Theory : current and emerging concepts, principles and theories relevant to cloud computing and the supporting areas of computer science
 Theory

: current and emerging concepts, principles and theories relevant to cloud computing and the supporting areas of computer science

A2 Techniques : methods, tools and enabling technologies used in, or arising from, cloud computing and the supporting areas of computer science

A3 Applications : established and potential applications of techniques developed within cloud computing and the supporting areas of computer science

A4 Professional Issues : legal and ethical issues relating to the present and future use of technology developed within cloud computing and the supporting areas of computer sc

b. Intellectual Skills

B1 Evaluate and apply critical judgement to the theories and techniques that relate to cloud computing and the supporting areas of computer science

B2 Analyse problems and recognise opportunities to apply advanced specialised techniques to their solution

B3 Construct informed and reasoned arguments, descriptions and proposals that incorporate advanced specialised knowledge.

B4 Interpret the contents of articles and other sources, and form a critical judgement of their relative importance and relevance to an area of study

c. Professional and Practical Skills

C1 Make effective use of a range of theories, techniques, programming languages, operating systems, design support tools and development environments.

C2 Specify, design, implement, test and document a cloud-based system

C3 Work as a member of a development team, contributing to the planning and execution of a shared design and implementation task of a cloud-based system

C4 Propose, plan, undertake and report a self-directed individual programme of investigation, design and implementation in the area of cloud computing

d- General and Transferable Skills

D1 Communicate effectively in written reports and oral presentations using appropriate terminology and technical language

D2 Retrieve information using search engines, browsers and catalogues; use appropriate IT facilities to prepare and present technical reports in various formats (documents, oral presentations)

D3 Use mathematical techniques in the processes of analysis and design

D4 Analyse complex problems and design effective solution

D5 Organise activity and manage time in a programme of self-directed study

3. Contents

Topic	No. of hours	No. of Lectures	Tutorial/ Practical
	3	2	N/A
	3	2	N/A
	6	4	N/A
	3	2	N/A
	3	2	N/A
	6	4	N/A
	4.5	3	N/A
	4.5	3	N/A
	3	2	N/A
	6	4	N/A

4. Teaching and Learning Methods

4.1- *Lectures*

4.2- *Examples*

4.3- *Discussions*

4.4- *Discussion of Quizzes thereafter*

5. Student Assessment Methods

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Total	100 %

6. List of References

6.1- Course Notes

Lectures Notes

6.2- Essential Books (Text Books)

6.3- Recommend Books

7. Facilities Required for Teaching and Learning

Printed Materials / Whiteboard / Projector / Data show

Course Coordinator: *prof. Hesham A. Hefny*

Head Department: *prof. Hesham A. Hefny*

Date 2015/ 2016