

Template For Program Specification

University **Ain Shams** Faculty(s)**Engineering**

Program Specification

A- Basic Information

- 1- Program title : B. SC. in Architecture – Urban Planning Section
- 2- Program type: Single Double Multiple
- 3- Department (s) : Department of Urban Planning
- 4- Coordinator : Prof. Dr. Youhansen Yehya Eid
- 5- External evaluator(s) :N/A.....
- 6- Last date of program specifications approval:September 2007.....

B- Professional Information

1- Program aims

To graduate an architect who has:

- 1- Comprehensive knowledge related to the fields of urban planning, urban design, landscape, architectural design and basic humanities.
- 2- The ability to analyze, assess, and solve different urban planning and design issues.
- 3- A significant awareness of the importance of integrating cultural, social, political, urban governance, urban management, and environmental issues in urban planning and design projects.
- 4- The ability to participate in teamwork and to develop distinctive presentation skills.

2- Intended learning outcomes (ILOs)

a- Knowledge and Understanding:

- a1. Understand the history of the city, its evolution, growth, development, its elements and components, including architecture style, cityscape and landscape
- a2. Understand principles of architectural design, urban design and construction systems.
- a3. Understand planning and building legislations and codes and contracts
- a4. Recognize elements of the built environment
- a5. Identify different architectural styles and theories.
- a6. Differentiate between the levels and theories of urban planning and design.
- a7. Understand principles of urban management.

- a8. Understand sociological and cultural, urban political, demographic and ethnic issues and their impact on the urban built environment
- a9. Identify the elements of the natural environment, different energy types and environmental control and their impact on climatic building design
- a10. Understand sustainability and its relation to planning and urban design
- a11. Understand infrastructure networks and services as part of the planning process
- a12. Understand basic applied and engineering science.
- a13. Understand the main concepts of computer modeling, simulations, rendering & presentation

b- Intellectual skills

- b1. Analyze the urban fabric in existing and new developments
- b2. Identify urban, social, political, economic and environmental problems
- b3. Assess and evaluate the city, its evolution, growth, development, its elements and components
- b4. Evaluate and assess demographic and economic growth, trends and policies
- b5. Suggest and evaluate alternative solutions for urban, architectural, social, political, economic and environmental problems
- b6. Relate and connect socio-cultural, socio-political, socio-economic issues to urbanism
- b7. Analyze engineering problems.

c- Professional and practical skills

- c1. Conduct research and collect data from different sources (field work, archival records, internet...etc)
- c2. Conduct field surveys (built environment – social surveys- traffic surveys)
- c3. Handle, process and document data (infer and predict)
- c4. Compare between different urban planning and design projects and environmental issues
- c5. Diagnose urban problems
- c6. Design and construct alternative solutions to urban planning and design projects and environmental problems
- c7. Apply GIS, remote sensing and modeling in urban planning and design projects and environmental problems
- c8. Use computer applications and contemporary software in urban planning and design projects
- c9. Structure and write technical reports
- c10. Apply contemporary tools and approaches to environmental problems related to the built environment
- c11. Prepare working drawings and construction documents for planning and design projects

d- General and transferable skills

- d1. Work in teams (team work).
- d2. Share ideas and communicate with others

- d3. Apply and raise awareness of professional ethics.
- d4. Present projects and data using different techniques (computer, manual... etc.)

3- Academic standards 3a External references for standards (Benchmarks)

3a External references for standards (Benchmarks)

The external references for standards considered in the development of this program were the National Academic Reference Standards (NARS) prepared by the engineering education sector of the supreme council of universities in Egypt and those of the American Accreditation Board for Engineering and Technology (ABET). Available copies of the NARS (issued in August 2006) and the ABET (approved in March 2007) are included in Annex (A) of this document.

3b Comparison of provision to external references

The following table explains how the ILO's of the current program compare to the requirements of the NARS and the ABET criteria for program outcomes and assessment:

Attributes of program graduates as per ABET Criterion (3) for program outcomes and assessment	Attributes of program graduates as per NARS Requirements for engineering programs, in general	Corresponding ILO's in Current Program	Courses Covering such ILO's
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Attributes of program graduates as per ABET Criterion (3) for program outcomes and assessment	Attributes of program graduates as per NARS Requirements for engineering programs, in general	Corresponding ILO's in Current Program	Courses Covering such ILO's
(a) ability to apply knowledge of mathematics, science and engineering	(a) ability to apply knowledge of mathematics, science and engineering concepts to the solution of complex engineering problems	a2, a3, a7, a8, a11, a12	PHM011 PHM021 PHM031 MDP021 PHM041 CSE011 MDP022 HUMx11 ARC151 CEP112 ARC111 ARC112 ARC121 CES113 CES142 ARC113 ARC131 ARC161 ARC212 ARC251 CES222 ARC261 ARC231 ARC241 UPL251 MEP271 ARC312 UPL311 UPL322 UPL351 CEP372 HUMx41 UPL361 UPL371 CEP441 ARC412 UPL412 UPL462 UPL471 UPL472 UPL499 UPL421
(b) ability to design and conduct experiments, as well as to analyze and interpret data	(b) ability to design and conduct experiments and to analyze and interpret data	a6, b1, b3, b6, b7, c1	PHM011 PHM021 PHM031 MDP021 PHM041 CSE011 MDP022 HUMx11 ARC131 ARC161 UPL241

Attributes of program graduates as per ABET Criterion (3) for program outcomes and assessment	Attributes of program graduates as per NARS Requirements for engineering programs, in general	Corresponding ILO's in Current Program	Courses Covering such ILO's
			UPL251 UPL311 UPL322 UPL332 UPL351 HUMx41 UPL333 UPL361 UPL371 CEP441 UPL412 UPL431 UPL471 UPL472 UPL499 UPL421 UPL432 UPL433
(c) ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability	(c) ability to design a system, component, or process to meet required needs	c5, c6, c9, c10, c11	PHM011 PHM021 PHM031 MDP021 PHM041 CSE011 MDP022 HUMx11 CES113 CES142 ARC131 ARC161 CES222 ARC261 UPL241 ARC231 ARC241 ARC312 UPL311 UPL322 UPL341 UPL351 CEP441 ARC412 UPL412 UPL431 UPL462 UPL472 UPL453 UPL499 UPL421
(d) ability to function on multi-	(d) ability to function on multi-	c9, d1, d2	PHM011 PHM021 PHM031

Attributes of program graduates as per ABET Criterion (3) for program outcomes and assessment	Attributes of program graduates as per NARS Requirements for engineering programs, in general	Corresponding ILO's in Current Program	Courses Covering such ILO's
disciplinary teams	disciplinary teams		MDP021 PHM041 CSE011 MDP022 HUMx11 ARC151 ARC111 ARC112 ARC121 ARC113 ARC212 ARC251 UPL251 ARC312 UPL311 UPL322 UPL332 UPL341 CEP372 UPL333 UPL361 UPL371 CEP441 UPL412 UPL431 UPL462 UPL471 UPL472 UPL499 UPL421 UPL432 UPL433
(e) ability to identify, formulate and solve engineering problems	(e) ability to identify, formulate and solve engineering problems	a4, a5, a9, b2, b4, b5, c4, c6	ARC151 ARC111 ARC112 ARC121 HUMx42

Attributes of program graduates as per ABET Criterion (3) for program outcomes and assessment	Attributes of program graduates as per NARS Requirements for engineering programs, in general	Corresponding ILO's in Current Program	Courses Covering such ILO's
			CES113 CES142 ARC113 ARC161 ARC212 ARC251 CES222 ARC261 UPL241 ARC231 UPL251 MEP271 ARC312 UPL311 UPL322 UPL332 UPL341 UPL351 CEP372 UPL333 UPL361 UPL371 CEP441 ARC412 UPL412 UPL431 UPL462 UPL471 UPL472 UPL453 UPL499 UPL421 UPL432 UPL433
(f) understanding of professional and	(f) understanding of professional and	a3, a10, c3, d1, d2, d3	ARC151 ARC111 ARC112 ARC121

Attributes of program graduates as per ABET Criterion (3) for program outcomes and assessment	Attributes of program graduates as per NARS Requirements for engineering programs, in general	Corresponding ILO's in Current Program	Courses Covering such ILO's
ethical responsibility	ethical responsibilities		CES113 CES142 ARC113 ARC161 ARC212 ARC251 CES222 ARC261 ARC241 UPL251 MEP271 ARC312 UPL311 UPL322 UPL332 UPL341 UPL351 CEP372 HUMx41 UPL333 UPL361 UPL371 CEP441 UPL412 UPL431 UPL462 UPL471 UPL499 UPL421 UPL432 UPL433
(g) ability to communicate effectively	(g) ability to communicate effectively	c9, d1, d2, d4	PHM011 PHM021 PHM031 MDP021 PHM041 CSE011 MDP022 HUMx11 ARC151 ARC111 ARC112 ARC121 ARC113 ARC212 ARC251 UPL241 UPL251 ARC312 UPL311 UPL322 UPL332 UPL341

Attributes of program graduates as per ABET Criterion (3) for program outcomes and assessment	Attributes of program graduates as per NARS Requirements for engineering programs, in general	Corresponding ILO's in Current Program	Courses Covering such ILO's
			CEP372 UPL333 UPL361 UPL371 CEP441 ARC412 UPL412 UPL431 UPL462 UPL471 UPL472 UPL453 UPL499 UPL421 UPL432 UPL433
(h) having the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context	(h) ability to consider and avoid the detrimental impact of engineering solutions within social or global measures	a1, a4, a6, a7, a8, a9, b1, b2, b3, b6, c2, c5, c10, d3	ARC121 HUMx42 CES113 CES142 ARC113 ARC131 ARC161 ARC212 CES222 ARC261 UPL241 ARC231 ARC241 UPL251 MEP271 ARC312 UPL311 UPL322 UPL341 UPL351 HUMx41 UPL333 UPL361 UPL371 CEP441 ARC412 UPL412 UPL431 UPL462 UPL471 UPL472 UPL453 UPL499 UPL421 UPL432 UPL433

Attributes of program graduates as per ABET Criterion (3) for program outcomes and assessment	Attributes of program graduates as per NARS Requirements for engineering programs, in general	Corresponding ILO's in Current Program	Courses Covering such ILO's
(i) recognition of the need for, and ability to engage in life-long learning		a1, a8, a10, b2, b6, c1, c2, c8, d3	ARC151 CEP112 ARC111 ARC112 ARC121 HUMx42 CES113 CES142 ARC113 ARC131 ARC161 ARC212 ARC251 CES222 ARC261 UPL241 ARC231 ARC241 UPL251 MEP271 ARC312 UPL311 UPL322 UPL332 UPL341 UPL351 CEP372 HUMx41 UPL333 UPL361 UPL371 CEP441 ARC412 UPL412 UPL431 UPL462 UPL471

Attributes of program graduates as per ABET Criterion (3) for program outcomes and assessment	Attributes of program graduates as per NARS Requirements for engineering programs, in general	Corresponding ILO's in Current Program	Courses Covering such ILO's
			UPL453 UPL499 UPL432 UPL433
(j) knowledge of contemporary issues		a1, a7, a8, a10, b4, c7, c8, c10, d4	PHM011 PHM021 PHM031 MDP021 PHM041 CSE011 MDP022 HUMx11 ARC151 CEP112 ARC111 ARC112 ARC121 ARC131 ARC212 ARC251 UPL241 ARC231 UPL251 MEP271 ARC312 UPL311 UPL322 UPL332 UPL341 UPL351 CEP372 UPL333 UPL361 UPL371 CEP441 ARC412 UPL412 UPL431 UPL462 UPL471 UPL472 UPL453 UPL499 UPL421 UPL432 UPL433
(k) ability to use the techniques, skills, and modern	(i) ability to use the techniques, skills, and modern	a13, c7, c8, c9, c10	PHM011 PHM021 PHM031 MDP021 PHM041

Attributes of program graduates as per ABET Criterion (3) for program outcomes and assessment	Attributes of program graduates as per NARS Requirements for engineering programs, in general	Corresponding ILO's in Current Program	Courses Covering such ILO's
engineering tools necessary for engineering practice	engineering tools necessary for engineering practice		CSE011 MDP022 HUMx11 ARC151 CEP112 ARC111 ARC112 ARC121 ARC212 ARC251 ARC241 MEP271 ARC312 UPL322 UPL332 UPL351 CEP372 CEP441 UPL431 UPL472 UPL453 UPL499 UPL432

4- Curriculum Structure and Contents

4.a- Program duration

4.b- Program structure

4.b.i- No. of hours per week: Lectures Lab./Exercise total

4.b.ii- No. of credit hours: Compulsory Elective Optional

4.b.iii- No. of credit hours of basic sciences courses: No. %

4.b.iv- No. of credit hours of courses of social sciences and humanities: No. %

4.b.v- No. of credit hours of specialized courses: No. %

4.b.vi- No. of credit hours of other courses: NO. %

4.b.vii- Practical/Field Training:

4.b.viii- Program Levels (in credit-hours system):

5- Program courses

6- 5.1- LEVEL/YEAR OF PROGRAM 1 SEMESTER 1

a. Compulsory

Code No.		Course Title	No. of units	No. of hours / week					Program ILOS Covered (BY no.)
				Lect.	Lab.	Exer.			
PHM	011	Mathematics (1)	NA	ε		ϒ		a12, b7, c9, d4	
PHM	021	Physics (1)	NA	ε	∩	∩		a12, b7, c9, d4	
PHM	031	Mechanics (1)	NA	ϒ	∩	∩		a12, b7, c9, d4	
MDP	021	Engineering Drawing & Projection	NA	∩		ε		a12, b7, c9, d4	
CSE	011	Computer Technology	NA	ϒ		∩		a12, b7, c9, d4	
PHM	041	Chemistry	NA	ε	∩	∩		a12, b7, c9, d4	

YEAR OF PROGRAM 1 SEMESTER 2

a- compulsory

Code No.		Course Title	No. of units	No. of hours / week			Program ILOS Covered (BY no.)
				Lect.	Lab.	Exer.	
PHM	011	Mathematics (1)	NA	ε		ϳ	a12, b7, c9, d4
PHM	021	Physics (1)	NA	ε	ϱ	ϱ	a12, b7, c9, d4
PHM	031	Mechanics (1)	NA	ϳ	ϱ	ϱ	a12, b7, c9, d4
MDP	021	Engineering Drawing & Projection	NA	ϱ		ε	a12, b7, c9, d4
HUM	x11	Technical English Language	NA	ϳ		—	a12, b7, c9, d4
MDP	022	Production Technology & Engineering History	NA	ε	ϳ	ϱ	a12, b7, c9, d4

YEAR OF PROGRAM 2 SEMESTER 1

a- compulsory

Code No.		Course Title	No. of units	No. of hours / week			Program ILOS Covered (BY no.)
				Lect.	Lab.	Exer.	
ARC	151	Building construction	NA	2		3	a2,a12,b5,c8,d2
CEP	112	Survey	NA	2	2		a12,c8
ARC	111	Visual Design & Design Fundamentals	NA	2		5	a2,b5,c8,d1,d2
ARC	112	Architectural Drawings & representation	NA	2		5	a2,b5,c8,d1,d2
ARC	121	Theory of Architecture	NA	4			a1,a2,a13,a14,b5,c8,d2
HUM	x42	Environmental Impact of Projects	NA	2		1	a9,b2,b5

YEAR OF PROGRAM 2 SEMESTER 2

a- compulsory

Code No.		Course Title	No. of units	No. of hours / week			Program ILOS Covered (BY no.)
				Lect.	Lab.	Exer.	
ARC	151	Building construction	NA	2		3	a2,a12,b5,c8,d2
CES	113	Theory of Structures	NA	3		2	a12,b5,c11,d3
CES	142	Foundation & Testing of Materials	NA	4		2	a12,b5,c11,d3
ARC	113	Architectural Design (1)	NA			7	a2,a4,b5,c4,d2,d3
ARC	131	History of Architecture (1)	NA	4			a1,a8,b1,c11
ARC	161	Environmental Design & Control	NA	1		2	a9,a12,b3,c11,d3

YEAR OF PROGRAM 3 SEMESTER 1

a- compulsory

Code No.		Course Title	No. of units	No. of hours / week				Program ILOS Covered (BY no.)
				Lect.	Lab.	Exer.		
ARC	212	Architectural Design (2)	NA			8		a2,a8,a9,b5,c8,d1,d2,d3
ARC	251	Building Construction & Principles of Working Drawings	NA	2		4		a2,a12,b5,c8,d2
CES	222	Concrete Structure	NA	4		2		a2,a12,b5,c11,d3
ARC	221	Theory of Architecture (2)	NA	4				a1,a2,a4,a5 ,b5,c8,d2
ARC	261	Acoustics & Artificial Lighting	NA	2				a4, a12, b5,c11,d3
UPL	241	Urban Landscaping	NA	2		2	4	a1,a4,b1,b5,c4,c6,d4

YEAR OF PROGRAM 3 SEMESTER 2

a- compulsory

Code No.		Course Title	No. of units	No. of hours / week				Program ILOS Covered (BY no.)
				Lect.	Lab.	Exer.		
ARC	212	Architectural Design (2)	NA			8		a2,a8,a9,b5,c8,d1,d2 ,d3
ARC	251	Building Construction & Principles of Working Drawings	NA	2		4		a2,a12,b5,c8,d2,d3
ARC	231	History of Architecture (2)	NA	4				a7, a8,a9 ,b2,c11
ARC	241	Computer Applications (1)	NA	2	2			a12,a13,c8,c11,d2,d3
UPL	251	Theories and History of Planning	NA	ε	-	-		a1,a6,a8,b3,b6,c1,c4 ,d2
MEP	271	Technical Installations	NA	3		1		a2,a13,b5,c8,d3

YEAR OF PROGRAM 4 SEMESTER 1

a- compulsory

Code No.		Course Title	No. of units	No. of hours / week				Program ILOS Covered (BY no.)
				Lect.	Lab.	Exer.		
ARC	312	Architectural Design (4)	NA			6		a2, a5, a9, b5, c6, c8, c11, d1, d4
UPL	311	Urban Design (1)	NA	γ		5		a1, a2, a4, b1, b5, b6, c4, c6, d1
UPL	322	Town Planning & Housing	NA	2		3		a1, a6, a8, b2, b3, b4, c1, c2, c5, c7, d1
UPL	332	Computer Application in Planning	NA	2		γ		a13, b5, c1, c8, d1, d4
UPL	341	Landscape Architecture	NA	1		3		a1, a4, b5, c4, c6, d1, d2
UPL	351	Environmental Studies	NA	2		γ		a8, a9, a10, a13, b2, b6, c4, c6, c7, c8, d3

YEAR OF PROGRAM 4 SEMESTER 2

a- compulsory

Code No.		Course Title	No. of units	No. of hours / week			Program ILOS Covered (BY no.)
				Lect.	Lab.	Exer.	
ARC	312	Architectural Design (4)	NA			6	a2, a5, a9, b5, c6, c8, c11, d1, d4
UPL	311	Urban Design (1)	NA	२		०	a1, a2, a4, b1, b5, b6, c4, c6, d1
UPL	322	Town Planning & Housing	NA	२		३	a1, a6, a8, a13, b2, b3, b4, c1, c2, c5, c7, d1
CEP	३१२	Highway & Traffic Engineering	NA	3		1	a11, b5, c8, d1, d4
HUM	X41	Legislation & Contracts	NA	2		1	a3, b1, c3, d3

b- Elective

Code No.		Course Title	No. of units	No. of hours / week			Program ILOS Covered (BY no.)
				Lect.	Lab.	Exer.	
UPL	333	Regional Urbanization	NA	2		2	a1, a6, b2, b3, b6 c1, c3, c4, d1, d2
UPL	361	Urban Sociology	NA	2		2	a8, b2, b4, b6, c1, c2, c3, d1, d4
UPL	371	Economic Geography	NA	2		2	a1, a8, b2 , b4, b6, c1, c2, c3, d1

YEAR OF PROGRAM 5 SEMESTER 1

a- compulsory

Code No.		Course Title	No. of units	No. of hours / week			Program ILOS Covered (BY no.)
				Lect.	Lab.	Exer.	
CEP	441	Infrastructure & Utilities	NA	1		२	a11, b5, c1, c10, d1
ARC	412	Architectural Design (5)	NA			6	a2, a4, b2, c6, c11, d4
UPL	412	Urban Design (2)	NA	2		8	a2, a4, b2, b5, b6, c4, c6, d1, d4
UPL	431	Urban Planning	NA	२		5	a1, a13, b2, b3, b6, c1, c2, c3, c4, c5, c7, d1, d2

b- Elective

Code No.		Course Title	No. of units	No. of hours / week			Program ILOS Covered (BY no.)
				Lect.	Lab.	Exer.	
UPL	462	Human Settlements	NA	2		२	a8, b4, b5, c5, d1
UPL	471	Urban Economy	NA	2		२	a7, b2, b4, b6, c3, d2
UPL	472	Feasibility Studies	NA	2		२	a7, a11, b3, b5, c9, d4

YEAR OF PROGRAM 5 SEMESTER 2

a- compulsory

Code No.		Course Title	No. of units	No. of hours / week			Program ILOS Covered (BY no.)
				Lect.	Lab.	Exer.	
UPL	453	Environmental Planning & Design	NA	۲		4	a9, a10, a13, b2, c4, c6, c7, d4
UPL	499	Project	NA	—		16	a8, b5, c1, c6, c8, d2, d4

b- 1-Elective

Code No.		Course Title	No. of units	No. of hours / week			Program ILOS Covered (BY no.)
				Lect.	Lab.	Exer.	
UPL	421	City Management	NA	2		۲	a7, b3, b4, c5, d2, d4
UPL	432	Sustainable Urban Development	NA	2		2	a9, a10, b6, c7, d2
UPL	433	Rural Development	NA	۲		۲	a1, a6, b6, c4, d1, d2

7- Program admission requirements

Having Egyptian Secondary education or equivalent certificate with major in Mathematics.

8- Regulations for progression and program completion

The student is considered successful if he passes the examinations in all courses of his class.

- The student is promoted to the next higher level if he fails in not more than two subjects of his class or from lower classes,
- In addition to the two subjects mentioned in the pervious item, the student who fails in two subjects in humanities and social sciences, whether from his class or from lower classes, is admitted to the transfer to the consecutive higher level. Passing successfully in all courses before obtaining the B.Sc. degree is a prerequisite.
- The referred student has to sit the examination in the courses in which he has failed together with the students studying the same courses. The student gets a pass grade when he passes the examination successfully. In case the student was considered absent with acceptable excuse in a course, he gets the actual grade,
- The grades of the successful student in a course and in the general grade are evaluated as follows
Distinction: from 85% of the total mark and upwards.
Very good: from 75% to less than 85% of the total mark.
Good from: 65% to less than 75% of the total mark
Pass: from: 50% to less than 65% of the total mark

The grades of a failing student in a course is estimated in one of' the following grades:

- Weak : from 30% to less than 50% of the total mark
Very weak: less than 30% of the total mark.

The B.Sc. general grade for students is based on the cumulative marks obtained during all the years of study. The students are then arranged serially according their cumulative sum.

The student is awarded an honor degree ii his cumulative sum is distinction or very good provided that he gets a grade not less than very good in any class of study other than the preparatory year. Moreover, he should have not failed in any examination he has sat in any class other than the preparatory year.

8- Evaluation of program intended learning outcomes

Evaluator	Tool	Sample
1- Senior students	Evaluation sheet	50 %
2- Alumni	Evaluation sheet & interview	5%
3- Stakeholders (Employers)	Evaluation sheet & interview	5
4-External Evaluator(s) (External Examiner(s))	Evaluation report	2
5- Other		