Assiut University

Faculty of Computers & Information

Information Systems PhD Program

Table of Contents

Program Specifications

IS Ph.D. Program Specifications

A. Basic Information

1. **Program Title:** Ph.D. in Computers and Information (Information Systems)
2. **Program Type:** Single
3. **Faculty (Faculties):** Faculty of Computers and Information
4. **Department:** Information Systems
5. **Assistant Coordinator:** Dr. Ibrahim El Awadi
6. **Coordinator:** Prof. Taysir H. Abdel-Hamid
7. **Last date of program specifications approval:**1/9/2021

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 (Information Systems) 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 information systems and other related domains.
IV. Examine the social, cultural, economic, historical, legal, and political contexts in which information systems are employed, both to inform the design of such systems and to understand their impact on individuals, social groups, and institutions.
V. Develop critical social evaluations.
VI. Merge the specialized knowledge with other and indicate relations between them.
VII. Recognize current problems and recent theories in information systems and its impact on organizations.
VIII. Determine professional problems and find innovative solutions for them.
IX. Master professional skills in information systems.
X. Develop new tools, methodologies, and techniques for practicing the profession.
XI. Communicate effectively at work and lead team work at various professional contexts.
XII. Take decisions from provided information.
XIII. Utilize and develop available resources efficiently and discover new resources.
XIV. Recognize his role in developing society and preserve the environment.
XV. Act with integrity, credibility and apply the rules of the profession.
XVI. 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 (Information Systems), the graduate should be able to:

a1. List theories, fundamentals, and current state-of-the-art in information systems domain and their related domains.
a2. Describe scientific research fundamentals, methodologies, ethics, and its various tools.
a3. Recognize ethical and legal principles for professional practice in information systems.
a4. Deploy quality principles for professional practice in information systems.
a5. Assess related knowledge of professional information systems practice effect on thesocial context.
a6. Classify the impact of information systems on individuals, social groups, and institutions.

b. Intellectual Skills

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

b1. Analyze and evaluate various kinds of information in digital form in the domain of information systems and take references and induce from them.
b2. Solve specialized problems based on the available inputs.
b3. Carry out new research studies in information systems.
b4. Write scientific papers in information systems.
b5. Assess risks in professional information systems practices.
b6. Plan to develop the performance in information systems.
b7. Take professional decisions in different scenarios related to information systems.
b8. Create and innovate.
b9. Talk and discuss based on proofs and evidences.

c. Professional and Practical Skills

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

c1. Master basic and modern professional skills in information systems.
c2. Write and evaluate professional reports related to information systems.
c3. Evaluate and develop current methods and tools in information systems.
c4. Use technological tools to serve the professional information systems practice.
c5. Plan to develop the professional information systems practice and the performance of the others.
c6. Evaluate the impact of information systems on the society.

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. Deploy a self-assessment and practice long-life learning.
d5. Deploy different recourses to obtain information and knowledge.
d6. Work in a team and lead work teams.
d7. Manage scientific meeting with the ability to manage time.

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.
- Ph.D. in information systems, Baylor University, USA.
- Ph.D. in information sciences, Cornell University, USA.

4. Curriculum Structure and Contents

4a. Program duration: at least 2 years.

4b. Program structure

- No. of hours per week: Lectures (4), Lab./Tut. (0), Total (4)
- No. of credit hours: courses (12) , seminar (2), research papers (4), thesis (30)
- Field Training: Not compulsory
- Program Levels (in credit-hours system): 48 hours

5. Program Courses

5a. Elective Courses:

Course Code / No.	Course Title	Units No	No. of hours /week			Year	Semester	Achieved ILOs
			Lect	Lab	Exer			
	Elective Course 1	3	2	–	–	1st	1st + 2nd	a1, a2, a5, b1, b2, b3,b5, b7, b8, b9, c1, c3,c4, d1, d2, d5,d7
	Elective Course 2	3	2	–	–	1st	1st + 2nd	a1, a2, a4, a5, b1, b2 , b4, b7, b9, c1, c3, c4, d1, d2, d5
	Elective Course 3	3	2	–	–	1st	1st + 2nd	a1, a2, a4, a5, b1, b2, b5, b7, b6,b9, c1-c5,d1-d7
	Elective Course 4	4	2	–	–	1st	1st + 2nd	a1, a2, a4, a5, b1, b2 , b4, b7, b9, c1, c3, c4, d1, d2, d5
T O T A L		12	8					

Elective Courses	
Course Code	Course Title
IS700	Advanced Big Data Analytics
IS701	Inference and Representation for Data Science
IS702	Social Networks Analytics II
IS703	Seminars in Informatics II
IS704	Advances in Database Management II
IS705	Selected Topics in Information Systems I
IS706	Selected Topics in Information Systems II
CS701	Advanced Artificial Intelligence
CS711	Advanced Topics in Machine Learning
BNF704	Seminars in Bioinformatics II

5b. Seminar

Course Code / No.	Course Title	Units No	No. of hours /week			Year	Semester	Achieved ILOs
			Lect	Lab	Exer			
	Seminar	2	2			1st	2nd	a1, a2, a3, a5, a6, b1, b3, b4, b5, b6, b8, c1, c2, c3, d2, d3, d4, d5, d6, d7
TOTAL		2	2					

5c. Research papers

Course Code / No.	Course Title	Units No	No. of hours /week			Year	Semester	Achieved ILOs
			Lect	Lab	Exer			
	research papers	4	-			1st	2nd	a1, a2, a3, a5, a6, b1, b3, b4, b5, b6, b8, c1, c2, c3, c6, d2, d3, d4, d5, d6, d7
TOTAL		4	-					

5d. Ph. D. Thesis

No.	Title	Units No	Year	Semester	Achieved ILOs
1	Ph. D. Thesis	30	2nd	1st + 2nd	a1, a2, a3, a4, a5, a6, b1, b2, b3, b4, b6, b7, b8, b9, c1, c2, c3, c4, c5, d1, d2, d4, d5

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 postdergraduate programs), 2021.

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

Method (tool)	Intended leaning 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	Questionnaire	
3- Stakeholders		
4-External Evaluator(s) (External Examiner(s))	Report	
5- Other		

Program Coordinator: Prof. Taysir Hassan Abdel Hamid
Signature:
Date: 1/9/2021

Department Head: Prof. Taysir Hassan Abdel Hamid
Signature:
Date: 1/9/2021

Approved by the Dean: Prof. Taysir Hassan Abdel Hamid
Signature:
Date: 1/9/2021

IS Ph.D. Program Matrix

IS Ph.D. Program Matrix

Program ILOs		a1	a2	a3	a4	a5	a6	b1	b2	b3	b4	b5	b6	b7	b8	b9	c1	c2	c3	c4	c5	c6	d1	d2	d3	d4	d5	d6	d7
Courses and Thesis	EL1	✓	✓			✓		✓	✓	✓		✓		✓	✓	✓	✓		✓	✓			✓	✓			✓		✓
	EL2	✓	✓		✓	✓		✓	✓		✓			✓		✓	✓		✓	✓			✓	✓			✓		
	EL3	✓	✓		✓	✓		✓	✓			✓	✓	✓		✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓
	EL4	✓	✓		✓	✓		✓	✓		✓			✓		✓	✓		✓	✓			✓	✓			✓		
	Seminar	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓		✓		✓	✓	✓					✓	✓	✓	✓	✓	✓
	Research Papers	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓		✓		✓	✓	✓			✓		✓	✓	✓	✓	✓	✓
	Ph. D. Thesis	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓		✓	✓		

Courses Specifications 2021-2022

Course Specifications

Relevant program	Ph.D. in Computers and Information(Information Systems)
Department offers the program	Information Systems
Department offers the course	Information Systems
Academic year	1st Year
Date of specification approval	1/9/2021

A. Basic Information

1. **Course Title:** Elective Course I (Seminars in Informatics II)
2. **Course Code:** IS703
3. **Course hours per week:**

Lecture	Tutorial / Practical	Total
2	–	2

B. Professional Information

1. Overall aims of the course

Upon completing this course the student will be able to:

- Develop an Understanding of Research Methodologies.
- Explore Current Research Topics and Trends.
- Foster Critical Thinking and Analytical Skills.
- Enhance Communication Skills.

2. Intended Learning Outcomes (ILOs) of the course

a. Knowledge and Understanding

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

a1. List theories, fundamentals, and current state-of-the-art in information systems domain and their related domains.

a2. Describe scientific research fundamentals, methodologies, ethics, and its various tools.

a5. Assess related knowledge of professional information systems practice effect on the social context.

b. Intellectual Skills

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

b1. Analyze and evaluate various kinds of information in digital form in the domain of information systems and take references and induce from them.
b2. Solve specialized problems based on the available inputs.
b3. Carry out new research studies in information systems.
b5. Assess risks in professional information systems practices.
b7. Take professional decisions in different scenarios related to information systems.
b8. Create and innovate.
b9. Talk and discuss based on proofs and evidences.

c. Professional and Practical Skills

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

c1. Master basic and modern professional skills in information systems.
c3. Evaluate and develop current methods and tools in information syb2stems.
c4. Use technological tools to serve the professional information systems practice.

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.
d5. Deploy different recourses to obtain information and knowledge.
d7. Manage scientific meetings with the ability to manage time.

Contents

No	Topic taught	No. of hours		ILOs
		Lecture	Tut/Prac	
1	Develop an Understanding of Research Methodologies	8h	--	a1, a2, a5, b1, b2, b3, b8, c1, c4, d1, d5
2	Explore Current Research Topics and Trends.	6h	--	a1, a5, b5, b7, c3, c4, d7
3	Foster Critical Thinking and Analytical Skills.	4h	--	a2, a5, b1, b3, b9, c4,d2
4	Enhance Communication Skills.	8h	--	b7-b9, c3-c4, d7

3. Teaching and Learning Methods

4a. Lectures
4b. Tutorial Exercises
4c. Projects

4. Student Assessment

5a. Tools

Final Exam	To measure knowledge, understanding, intellectual professional and general skills.
Projects	To measure professional and general skills

5b. Time Schedule

Assessment	Week No
Final Exam	13

5c. Grading System

Assessment	Grade %
Final Exam	70%
Year Work	30%

5d. Formative Assessment

Regular quizzes distributed along the whole semester.

5. List of References

6a. Course Notes

- Short course notes available at the course homepage.

6b. Required Books (Textbooks)

- Stuart Russell and Peter Norvig, Artificial Intelligence: A Modern Approach, 2020, Pearson.

6c. Recommended Books

- Ian Sommerville, Software Engineering, 2015, Pearson.

6d. Web Sites

- Course homepage is accessed from the FCI website: http://www.aun.edu.eg/Courses/

6. Facilities Required for Teaching and Learning

- A lecture hall equipped with projectors and computers.
- Labs equipped with computers and Internet facilities.
- A library.

Course Coordinator: Prof.Dr. Ibrahim Al-Awadhi

Signature:

Date: 1/9/2021

Department Head: Prof.Dr. Taysir H. Abdel-Hamid

Signature:

Date: 1/9/2021

Course Matrix

Course Name:	Elective Course I (Seminars in Informatics II)	**Course Code:**	IS703

No	**Course Content**	**Teaching Weeks**	**ILOs**				**Teaching and Learning Methods**	**Assessment Tools**	**Criteria**
			a's	**b's**	**c's**	**d's**	**Lectures**	**Final Exam**	
1	Develop an Understanding of Research Methodologies	4	1-2-5	1-2-3-8	1-4	1-5	✓	✓	Student evaluation, course file, exam results
2	Explore Current Research Topics and Trends.	3	1-5	5-7	3-4	7	✓	✓	
3	Foster Critical Thinking and Analytical Skills.	2	2-5	1-3-9	4	2	✓	✓	
4	Enhance Communication Skills.	4	□	7-9	3-4	7	✓	✓	

Course Coordinator	**Prof.Dr. Ibrahim Al-Awadhi**	Department Head	Prof.Dr. Taysir H. Abdel-Hamid

Course Specifications

Relevant program	Ph.D. in Computers and Information(Information Systems)
Department offers the program	Computer Science
Department offers the course	Computer Science
Academic year	1st Year
Date of specification approval	1/9/2021

A. Basic Information

1. **Course Title:** Elective Course II (Advanced Topics in Machine Learning)
2. **Course Code:** CS610
3. **Course hours per week:**

Lecture	Tutorial / Practical	Total
2	–	2

B. Professional Information

1. Overall aims of the course

Upon completing this course the student will have learned, through appropriate classroom and laboratory experiences, the following.

- Having a thorough understanding of advanced machine learning algorithms, including supervised learning, reinforcement learning, and probabilistic models.
- Working with Bayesian networks and Hidden Markov Models (HMMs) for tasks requiring uncertainty estimation.
- Improving the robustness and generalization of machine learning models.

2. Intended Learning Outcomes (ILOs) of the course

a. Knowledge and Understanding

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

a1. Explain theories and fundamentals in Computer Science and related domains.
a2. Interpret scientific development in Computer Science.
a3. Identify the fundamentals of scientific research and its ethics.

a4. Describe variety of data compression techniques commonly used for multimedia, conventional computers and network.
a5. A deep and systematic understanding of the academic discipline of Computer Science.
a6. A critical awareness of current problems and research issues in selected areas of Computer Science.

b. Intellectual Skills

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

b1. Solve specialized problems without enough inputs.
b2. Link different knowledge to solve professional problems.
b3. Carry out a research study and write a thesis around a research problem in Computer Science.
b4. Plan to develop the performance in Computer Science.
b5. Establish techniques of research and enquiry are used to extend, create and interpret knowledge in Computer Science.
b6. Recognize the need for, and show an ability for, dealing with constantly changing technology and continuing professional development.

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. Evaluate current methods and tools in Computer Science.
c3. Use and implement basic and modern compression algorithms.
c4. Deal with complex issues at the forefront of the academic discipline of Computer Science in a manner, based on sound judgments, that is both systematic and creative; and be able to communicate conclusions clearly to both specialists and non-specialists.
c5. Demonstrate self-direction and originality in tackling and solving problems within the domain of Computer Science, and be able to act autonomously in planning and implementing solutions in a professional manner.
c6. Generate and apply appropriate solutions to solve problems based on reasoned rationale.

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 serve the professional practice.
d3. Use different recourses to obtain information and knowledge.
d4. Long-life self-learning.
d5. 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.

3. Contents

No	Topic taught	No. of hours		ILOs
		Lecture	Tut/Prac	
1	Simple Machine Learning Algorithms.	10	6	a1-a5, b1-b4, c1-c4, d1-d5
2	Supervised learning and unsupervised learning	12	8	a1-a4, a6, b1-b6, c1-

	techniques			c6, d2-d5
3	Bayesian Decision Theory, Probability and Inference, Classification, and Bayes' Rule	12	8	a1-a4, a6,b1-b6, c1-c6, d1-d5
4	Hidden Markov Models, Parts of speech (POS), TagsetsPOS and Tagging	8	4	a1-a4, a6, b1-b6, c1-c6, d1-d5

4. Teaching and Learning Methods

4a. Lectures

4b. Tutorial Exercises

4c. Workshops

4d. Projects

5. Student Assessment

5a. Tools

Final Exam	To measure knowledge, understanding, intellectual professional and general skills.
Projects	To measure professional and general skills

5b. Time Schedule

Assessment	**Week No**
Final Exam	15

5c. Grading System

Assessment	**Grade %**
Final Exam	70%
Year Work	30%

5d. Formative Assessment

Regular quizzes distributed along the whole semester.

6. List of References

6a. Course Notes

a. Summary Slides.

6b. Required Books (Textbooks)

a. Aurélien Géron, Hands-On Machine Learning with Scikit-Learn, Keras, and TensorFlow, 2019, O'Reilly Media

6c. Recommended Books

a. "Applied Machine Learning" by David Forsyth.

6d. Web Sites

a. Course homepage is accessed from the FCI website: http://www.aun.edu.eg/Courses/

7. Facilities Required for Teaching and Learning

- A lecture hall equipped with projectors and computers.
- Labs equipped with computers and Internet facilities.
- A library.

Course Coordinator: Prof.Dr. Abdulrahman Haider

Signature:

Date: 1/9/2021

Department Head: Prof.Dr. Khaled Fathy

Signature:

Date: 1/9/2021

Course Matrix

Course Name:	Elective Course II (Advanced Topics in Machine Learning)	**Course Code:**	CS610

No	**Course Content**	**Teaching Weeks**	**ILOs**				**Teaching and Learning Methods**	**Assessment Tools**	**Criteria**
			a's	**b's**	**c's**	**d's**	**Lectures**	**Final Exam**	
1	Simple Machine Learning Algorithms.	5	1-5	1-4	1-4	1-5	✓	✓	Student evaluation, course file, exam results
2	Supervised learning and unsupervised learning techniques	6	1-4-6	1-6	1-6	2-5	✓	✓	
3	Bayesian Decision Theory, Probability and Inference, Classification, and Bayes' Rule	6	1-4-6	1-6	1-6	1-5	✓	✓	
4	Hidden Markov Models, Parts of speech (POS), TagsetsPOS and Tagging	4	1-4-6	1-6	1-6	1-5	✓	✓	

Course Coordinator	**Prof.Dr. Abdulrahman Haider**	Department Head	**Prof.Dr. Khaled Fathy**

Course Specifications

Relevant program	Ph.D. in Computers and Information(Information Systems)
Department offers the program	Information Systems
Department offers the course	Information Systems
Academic year	1st Year
Date of specification approval	1/9/2022

A. Basic Information

1. **Course Title:** Elective Course III (Social Networks Analytics II)
2. **Course Code:** (IS702)
3. **Course hours per week:**

Lecture	Tutorial / Practical	Total
2	–	2

B. Professional Information

1. Overall aims of the course

Upon completing this course, the student will be able to:

- Understand Crowdsourcing and Citizen Science Platforms.
- Analyze Algorithms for Social Computing.
- Investigating the Influence of Social Systems on Human Behavior.
- Explore Clustering and Classification Techniques in Social Networks.
- Develop Innovative Solutions for Social Network Analysis.

2. Intended Learning Outcomes (ILOs) of the course

a. Knowledge and Understanding

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

a1. List theories, fundamentals, and current state-of-the-art in information systems domain and their related domains.
a2. Describe scientific research fundamentals, methodologies, ethics, and its various tools.
a4. Deploy quality principles for professional practice in information systems.
a5. Assess related knowledge of professional information systems practice effect on the social context.

b. Intellectual Skills

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

b1. Analyse and evaluate various kinds of information in digital form in the domain of information systems and take references and induce from them.
b2. Solve specialized problems based on the available inputs.
b5. Assess risks in professional information systems practices.
b6. Plan to develop the performance in information systems.
b7. Take professional decisions in different scenarios related to information systems.
b9. Talk and discuss based on proofs and evidence.

c. Professional and Practical Skills

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

c1. Master basic and modern professional skills in information systems.
c2. Write and evaluate professional reports related to information systems.
c3. Evaluate and develop current methods and tools in information systems.
c4. Use technological tools to serve the professional information systems practice.
c5. Plan to develop the professional information systems practice and the performance of the others.

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. Deploy a self-assessment and practice long-life learning.
d5. Deploy different recourses to obtain information and knowledge.
d6. Work in a team and lead work teams.
d7. Manage scientific meetings with the ability to manage time.

3. Contents

No	Topic taught	No. of hours		ILOs
		Lecture	Tut/Prac	
1	Understand Crowdsourcing and Citizen Science Platforms.	7h	----	a1, a2, b5-b7, c4-c5, d3
2	Analyse Algorithms for Social Computing.	6h	-----	a4, b7, c3-c5, d1-d4
3	Investigate the Influence of Social Systems on Human Behaviour.	5h	----	a2, b1-b2, c1-c2, d3-d4
4	Explore Clustering and Classification Techniques in Social Networks.	4h	----	a1, b5, c4, c5, d5-d7
5	Develop Innovative Solutions for Social Network Analysis	4h	----	a5, b6, b7, c5, d2-d5

4. Teaching and Learning Methods

4a. Lectures

4b. Tutorial Exercises

4c. Projects

5. Student Assessment

5a. Tools

Final Exam	To measure knowledge, understanding, intellectual professional and general skills.
Projects	To measure professional and general skills

5b. Time Schedule

Assessment	**Week No**
Final Exam	13

5c. Grading System

Assessment	**Grade %**
Final Exam	70%
Year Work	30%

5d. Formative Assessment

Regular quizzes distributed along the whole semester.

6. List of References

6a. Course Notes

- Short course notes available at the course homepage.

6b. Required Books (Textbooks)

- **Arthur K. Kordon, *Social Network Analysis*, Cambridge University Press, 2024**.

6c. Recommended Books

- Przemysław Kazienko, Nitesh Chawla, Applications of Social Media and Social Network Analysis, 2015, Springer.

6d. Web Sites

- Course homepage is accessed from the FCI website: http://www.aun.edu.eg/Courses/

7. Facilities Required for Teaching and Learning

- A lecture hall equipped with projectors and computers.
- Labs equipped with computers and Internet facilities.
- A library.

Course Coordinator: Prof.Dr. Taysir H. Abdel-Hamid

Signature:

Date: 1/9/2021

Department Head: Prof.Dr. Taysir H. Abdel-Hamid

Signature:

Date: 1/9/2021

Course Matrix

Course Name:	Elective Course III (Social Networks Analytics II)	**Course Code:**	IS702

No	**Course Content**	**Teaching Weeks**	**ILOs**				**Teaching and Learning Methods**	**Assessment Tools**	**Criteria**
			a's	**b's**	**c's**	**d's**	**Lectures**	**Final Exam**	
1	Understand Crowdsourcing and Citizen Science Platforms.	3.5	1-2	5-7	4-5	3	✓	✓	Student evaluation, course file, exam results
2	Analyse Algorithms for Social Computing.	3	4	7	3-5	1-4	✓	✓	
3	Investigate the Influence of Social Systems on Human Behaviour.	2.5	2	1-2	1-2	3-4	✓	✓	
4	Explore Clustering and Classification Techniques in Social Networks.	2	1	5	4--5	5-7	✓	✓	
5	Develop Innovative Solutions for Social Network Analysis	2	5	6-7	5	2-5	✓	✓	

Course Coordinator	Prof.Dr. Taysir H. Abdel-Hamid	Department Head	Prof.Dr. Taysir H. Abdel-Hamid

Course Specifications

Relevant program	Ph.D. in Computers and Information(Information Systems)
Department offers the program	Information Systems
Department offers the course	Information Systems
Academic year	1st Year
Date of specification approval	1/9/2021

A. Basic Information

1. **Course Title:** Elective Course IV (Selected Topics in IS I)
2. **Course Code:** IS705
3. **Course hours per week:**

Lecture	Tutorial / Practical	Total
2	–	2

B. Professional Information

1. Overall aims of the course

Upon completing this course, the student will be able to:

- Explore Recent Research Topics in Information Systems.
- Analyse Cutting-Edge Research Papers.
- Understand Emerging Technologies and Trends.
- Develop Research Skills in Information Systems.
- Engage in Discussions on Advanced Research Topics.

2. Intended Learning Outcomes (ILOs) of the course

a. Knowledge and Understanding

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

a1. List theories, fundamentals, and current state-of-the-art in information systems domain and their related domains.
a2. Describe scientific research fundamentals, methodologies, ethics, and its various tools.
a4. Deploy quality principles for professional practice in information systems.
a5. Assess related knowledge of professional information systems practice effect on the social context.

b. Intellectual Skills

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

b1. Analyse and evaluate various kinds of information in digital form in the domain of information systems and take references and induce from them.
b2. Solve specialized problems based on the available inputs.
b4. Write scientific papers in information systems.
b7. Take professional decisions in different scenarios related to information systems.
b9. Talk and discuss based on proofs and evidence.

c. Professional and Practical Skills

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

c1. Master basic and modern professional skills in information systems.
c3. Evaluate and develop current methods and tools in information systems.
c4. Use technological tools to serve the professional information systems practice.

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.
d5. Deploy different recourses to obtain information and knowledge.

3. Contents

No	Topic taught	No. of hours		ILOs
		Lecture	Tut/Prac	
1	Explore Recent Research Topics in Information Systems.	6h	----	a1, a2, b1, b7, c3, c4, d1, d2
2	Analyse Cutting-Edge Research Papers.	5h	-----	a4, a5, b2, b4, c1, c3, d5
3	Understand Emerging Technologies and Trends.	6h	----	a2, b7, c1, c4, d1
4	Develop Research Skills in Information Systems.	5h	----	a5, b1, b7, c4, d2
5	Engage in Discussions on Advanced Research Topics.	4h	----	a4, b4, c1, c4, d5

4. Teaching and Learning Methods

4a. Lectures

4b. Tutorial Exercises

4c. Projects

5. Student Assessment

5a. Tools

Final Exam	To measure knowledge, understanding, intellectual professional and general skills.
Projects	To measure professional and general skills

5b. Time Schedule

Assessment	Week No
Final Exam	13

5c. Grading System

Assessment	Grade %
Final Exam	70%
Year Work	30%

5d. Formative Assessment

Regular quizzes distributed along the whole semester.

6. List of References

6a. Course Notes

- Short course notes are available at the course homepage.

6b. Required Books (Textbooks)

- Kenneth C. Laudon and Jane P. Laudon, Management Information Systems: Managing the Digital Firm, 2020, Pearson.

6c. Recommended Books

- Ramesh Sharda, Dursun Delen, and Efraim Turban, Business Intelligence, Analytics, and Data Science: A Managerial Perspective, 2018, Pearson.

6d. Web Sites

- Course homepage is accessed from the FCI website: http://www.aun.edu.eg/Courses/

7. Facilities Required for Teaching and Learning

- A lecture hall equipped with projectors and computers.
- Labs equipped with computers and Internet facilities.
- A library.

Course Coordinator: Prof.Dr. Ibrahim Al-Awadhi

Signature:

Date: 1/9/2021

Department Head: Prof. Dr. Taysir H. Abdel-Hamid

Signature:

Date: 1/9/2021

Course Matrix

Course Name:	**Course Title:** Elective Course IV (Selected Topics in IS I)	**Course Code:**	IS705

No	**Course Content**	**Teaching Weeks**	**ILOs**				**Teaching and Learning Methods**	**Assessment Tools**	**Criteria**
			a's	**b's**	**c's**	**d's**	**Lectures**	**Final Exam**	
1	Explore Recent Research Topics in Information Systems.	3	1-2	1-7	3-4	1-2	✓	✓	Student evaluation, course file, exam results
2	Analyse Cutting-Edge Research Papers.	2.5	4-5	2-4	1-3	5	✓	✓	
3	Understand Emerging Technologies and Trends.	3	2	7	1-4	1	✓	✓	
4	Develop Research Skills in Information Systems.	2.5	5	1-7	4	2	✓	✓	
5	Engage in Discussions on Advanced Research Topics.	2	4	4	1-4	5	✓	✓	

Course Coordinator	Prof.Dr. Ibrahim Al-Awadhi	Department Head	Prof.Dr. Taysir H. Abdel-Hamid

Seminar Specification

IS Ph.D. Seminar Specifications

Relevant program	Ph.D. in Computers and Information (Information Systems)
Department offers the program	Information Systems
Department offers the course	Information Systems
Academic year	1st Year
Date of specification approval	1/9/2021

A. Basic Information

1. **Title:** Ph.D. Seminar

B. Professional Information

1. Overall aims of the seminar

Upon attending the seminar, the student will have learned, through appropriate discussion, the following.

- Read ana analyze research papers in some trending topics.
- Summarize important information in research papers.
- Search and find the most appropriate research papers.
- Integrate information and conduct state of the art review and survey paper.

2. Intended Learning Outcomes (ILOs) of the course

a. Knowledge and Understanding

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

a1. List theories, fundamentals, and current state-of-the-art in information systems domain and their related domains.
a2. Describe scientific research fundamentals, methodologies, ethics, and its various tools.
a3. Recognize ethical and legal principles for professional practice in information systems.
a5. Assess related knowledge of professional information systems practice effect on the social context.
a6. Classify the impact of information systems on individuals, social groups, and institutions.

b. Intellectual Skills

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

b1. Analyze and evaluate various kinds of information in digital form in the domain of information systems and take references and induce from them.
b3. Carry out new research studies in information systems.
b4. Write scientific papers in information systems.
b5. Assess risks in professional information systems practices.
b6. Plan to develop the performance of information systems.
b8. Create and innovate.

c. Professional and Practical Skills

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

c1. Master basic and modern professional skills in information systems.
c2. Write and evaluate professional reports.
c3. Evaluate current methods and tools in information systems.

d. General and Transferable Skills

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

d2. Use information technology to develop professional practice.
d3. Educate the others and assess their performance.
d4. Deploy a self-assessment and practice long-life learning.
d5. Deploy different recourses to obtain information and knowledge.
d6. Work in a team and lead work teams.
d7. Manage scientific meetings with the ability to manage time.

3. Teaching and Learning Methods

4a. Discussion
4b. Workshops
4c. Projects
4d. Case Study
4e. Data Collections

4. Student Assessment

5a. Tools

Oral examination	Knowledge and Understanding - Intellectual Skills - General Skills

5. Facilities Required for Teaching and Learning

- Labs equipped with computers and Internet facilities.
- Advanced research labs.
- Discussion rooms.
- Digital library contains links to international journals.
- A library.

Department Head: Prof. Taysir H. Abdel-Hamid

Signature:

Date: 1/9/2021

Research Papers Specification

IS Ph.D. Research Papers Specifications

Relevant program	Ph.D. in Computers and Information (Information Systems)
Department offers the program	Information Systems
Department offers the course	Information Systems
Academic year	2nd Year
Date of specification approval	1/9/2021

C. Basic Information

2. **Title:** Ph.D. Research Papers

D. Professional Information

6. Overall aims of the thesis

Upon completing this thesis, the student will have learned, through appropriate discussion and laboratory experiences, the following.

- Prepare research proposal.
- Contribute something original to the field.
- Apply Ethical issues for the research by the University Ethics Committee.
- The topic matches the student' interests and capabilities.

7. Intended Learning Outcomes (ILOs) of the course

a. Knowledge and Understanding

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

a1. List theories, fundamentals, and current state-of-the-art information systems domain and their related domains.
a2. Describe scientific research fundamentals, methodologies, ethics, and its various tools.
a3. Recognize ethical and legal principles for professional practice in information systems.
a5. Assess related knowledge of professional information systems practice effect on the social context.
a6. Classify the impact of information systems on individuals, social groups, and institutions.

b. Intellectual Skills

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

b1. Analyze and evaluate various kinds of information in digital form in the domain of information systems and take references and induce from them.
b3. Carry out new research studies in information systems.
b4. Write scientific papers in information systems.
b5. Assess risks in professional information systems practices.
b6. Plan to develop the performance of information systems.
b8. Create and innovate.

c. Professional and Practical Skills

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

c1. Master basic and modern professional skills in information systems.
c2. Write and evaluate professional reports.
c3. Evaluate current methods and tools in information systems.

d. General and Transferable Skills

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

d2. Use information technology to develop professional practice.
d3. Educate the others and assess their performance.
d4. Deploy a self-assessment and practice long-life learning.
d5. Deploy different recourses to obtain information and knowledge.
d6. Work in a team and lead work teams.
d7. Manage scientific meetings with the ability to manage time.

8. Teaching and Learning Methods

4f. Discussion
4g. Workshops
4h. Projects
4i. Case Study
4j. Data Collections

9. Student Assessment

5b. Tools

External Evaluation	Knowledge and Understanding - Intellectual Skills - General Skills

10. Facilities Required for Teaching and Learning

- Labs equipped with computers and Internet facilities.
- Advanced research labs.
- Discussion rooms.
- Digital library contains links to international journals.
- A library.

Department Head: Prof. Taysir H. Abdel-Hamid

Signature:

Date: 1/9/2021

Thesis Specification

IS Ph.D. Thesis Specifications

Relevant program	Ph.D. in Computers and Information (Information Systems)
Department offers the program	Information Systems
Department offers the course	Information Systems
Academic year	2nd Year
Date of specification approval	1/9/2021

A. Basic Information

3. **Title:** Ph.D. Thesis

B. Professional Information

1. Overall aims of the thesis

Upon completing this thesis, the student will have learned, through appropriate discussion and laboratory experiences, the following.

- Prepare research proposal.
- Contribute something original to the field.
- Apply Ethical issues for the research by the University Ethics Committee.
- The topic matches the student' interests and capabilities.

2. Intended Learning Outcomes (ILOs) of the course

a. Knowledge and Understanding

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

a1. List theories, fundamentals, and current state-of-the-art in information systems domain and their related domains.
a2. Describe scientific research fundamentals, methodologies, ethics, and its various tools.
a3. Recognize ethical and legal principles for professional practice in information systems.
a4. Deploy quality principles for professional practice in information systems.
a5. Assess related knowledge of professional information systems practice effect on the social context.
a6. Classify the impact of information systems on individuals, social groups, and institutions.

b. Intellectual Skills

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

b1. Analyze and evaluate various kinds of information in digital form in the domain of information systems and take references and induce from them.
b2. Solve specialized problems based on the available inputs.
b3. Carry out new research studies in information systems.
b4. Write scientific papers in information systems.
b5. Assess risks in professional information systems practices.
b6. Plan to develop the performance of information systems.
b7. Take professional decisions in different scenarios related to information systems.
b8. Create and innovate.
b9. Talk and discuss based on proof and evidence.

c. Professional and Practical Skills

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

c1. Master basic and modern professional skills in information systems.
c2. Write and evaluate professional reports related to information systems.
c3. Evaluate and develop current methods and tools in information systems.
c4. Use technological tools to serve the professional information systems practice.
c5. Plan to develop professional information systems practice and the performance of the others.
c6. Evaluate the impact of information systems on society.

d. General and Transferable Skills

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

d1. Communicate efficiently by different means.
d2. Use information technology to develop the professional practice.
d3. Educate the others and assess their performance.
d4. Deploy a self-assessment and practice long-life learning.
d5. Deploy different recourses to obtain information and knowledge.

3. Teaching and Learning Methods

1. Discussion
2. Workshops
3. Projects
4. Case Study
5. Data Collections

4. Student Assessment

4a. Tools

Oral examination	Knowledge and Understanding - Intellectual Skills - General Skills
Thesis	Knowledge and Understanding - Intellectual Skills - Professional Skills - General Skills

5. Facilities Required for Teaching and Learning

- Labs equipped with computers and Internet facilities.
- Advanced research labs.
- Discussion rooms.
- Digital library contains links to international journals.
- A library.

Department Head: Prof. Taysir H. Abdel-Hamid

Signature:

Date: 1/9/2021