Republic of Iraq
Ministry of Higher Education & Scientific Research
Supervision and Scientific Evaluation Directorate
Quality Assurance and Academic Accreditation
International Accreditation Dept.

Academic Program Specification Form For The Academic 2020-2021

University: Baghdad
College : Engineering
Number Of Departments In The College : Thirteen
Date Of Form Completion : Feb.-2021

Dean's Name
Date : / /
Signature

Dean's Assistant For Scientific Affairs
Date : / /
Signature

The College Quality Assurance And University Performance Manager Date : / /
Signature

Quality Assurance And University Performance Manager
Date : / /
Signature

TEMPLATE FOR PROGRAMME SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

PROGRAMME SPECIFICATION

This Programme Specification provides a concise summary of the main features of the programme and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It is supported by a specification for each course that contributes to the programme.

1. Teaching Institution	University of Baghdad / College of Engineering
2. University Department/Centre	Department of Surveying Engineering
3. Programme Title	Cartography I
4. Title of Final Award	BSc. in Surveying Engineering
5. Modes of Attendance offered	Annual
6. Accreditation	
7. Other external influences	
8. Date of production/revision of this specification	Feb.-2021
9. Aims of the Programme	
This course aims to introduce the fundamental concepts of Cartography in addition to the logical steps of map design.	

10. Learning Outcomes, Teaching, Learning and Assessment Methods
A. Cognitive goals A1. At the end of the course, the students should have a complete knowledge about map design. A2. A3. A4. A5. A6.
B. The skills goals special to the programme . B1. B2. B3.
Teaching and Learning Methods
1. Lectures 2. Tutorials 3. Practical 4. Homework
Assessment methods
1. Exams, and Quizzes. 2. Student Engagement through Lectures 3. Projects.
C. Affective and value goals C1. C2. C3. C4.
Teaching and Learning Methods
Assessment methods

D. General and Transferable Skills (other skills relevant to employability and personal development) D1. D2. D3. D4.
Teaching and Learning Methods
Assessment Methods

11. Programme Structure				12. Awards and Credits
Level/Year	Course or Module Code	Course or Module Title	Credit rating	
Stage 3		Cartography I		Bachelor Degree Requires (x) credits
				Bachelor of Science in Surveying Engineering

13. Personal Development Planning
14. Admission criteria .
15. Key sources of information about the programme

Curriculum Skills Map																			
please tick in the relevant boxes where individual Programme Learning Outcomes are being assessed																			
				Programme Learning Outcomes															
Year / Level	Course Code	Course Title	Core (C) Title or Option (O)	Knowledge and understanding				Subject-specific skills				Thinking Skills				General and Transferable Skills (or) Other skills relevant to employability and personal development			
				A1	**A2**	**A3**	**A4**	**B1**	**B2**	**B3**	**B4**	**C1**	**C2**	**C3**	**C4**	**D1**	**D2**	**D3**	**D4**

TEMPLATE FOR COURSE SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

COURSE SPECIFICATION

This Course Specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the programme specification.

1. Teaching Institution	University of Baghdad / College of Engineering
2. University Department/Centre	Department of Surveying Engineering
3. Course title/code	Cartography I
4. Modes of Attendance offered	Annual
5. Semester/Year	2020 / 2021
6. Number of hours tuition (total)	60
7. Date of production/revision of this specification	Feb. / 2021
8. Aims of the Course	
This course aims to introduce the fundamental concepts of Cartography in addition to the logical steps of map design.	

9· Learning Outcomes, Teaching ,Learning and Assessment Methode

A- Cognitive goals .

A1. At the end of the course, the students should have a complete knowledge about map design.

A2. A3.

A4. A5.

A6 .

B. The skills goals special to the course. B1.

B2.

B3.

Teaching and Learning Methods

1. Lectures
2. Tutorials
3. Practical
4. Homework

Assessment methods

1. Exams, and Quizzes.
2. Student Engagement through Lectures
3. Projects.

C. Affective and value goals

C1. C2.

C3.

C4.

Teaching and Learning Methods

Assessment methods

D. General and rehabilitative transferred skills(other skills relevant to employability and personal development)
D1. D2.
D3.
D4.

10. Course Structure

Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
1	2		Cartography (Definition), Map (Definition)		
2	2		Coordinate Systems, Ellipsoidic (Geographic) coordinate system.		
3	2		Cartesian (Geocentric) coordinate system.		
4			Coordinates Transformation		
5	2		Cartographic Projection		
6	2		Scale: Bringing the Earth Down to Size		
7	2		Determining Scale		
8	2		Determining Scale with Lines of Latitude and Longitude.		
9	2		Scale (Type and Design), Choice of Suitable Scale.		
10	2		Changing Scale, Measuring Distance and Area from Maps.		
11	2		Kinds of Maps		
12	2		Grid and Graticule Construction, and Slope		
13	2		Cartographic symbols and color separation.		
14	2		Representation of physical features.		
15	2		Representation of Artificial features.		
16	2		Intervisibility and planning for map coverage.		

17	2		Exam		
18	2		Label Placement		
19	2		Lettering and Numbering.		
20	2		Guidelines for name Placement		
21	2		Basics of symbolization		
22	2		The Nature of Geographic phenomena		
23	2		Execution of Design		
24	2		Execution of Design, Subject Area, Title, Legend, Scale, Orientation, Inset Maps		
25	2		Automation of map compilation.		
26	2		Automation of Image formation.		
27	2		Digital Cartography		
28	2		Vector and raster data		
29	2		Georeferenced process		
30	2		Exam		

11. Infrastructure	
1. Books Required reading:	Cartography: Visualization of Spatial Data Map Design
2. Main references (sources)	
A- Recommended books and references (scientific journals, reports…).	Principles of map design
B-Electronic references, Internet sites…	https://www.qgistutorials.com/en/

12. The development of the curriculum plan

Republic of Iraq
Ministry of Higher Education & Scientific Research
Supervision and Scientific Evaluation Directorate
Quality Assurance and Academic Accreditation
International Accreditation Dept.

Academic Program Specification Form For The Academic Year 2020/2021

University: Baghdad
College: College of Engineering
Number of Departments in the College: Thirteen
Date of Form Completion: Feb/2021

Dean's Name
Date: / /
Signature

Dean's Assistant For Scientific Affairs
Date: / /
Signature

The College Quality Assurance And University Performance Manager Date: / /
Signature

Quality Assurance and University Performance Manager
Date: / /
Signature

TEMPLATE FOR PROGRAMME SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

PROGRAMME SPECIFICATION

This program specification provides a concise summary of the main features of the program and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It is supported by a specification for each course that contributes to the program.

1. Teaching Institution	College of Engineering
2. University /Department/Centre	Univ. of Baghdad / Department of Surveying
3. Program Title	Geodesy
4. Title of Final Award	BSc in surveying Eng.(4^{th} stage)
5. Modes of Attendance offered	Annual
6. Accreditation	College of Engineering
7. Other external influences	
8. Date of production/revision of this specification	05/02/2021
9. Aims of the Program:	
The Geodesy course aims to introduce the actual shape and size of the earth to enable the survivors to determine the positions with high level of accuracy. The subjects of Geodesy deal with Earth as spheroid and this necessitates introducing the most accurate methods of observations and accurate instruments which can be used effectively to fix the geodetic positions.	

10. Learning Outcomes, Teaching, Learning and Assessment Methods

A. Cognitive goals

A1. The students will learn and apply the skills of Geodesy to use them in their future specific works.
A2. The fourth year students should deliver a complete knowledge and practical experience of applying the algorithms of geodesy to introduce geodetic positions, geodetic networks.
A3. The designed program helps to understand the mathematical relationships between the geodetic positions.
A4. The graduates will be engaged in the professional practice of surveying with high ethical and professional responsibilities.

B. The skills goals special to the program.

B1. A broad education and knowledge for the essential issues that help to understand the impact of Geodesy solutions in a global, societal, and Satellite positioning.
B2. A practical ability to solve the faced problems by applying fundamental knowledge of computations and suitable techniques, skills, and tools.
B3. The student should deliver a complete knowledge and practical experience of applying a geometric Geodesy in the theoretical issues of Global positioning.
B4. An ability to communicate technical material written papers/reports and oral presentations.
B5. An understanding of the professional, societal, and ethical practice and responsibilities.

Teaching and Learning Methods

1. Lectures.
2. Tutorials.
3. Homework and Assignments.

Assessment methods

- Tests and Exams.

C. Affective and value goals

C1. An ability to apply knowledge of measurements, computations to derive different positions.
C2. Dealing with different instruments to measure and calculate the required quantities (i.e. distances and angles)
C3. Furthermore, the students know how to find mathematical solutions for the first and second geodetic problems (forward and inverse computations).
C4. An understanding of professional and ethical responsibility.
C5. An ability to use the techniques, skills, and modern engineering tools that are necessary in Satellite positioning.

Teaching and Learning Methods

1. Lectures.
2. Tutorials.
3. Homework and Assignments.

Assessment methods: - Tests and Exams.

D. General and Transferable Skills (other skills relevant to employability and personal development) D1. D2. D3. D4.
Teaching and Learning Methods
Assessment Methods

11. Program Structure				12. Awards and Credits
Level/Year	Course or Module Code	Course or Module Title	Credit rating	Bachelor Degree Requires (x) credits
4th Year		Geodesy		Bachelor of Science in Surveying Engineering

13. Personal Development Planning

1- Attending and holding workshops and seminars to see the latest developments in the field of specialization
2- Read the latest research
3- Carrying out projects and scientific research
4- Read the latest Journals within the specialty

14. Admission criteria.

15. Key sources of information about the program

Geodesy/ Geometric Geodesy/ Satellite Geodesy

Curriculum Skills Map

please tick in the relevant boxes where individual Program Learning Outcomes are being assessed

				Program Learning Outcomes															
Year / Level	Course Code	Course Title	Core (C) Title or Option (O)	Knowledge and understanding				Subject-specific skills				Thinking Skills				General and Transferable Skills (or) Other skills relevant to employability and personal development			
				A1	**A2**	**A3**	**A4**	**B1**	**B2**	**B3**	**B4**	**C1**	**C2**	**C3**	**C4**	**D1**	**D2**	**D3**	**D4**
4th stage/ 2020-2021		Geodesy		*	*	*	*	*	*	*	*	*	*	*	*				

TEMPLATE FOR COURSE SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

COURSE SPECIFICATION

This Course Specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the program specification.

1. Teaching Institution	University of Baghdad / College of Engineering
2. University Department/Centre	Department of Surveying
3. Course title/code	Geodesy
4. Modes of Attendance offered	Annual
5. Semester/Year	2020/2021
6. Number of hours tuition (total)	60 h
7. Date of production/revision of this specification	05/Feb/2021
8. Aims of the Course	
The Geodesy course aims to introduce the actual shape and size of the earth to enable the survivors to determine the positions with high level of accuracy. The subjects of Geodesy deal with Earth as spheroid and this necessitates introducing the most accurate methods of observations and accurate instruments which can be used effectively to fix the geodetic positions.	

9· Learning Outcomes, Teaching, Learning and Assessment Methods

A. Cognitive goals

A1. The students will learn and apply the skills of Geodesy to use them in their future specific works.
A2. The fourth year students should deliver a complete knowledge and practical experience of applying the algorithms of geodesy to introduce geodetic positions, geodetic networks.
A3. The designed program helps to understand the mathematical relationships between the geodetic positions.
A4. The graduates will be engaged in the professional practice of surveying with high ethical and professional responsibilities.

B. The skills goals special to the program.

B1. A broad education and knowledge for the essential issues that help to understand the impact of Geodesy solutions in a global, societal, and Satellite positioning.
B2. A practical ability to solve the faced problems by applying fundamental knowledge of computations and suitable techniques, skills, and tools.
B3. The student should deliver a complete knowledge and practical experience of applying a geometric Geodesy in the theoretical issues of Global positioning.
B4. An ability to communicate technical material written papers/reports and oral presentations.
B5. An understanding of the professional, societal, and ethical practice and responsibilities.

Teaching and Learning Methods

1. Lectures.
2. Tutorials.
3. Homework and Assignments.

Assessment methods

- Tests and Exams.

C. Affective and value goals

C1. An ability to apply knowledge of measurements, computations to derive different positions.
C2. Dealing with different instruments to measure and calculate the required quantities (i.e. distances and angles)
C3. Furthermore, the students know how to find mathematical solutions for the first and second geodetic problems (forward and inverse computations).
C4. An understanding of professional and ethical responsibility.
C5. An ability to use the techniques, skills, and modern engineering tools that are necessary in Satellite positioning.

Teaching and Learning Methods

1. Lectures.
2. Tutorials.
3. Homework and Assignments.

Assessment methods: - Tests and Exams.

D. General and rehabilitative transferred skills(other skills relevant to employability and personal development)
D1. D2.
D3.
D4.

10. Course Structure

Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
1.	2h		Introduction and definitions		
2.	2h		The sphere as a reference surface		
3.	2h		Geographical coordinates system		
4.	2h		Transformation between geographical coordinates systems		
5.	2h		The definition of the spheroid reference system		
6.	2h		Relationship between eccentricity and flattening		
7.	2h		Relationship between geodetic		
8.	2h		geocentric and reduce latitude		
9.	2h		Geodetic reference systems of coordinates		
10.	2h		Radii of curvature of spheroid		
11.	2h		Radius of prime vertical		
12.	2h		Radius of oblique normal section		

13.	2h		Area of part of spheroid and total area of spheroid		
14.	2h		Length of loxodrom		
15.	2h		First semester exam		
16.	2h		Reciprocal normal section		
17.	2h		The effect of height of signal due to azimuth		
18.	2h		Reduction of measured quantities in triangulation networks		
19.	2h		Transformation from normal length to geodesic		
20.	2h		Differential equations for geodesic line Direct and inverse geodetic problems 1st principal problem (forward comp.) , Legendre solution (forward comp.)		
21.	2h		Accurate solution using tables (forward comp.)		
22.	2h		Approximate inverse computations		
23.	2h		Accurate inverse computations		

24.	2h		The effect of change of spheroidal parameters due adjusted angles		
25.	2h		Adjustment of geodetic figure (central point figure)		
26.	2h		Astrogeodetic orientation of spheroid		
27.	2h		Physical geodesy and gravimetry , Specifications of equal potential surfaces		
28.	2h		Laplace azimuth , Computing the separation between geoid and spheroid from astro		
29.	2h		Optometric heights , Dynamic heights		
30.	2h		Second semester exam		

11. Infrastructure	
1. Books Required reading:	G. BOMFORD, 1981, Geodesy G. Mario A., 2004, Basic of Geomatics, online
2. Main references (sources)	G. BOMFORD, 1981, Geodesy G. Mario A., 2004, Basic of Geomatics, online
A- Recommended books and references (scientific journals, reports…).	
B-Electronic references, Internet sites…	Any site for Geodesy

12. The development of the curriculum plan

Republic of Iraq
Ministry of Higher Education & Scientific Research
Supervision and Scientific Evaluation Directorate
Quality Assurance and Academic Accreditation
International Accreditation Dept.

Academic Program Specification Form For The Academic 2020-2021

Universitiy: Baghdad
College : Engineering
Number Of Departments In The College : Thirteen
Date Of Form Completion : Feb.-2021

Dean's Name
Date : / /
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The College Quality Assurance And University Performance Manager Date : / /
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TEMPLATE FOR PROGRAMME SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

PROGRAMME SPECIFICATION

This Programme Specification provides a concise summary of the main features of the programme and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It is supported by a specification for each course that contributes to the programme.

1. Teaching Institution	**University of Baghdad / College of Engineering**
2. University Department/Centre	**Department of Surveying Engineering**
3. Programme Title	**Remote Sensing**
4. Title of Final Award	**BSc. in Surveying Engineering**
5. Modes of Attendance offered	**Annual**
6. Accreditation	
7. Other external influences	
8. Date of production/revision of this specification	**Feb.-2021**
9. Aims of the Programme	
This course aims to introduce the fundamental concepts of remote sensing in addition to the fundamentals of image processing.	

10. Learning Outcomes, Teaching, Learning and Assessment Methods

A. Cognitive goals

A1. **At the end of the course, students should have a complete knowledge about the different types of remote sensing approaches.**

A2. A3.

A4. A5.

A6.

B. The skills goals special to the programme .

B1.

B2. B3.

Teaching and Learning Methods

1. Lectures
2. Tutorials
3. Practical
4. Homework

Assessment methods

1. Exams, and Quizzes.
2. Student Engagement through Lectures
3. Projects.

C. Affective and value goals

C1. C2.

C3. C4.

Teaching and Learning Methods

Assessment methods

D. General and Transferable Skills (other skills relevant to employability and personal development) D1. D2. D3. D4.
Teaching and Learning Methods
Assessment Methods

11. Programme Structure				12. Awards and Credits
Level/Year	Course or Module Code	Course or Module Title	Credit rating	
Stage 3		Remote Sensing		Bachelor Degree Requires (x) credits
				Bachelor of Science in Surveying Engineering

13. Personal Development Planning
14. Admission criteria .
15. Key sources of information about the programme

Curriculum Skills Map

please tick in the relevant boxes where individual Programme Learning Outcomes are being assessed

				Programme Learning Outcomes															
Year / Level	Course Code	Course Title	Core (C) Title or Option (O**)**	Knowledge and understanding				Subject-specific skills				Thinking Skills				General and Transferable Skills (or) Other skills relevant to employability and personal development			
				A1	**A2**	**A3**	**A4**	**B1**	**B2**	**B3**	**B4**	**C1**	**C2**	**C3**	**C4**	**D1**	**D2**	**D3**	**D4**

TEMPLATE FOR COURSE SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

COURSE SPECIFICATION

This Course Specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the programme specification.

1. Teaching Institution	University of Baghdad / College of Engineering
2. University Department/Centre	Department of Surveying
3. Course title/code	Remote Sensing
4. Modes of Attendance offered	Course
5. Semester/Year	2020/2021
6. Number of hours tuition (total)	٣٠
7. Date of production/revision of this specification	
8. Aims of the Course	
This course aims to introduce the fundamental concepts of remote sensing in addition to the fundamentals of image processing.	

9· Learning Outcomes, Teaching ,Learning and Assessment Methode

A- Cognitive goals . A1. At the end of the course, students should have a complete knowledge about the different types of remote sensing approaches.
A2. A3.
A4. A5.
A6 .

B. The skills goals special to the course. B1.
B2.
B3.

Teaching and Learning Methods

1. Lectures
2. Tutorials
4. Homework

Assessment methods

1. Exams, and Quizzes.
2. Student Engagement through Lectures
3. Projects.

C. Affective and value goals
C1. C2.
C3.
C4.

Teaching and Learning Methods

Assessment methods

D. General and rehabilitative transferred skills(other skills relevant to employability and personal development)
D1. D2.
D3.
D4.

10. Course Structure					
Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
1	2		Definition of remote sensing, Electromagnetic radiation		
2	2		Electromagnetic spectrum		
3	2		Energy interaction process		
4	2		Remote sensing system, Active and passive sensing system		
5	2		Sensors and platforms		
6	2		Spectral resolution Radiometric resolution, Temporal resolution		
7	2		Multispectral scanner, thermal Imaging		
8	2		Land observation satellites		
9	2		Exam		
10	2		Landsat orbit cycle, Landsat sensors		
11	2		SPOT satellite program		
12	2		Micro wave remote sensing, Radar Basics		
13	2		Viewing geometry& Spatial resolution		

14	2		Image processing, Visual interpretation, Digital processing		
15	2		Enhancement		

11. Infrastructure	
1. Books Required reading:	1. Introduction to remote sensing 2. Introduction to microwave remote sensing
2. Main references (sources)	
A- Recommended books and references (scientific journals, reports…).	1. Introduction to remote sensing 2. Introduction to microwave remote sensing
B-Electronic references, Internet sites…	

12. The development of the curriculum plan

Republic of Iraq
Ministry of Higher Education & Scientific Research
Supervision and Scientific Evaluation Directorate
Quality Assurance and Academic Accreditation
International Accreditation Dept.

Academic Program Specification Form For The Academic Year 2020/2021

Universitiy: Baghdad
College : Engineering
Number Of Departments In The College :Surveying
Date Of Form Completion :1-6-2020

Dean's Name
Date : / /
Signature

Dean's Assistant For Scientific Affairs
Date : / /
Signature

The College Quality Assurance And University Performance Manager Date : / /
Signature

Quality Assurance And University Performance Manager
Date : / /
Signature

TEMPLATE FOR PROGRAMME SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

PROGRAMME SPECIFICATION

This Programme Specification provides a concise summary of the main features of the programme and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It is supported by a specification for each course that contributes to the programme.

1. Teaching Institution	University of Baghdad
2. University Department/Centre	Surveying engineering
3. Programme Title	Geographic Information System(GIS)
4. Title of Final Award	Bachelor Degree in surveying engineering
5. Modes of Attendance offered	Annual
6. Accreditation	
7. Other external influences	
8. Date of production/revision of	1-6-2020
9. Aims of the Programme	
The programme aims to teach and know the principles (GIS) and software that relate it in order to produce digital maps for any study area and ability to analyze these information that	
Decision makers in this field	

10. Learning Outcomes, Teaching, Learning and Assessment Methods
A. Cognitive goals A1. GIS A2. A3. A4. A5. A6.
B. The skills goals special to the programme . B1.softwares B2. B3.
Teaching and Learning Methods
Assessment methods
C. Affective and value goals C1. C2. C3. C4.
Teaching and Learning Methods
Assessment methods
Exam and quizzes

D. General and Transferable Skills (other skills relevant to employability and personal development)
Teaching and Learning Methods
Online and in site(college)
Assessment Methods
Exam and quizzes

11. Programme Structure				12. Awards and Credits
Level/Year	Course or Module Code	Course or Module Title	Credit rating	
				Bachelor Degree Requires (x) credits
2020		GIS	2 theory +3 pracitical	

13. Personal Development Planning
14. Admission criteria .
15. Key sources of information about the programme

Curriculum Skills Map																			
please tick in the relevant boxes where individual Programme Learning Outcomes are being assessed																			
				Programme Learning Outcomes															
Year / Level	Course Code	Course Title	Core (C) Title or Option (O)	Knowledge and understanding				Subject-specific skills				Thinking Skills				General and Transferable Skills (or) Other skills relevant to employability and personal development			
				A1	**A2**	**A3**	**A4**	**B1**	**B2**	**B3**	**B4**	**C1**	**C2**	**C3**	**C4**	**D1**	**D2**	**D3**	**D4**

TEMPLATE FOR COURSE SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

COURSE SPECIFICATION

This Course Specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the programme specification.

1. Teaching Institution	University of Baghdad
2. University Department/Centre	Surveying
3. Course title/code	Geographic Information System(GIS)
4. Modes of Attendance offered	Annual
5. Semester/Year	2020-2021
6. Number of hours tuition (total)	120
7. Date of production/revision of this Specification	
8. Aims of the Course	
This course aims to introduce the fundamental concepts of geographical information system in Surveying engineering	

9· Learning Outcomes, Teaching ,Learning and Assessment Methode

A- Cognitive goals . A1. A2. A3. A4. A5. A6 .
B. The skills goals special to the course. B1. B2. B3.
Teaching and Learning Methods
Assessment methods
C. Affective and value goals C1. C2. C3. C4.
Teaching and Learning Methods
Online and in site
Assessment methods
Exam and quizzes

D. General and rehabilitative transferred skills(other skills relevant to employability and personal development)

D1. D2.

D3.

D4.

10. Course Structure					
Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
30	120		2 theory +3 practical	Online and in site	Exams and quizzes

11. Infrastructure	
1. Books Required reading:	د٠ جمعه داود – كتاب علم نظم المعلومات الجغرافية د٠ رشا نوفل- التحليل والرسم في برنامج GIS الجزء الاول والثاني
2. Main references (sources)	**الجغرافية** من **المعلومات** الطيب- **نظم** أحمد محمد الطيب .م الالف
A- Recommended books and references (scientific journals, reports…).	**الجغرافية** من **المعلومات** الطيب- **نظم** أحمد محمد الطيب .م الالف
B-Electronic references, Internet sites…	GIS4 مواقع د٠ جمعه داود على قناته في YouTube –

12. The development of the curriculum plan

Republic of Iraq
Ministry of Higher Education & Scientific Research
Supervision and Scientific Evaluation Directorate
Quality Assurance and Academic Accreditation
International Accreditation Dept.

Academic Program Specification Form For The Academic

University: Baghdad University
College : Engineering
Number Of Departments In The College :13 Thirteen Departments
Date Of Form Completion :1/2/2021

Dean's Name

Date : / /

Signature

Dean's Assistant For Scientific Affairs

Date : / /
Signature

The College Quality Assurance And University Performance Manager Date : / /
Signature

Quality Assurance And University Performance Manager
Date : / /
Signature

TEMPLATE FOR PROGRAMME SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

PROGRAMME SPECIFICATION

This Programme Specification provides a concise summary of the main features of the programme and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It is supported by a specification for each course that contributes to the programme.

1. Teaching Institution	University of Baghdad /College of Engineering
2. University Department/Centre	department of Surveying
3. Programme Title	Programming II
4. Title of Final Award	BSc in surveying engineering
5. Modes of Attendance offered	Annual
6. Accreditation	
7. Other external influences	
8. Date of production/revision of this specification	1/2/2021
9. Aims of the Programme	
The course aims to introduce the MATLAB programming language and learn students preparing cods in surveying applications and solving many engineering problems.	

10. Learning Outcomes, Teaching, Learning and Assessment Methods

A. Cognitive goals

A1. Program graduates will apply communication skills, lifelong learning attitude, and the knowledge of mathematics and basic science to attain advancement within the surveying profession.

A2. Program graduates will exhibit creativity, leadership and team-building abilities, cultural appreciation and an understanding of global.

A3. Program graduates will be engaged in the professional practice of engineering with high ethical and professional responsibilities.

.

B. The skills goals special to the programme .

B1. An ability to solve surveying engineering problems using Matlab programming.
B2. An ability to identify, formulate, and solve mathematics, statistics problems using designed cods.
B3. An ability to design and conduct experiments and to analyze and interpret data.
B4. An ability to function within multidisciplinary teams.
B5. An understanding of professional, ethical practice and responsibilities.

Teaching and Learning Methods

1. Lectures(PDF,PPT and video).
2. Tutorials.
3. Homework , Assignments and Tests.
4. Reports and Exams.

Assessment methods

1.Reports
2.Tests
3.Exams

C. Affective and value goals

C1.An ability to apply knowledge of mathematics, science, and engineering
C2. An ability to design and conduct experiments, as well as to analyze and interpret data.
C3. An ability to identify, formulate, and solve engineering problems
C4. An understanding of professional and ethical responsibility
C5. An ability to communicate effectively
C6. An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

Teaching and Learning Methods

1. Lectures(PDF,PPT and video).
2. Tutorials.
3. Homework and Assignments.
4. Tests and Exams.

Assessment methods

1.Reports
2.Tests
3.Exams

D. General and Transferable Skills (other skills relevant to employability and personal development)

1.Responsibiy

2. Confidence

Teaching and Learning Methods

1. Lectures(PDF,PPT and video).
2. Tutorials.
3. Homework and Assignments.
4. Tests and Exams.

Assessment Methods

1.Reports
2.Tests
3.Exams

11. Programme Structure

12. Awards and Credits

Level/Year	Course or Module Code	Course or Module Title	Credit rating	
2nd stage/2020-2021		Introduction to Matlab		Bachelor Degree Requires (x) credits
2nd stage/2020-2021		M-files		
2nd stage/2020-2021		Working in the command window		
2nd stage/2020-2021		Variables and constants		
2nd stage/2020-2021		Input and output commands		
2nd stage/2020-2021		Entering arrays and matrices		
2nd stage/2020-2021		Matrices operations		
2nd stage/2020-2021		Solving system of linear equations		

2nd stage/2020-2021		Statistical commands		
2nd stage/2020-2021		For –end loops		
2nd stage/2020-2021		While- end loops		
2nd stage/2020-2021		If statements		
2nd stage/2020-2021		Surveying applications		
2nd stage/2020-2021		Graphics		
2nd stage/2020-2021		Plotting commands		
2nd stage/2020-2021		Formatting figures		
2nd stage/2020-2021		3D plotting		

13. Personal Development Planning

1. Publishing researches in the field of specialization
2. Attending and holding workshops and seminars to see the latest developments in the field of specialization
3. Read the latest research
4. Carrying out projects and scientific research

14. Admission criteria .

15. Key sources of information about the programme

Getting started with MATLAB

Republic of Iraq
Ministry of Higher Education & Scientific Research
Supervision and Scientific Evaluation Directorate
Quality Assurance and Academic Accreditation
International Accreditation Dept.

Academic Program Specification Form For The Academic Year 2020/2021

University: Baghdad University
College : Engineering
Number Of Departments In The College :13 Thirteen Departments
Date Of Form Completion :1/2/2021

Dean's Name
Date : / /
Signature

Dean's Assistant For Scientific Affairs
Date : / /
Signature

The College Quality Assurance And University Performance Manager Date : / /
Signature

Quality Assurance And University Performance Manager
Date : / / Signature

TEMPLATE FOR PROGRAMME SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

PROGRAMME SPECIFICATION

This Programme Specification provides a concise summary of the main features of the programme and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It is supported by a specification for each course that contributes to the programme.

1. Teaching Institution	University of Baghdad / College of Engineering
2. University Department/Centre	department of Surveying
3. Programme Title	Photogrammetry I
4. Title of Final Award	BSc in surveying engineering
5. Modes of Attendance offered	Annual
6. Accreditation	
7. Other external influences	
8. Date of production/revision of this specification	1/2/2021
9. Aims of the Programme	
The student should have a complete knowledge and practical experience of applying photogrammetric solution to solve Surveying problems.	

10. Learning Outcomes, Teaching, Learning and Assessment Methods

A. Cognitive goals

A1. Program graduates will apply communication skills, lifelong learning attitude, and the knowledge of mathematics and basic science to attain advancement within the surveying profession.
A2. Program graduates will exhibit creativity, leadership and team-building abilities, cultural appreciation and an understanding of global.
A3. Program graduates will be engaged in the professional practice of engineering with high ethical and professional responsibilities.
.

B. The skills goals special to the programme .

B1. An ability to solve surveying engineering problems in photogrammetry.
B2. An ability to identify, formulate, and solve mathematics, statistics problems using designed cods.
B3. An ability to design and conduct experiments and to analyze and interpret data.
B4. An ability to function within multidisciplinary teams.
B5. An understanding of professional, ethical practice and responsibilities.

Teaching and Learning Methods

1. Lectures(PDF,PPT and video).
2. Tutorials.
3. Homework and Assignments.
4. Tests and Exams.

Assessment methods

1.Reports
2.Tests
3.Exams

C. Affective and value goals

C1.An ability to apply knowledge of mathematics, science, and engineering
C2. An ability to design and conduct experiments, as well as to analyze and interpret data.
C3. An ability to identify, formulate, and solve photogrammetric engineering problems
C4. An understanding of professional and ethical responsibility
C5. An ability to communicate effectively
C6. An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

Teaching and Learning Methods

1. Lectures(PDF,PPT and video).
2. Tutorials.
3. Homework and Assignments.
4. Tests and Exams.

Assessment Methods

1.Reports
2.Tests
3.Exams

D. General and Transferable Skills (other skills relevant to employability and personal development)

1.Responsibiy
2. Confidence

Teaching and Learning Methods

1. Lectures(PDF,PPT and video).
2. Tutorials.
3. Homework and Assignments.
4. Tests and Exams.

Assessment methods

1.Reports
2.Tests
3.Exams

11. Programme Structure

Level/Year	Course or Module Code	Course or Module Title	Credit rating	12. Awards and Credits
2nd stage/2020-2021		Introduction and overview of Photogrammetry		Bachelor Degree Requires (x) credits
2nd stage/2020-2021		Types of photogrammetry		
2nd stage/2020-2021		Types of photographs		
2nd stage/2020-2021		Image measurements and refinements		
2nd stage/2020-2021		Geometry of tilted photographs		
2nd stage/2020-2021		Photo scale		
2nd stage/2020-2021		Geometry of tilted photographs		
2nd stage/2020-2021		Digital images		

13. Personal Development Planning

1.Publishing researches in the field of specialization
2.Attending and holding workshops and seminars to see the latest developments in the field of specialization
3. Read the latest research
4. Carrying out projects and scientific research

14. Admission criteria .

15. Key sources of information about the programme

Elements of Photogrammetry

Republic of Iraq
Ministry of Higher Education & Scientific Research
Supervision and Scientific Evaluation Directorate
Quality Assurance and Academic Accreditation
International Accreditation Dept.

Academic Program Specification Form For The Academic

University: Baghdad University
College : Engineering
Number Of Departments In The College :13 Thirteen Departments
Date Of Form Completion :1/2/2021

Dean's Name
Date : / /
Signature

Dean's Assistant For Scientific Affairs
Date : / /
Signature

The College Quality Assurance And University Performance Manager Date : / /
Signature

Quality Assurance And University Performance Manager
Date : / /
Signature

TEMPLATE FOR PROGRAMME SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

PROGRAMME SPECIFICATION

This Programme Specification provides a concise summary of the main features of the programme and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It is supported by a specification for each course that contributes to the programme.

1. Teaching Institution	University of Baghdad /College of Engineering
2. University Department/Centre	department of Surveying
3. Programme Title	Matrices
4. Title of Final Award	BSc in surveying engineering
5. Modes of Attendance offered	Annual
6. Accreditation	
7. Other external influences	
8. Date of production/revision of this specification	1/2/2021
9. Aims of the Programme	
The course aims to prepare students to be familiar with the details needed in the subsequent stages in many applications in the specialty classes and so it be as sports, in addition to solving many engineering problems The student should deliver a complete knowledge and to solving many engineering problems	

10. Learning Outcomes, Teaching, Learning and Assessment Methods

A. Cognitive goals

A1. Program graduates will apply communication skills, lifelong learning attitude, and the knowledge of mathematics and basic science to attain advancement within the surveying profession.

A2. Program graduates will exhibit creativity, leadership and team-building abilities, cultural appreciation and an understanding of global.

A3. Program graduates will be engaged in the professional practice of engineering with high ethical and professional responsibilities.

.

B. The skills goals special to the programme .

B1. An ability to solve surveying engineering problems using matrices algebra.
B2. An ability to identify, formulate, and solve mathematics, statistics problems using designed cods.
B3. An ability to design and conduct experiments and to analyze and interpret data.
B4. An ability to function within multidisciplinary teams.
B5. An understanding of professional, ethical practice and responsibilities.

Teaching and Learning Methods

1. Lectures(PDF,PPT and video).
2. Tutorials.
3. Homework , Assignments and Tests.
4. Reports and Exams.

Assessment methods

1.Reports
2.Tests
3.Exams

C. Affective and value goals

C1.An ability to apply knowledge of mathematics, science, and engineering
C2. An ability to design and conduct experiments, as well as to analyze and interpret data.
C3. An ability to identify, formulate, and solve engineering problems
C4. An understanding of professional and ethical responsibility
C5. An ability to communicate effectively
C6. An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

Teaching and Learning Methods

1. Lectures(PDF,PPT and video).
2. Tutorials.
3. Homework and Assignments.
4. Tests and Exams.

Assessment methods

1.Reports
2.Tests
3.Exams

D. General and Transferable Skills (other skills relevant to employability and personal development)

1.Responsibiy
2. Confidence

Teaching and Learning Methods

1. Lectures(PDF,PPT and video).
2. Tutorials.
3. Homework and Assignments.
4. Tests and Exams.

Assessment methods

1.Reports
2.Tests
3.Exams

11. Programme Structure				12. Awards and Credits
Level/Year	Course or Module Code	Course or Module Title	Credit rating	
2nd stage/2020-2021		Introduction, definitions, Matrices, Equal Matrices.		Bachelor Degree Requires (x) credits
2nd stage/2020-2021		Production of Matrices, some types of matrices.		
2nd stage/2020-2021		Determinant of matrices, determined of orders (2*2) and		
2nd stage/2020-2021		Minors and Cofactors, determinant of matrix by Chio's method		
2nd stage/2020-2021		The Inverse of a matrix, Inverse from the adjoint .		
2nd stage/2020-2021		Inverse of matrix by partitioning, solved problems.		
2nd stage/2020-2021		Inverse of matrix by Reduction, solved problems		
2nd stage/2020-2021		Solution of simultaneous linear Equations by matrices: Cramer's method, Inverse method.		

2nd stage/2020-2021		Solution of simultaneous linear Equations by matrices: Gauss elimination, and Cholesky		
2nd stage/2020-2021		Characteristic Values and Characteristic vectors: Eigen values and Eigen vectors.		
2nd stage/2020-2021		Eigen values and Eigen vectors by long deviation.		
2nd stage/2020-2021		Conic sections by matrices.		

13. Personal Development Planning

1.Publishing researches in the field of specialization
2.Attending and holding workshops and seminars to see the latest developments in the field of specialization
3. Read the latest research
4. Carrying out projects and scientific research

14. Admission criteria .

15. Key sources of information about the programme

Elements of Abstract and linear Algebra

Curriculum Skills Map																			
please tick in the relevant boxes where individual Programme Learning Outcomes are being assessed																			
				Programme Learning Outcomes															
Year / Level	Course Code	Course Title	Core (C) Title or Option (O)	Knowledge and understanding				Subject-specific skills				Thinking Skills				General and Transferable Skills (or) Other skills relevant to employability and personal development			
				A1	**A2**	**A3**	**A4**	**B1**	**B2**	**B3**	**B4**	**C1**	**C2**	**C3**	**C4**	**D1**	**D2**	**D3**	**D4**
2nd stage/2020-2021		Programming II	C																
		Photogrammetry I	C																
		Matrices	C																

وزارة التعليم العالي والبحث العلمي

جـــهاز الإشـــراف والتقـويم العلـمي
دائرة ضمان الجودة والاعتماد الأكاديمي

استمارة وصف البرنامج الأكاديمي للكليات والمعاهد

للعام الدراسي ٢٠٢٠-٢٠٢١

الجامعة : بغداد

الكلية /المعهد : الهندسه

القسم العلمي : هندسة المساحه

تاريخ ملء الملف : ٦-٢-٢٠٢١

التوقيع :

اسم رئيس القسم :

التاريخ :

التوقيع :

اسم المعاون العلمي :

التاريخ :

دقق الملف من قبل

شعبة ضمان الجودة والأداء الجامعي

اسم مدير شعبة ضمان الجودة والأداء الجامعي:

التاريخ / /

التوقيع

مصادقة السيد العميد

وصف البرنامج الأكاديمي

يوفر وصف البرنامج الأكاديمي هذا ايجازاً مقتضياً لأهم خصائص البرنامج ومخرجات التعلم المتوقعة من الطالب تحقيقها مبرهناً عما إذا كان قد حقق الاستفادة القصوى من الفرص المتاحة . ويصاحبه وصف لكل مقرر ضمن البرنامج

١. المؤسسة التعليمية	جامعه بغداد
٢. القسم العلمي / المركز	كليه الهندسه- قسم هندسة المساحه
٣. اسم البرنامج الأكاديمي او المهني	نظام المعلومات الجغرافية
٤. اسم الشهادة النهائية	بكالوريوس هندسه المساحه
٥. النظام الدراسي : سنوي /مقررات/اخرى	سنوي
٦. برنامج الاعتماد المعتمد	المرحله الرابعه
٧. المؤثرات الخارجية الأخرى	
٨. تاريخ إعداد الوصف	**٢٠٢٠-٢٠٢١**
٩. أهداف البرنامج الأكاديمي	
تعليم وتدريب الطالب على فهم الاسس النظريه والعمليه لعلم نظم المعلومات الجغرافية باعتباره من العلوم	
الحديثة والمهمه في الوقت الحاضر عموما وخاصه في هندسة المساحه بسبب ارتباطه وتطبيقاته بعده علوم ومنها الجغرافيه والاحصاء والحا سوب	

١٠. مخرجات البرنامج المطلوبة وطرائق التعليم والتعلم والتقييم
أ-ا الاهداف المعرفية . أ١- التعرف على نظام المعلومات الجغرافيه اعتباره نظاما يدخل في معظم التطبيقات الهندسيه بكافه اختصاصتها أ٢- أ٣- أ٤- أ٥- أ٦-
ب -الاهداف المهاراتية الخاصة بالبرنامج : ب ١ – يكون للطالب مهاره في استخدام البرنامج الخاص بالنظام والتي سوف يستفاد منها في سوق العمل ب ٢ - ب ٣ -
طرائق التعليم والتعلم
تعليم مدمج (الكتروني مع حضوري)
طرائق التقييم
الامتحانات والواجبات البيتية والصفية نظريا وعمليا
ج-الاهداف الوجدانية والقيمية : ج١- ج٢- ج٣- ج٤-
طرائق التعليم والتعلم
تعليم مدمج (الكتروني مع حضوري)

طرائق التقييم

د -المهارات العامة والتأهيلية المنقولة (المهارات الأخرى المتعلقة بقابلية التوظيف والتطور الشخصي). د١- مهاره الحاسوب د٢-مهارة الاختصاص الهندسي مع بقيه الاختصاصات د٣- د٤-
طرائق التعليم والتعلم
تعليم مدمج (الكتروني مع حضوري)
طرائق التقييم
الامتحانات والواجبات البيتية والصفية نظريا وعمليا
١١. بنية البرنامج

المرحلة الدراسية	رمز المقرر أو المساق	اسم المقرر أو المساق	الساعات المعتمدة	
			نظري	عملي
الرابعه		نظم المعلومات الجغرافية	٢	٣

١٢. التخطيط للتطور الشخصي
١٣. معيار القبول (وضع الأنظمة المتعلقة بالالتحاق بالكلية أو المعهد)
١٤. أهم مصادر المعلومات عن البرنامج
د. جمعه داود – كتاب علم نظم المعلومات الجغرافية د. رشا نوفل- التحليل والرسم في برنامج GIS الجزء الاول والثاني

مخطط مهارات المنهج																					
يرجى وضع اشارة في المربعات المقابلة لمخرجات التعلم الفردية من البرنامج الخاضعة للتقييم																					
				مخرجات التعلم المطلوبة من البرنامج																	
السنة / المستوى	رمز المقرر	اسم المقرر	أساسي أم اختياري	الاهداف المعرفية				الاهداف المهاراتية الخاصة بالبرنامج				الاهداف الوجدانية والقيمية				المهارات العامة والتأهيلية المنقولة (المهارات الأخرى المتعلقة بقابلية التوظيف والتطور الشخصي)			
				أ١	أ٢	أ٣	أ٤	ب١	ب٢	ب٣	ب٤	ج١	ج٢	ج٣	ج٤	د١	د٢	د٣	د٤
٢٠٢١		نظم المعلومات الجغرافية	اساسي	√				√								√	√		

نموذج وصف المقرر

وصف المقرر

يوفر وصف المقرر هذا إيجازاً مقتضياً لأهم خصائص المقرر ومخرجات التعلم المتوقعة من الطالب تحقيقها مبرهناً عما إذا كان قد حقق الاستفادة القصوى من فرص التعلم المتاحة. ولابد من الربط بينها وبين وصف البرنامج.

١. المؤسسة التعليمية	جامعة بغداد
٢. القسم العلمي / المركز	كلية الهندسة – قسم هندسة المساحة
٣. اسم / رمز المقرر	نظم المعلومات الجغرافية
٤. أشكال الحضور المتاحة	
٥. الفصل / السنة	سنوي
٦. عدد الساعات الدراسية (الكلي)	١٢٠
٧. تاريخ إعداد هذا الوصف	٢٠٢٠--٢٠٢١
٨. أهداف المقرر	
يهدف المقرر الى	
ليم وتدريب الطالب على فهم الاسس النظريه والعمليه لعلم نظم المعلومات الجغرافية باعتباره من العلوم	
حديثة والمهمه في الوقت الحاضر عموما وخاصه في هندسة المساحه بسبب ارتباطه وتطبيقاته بعده علوم نها الجغرافيه والاحصاء والحا سوب	

٩. مخرجات المقرر وطرائق التعليم والتعلم والتقييم
أ- الاهداف المعرفية أ١- أ٢- أ٣- أ٤- أ٥- أ٦-
ب - الاهداف المهاراتية الخاصة بالمقرر ب١ - ب٢ - ب٣ - ب٤-
طرائق التعليم والتعلم
تعليم مدمج (الكتروني مع حضوري)
طرائق التقييم
الامتحانات والواجبات البيتية والصفية نظريا وعمليا
ج- الاهداف الوجدانية والقيمية ج١- ج٢- ج٣- ج٤-
طرائق التعليم والتعلم
طرائق التقييم
% نظري: امتحانات فصلية عدد ٢ ، امتحانات اسبوعية عدد ٤

٢٠% عملي : تجارب صفية عدد ١٠ ٢٠%عملي : تجارب بيتية عدد ١٠

٦٠% الامتحان النهائي					
الأسبوع	الساعات	مخرجات التعلم	اسم الوحدة / أو الموضوع	طريقة التعليم	طريقة التقييم
د - المهارات العامة والتأهيلية المنقولة (المهارات الأخرى المتعلقة بقابلية التوظيف والتطور الشخصي).					
د١-					
د٢-					
د٣-					
د٤-					

١٠ بنية المقرر	
١. البنية التحتية	
١- الكتب المقررة المطلوبة	د. جمعه داود – كتاب علم نظم المعلومات الجغرافية
٢- المراجع الرئيسية (المصادر)	د. جمعه داود – كتاب علم نظم المعلومات الجغرافية د. راشا نوفل- التحليل والرسم في برنامج GIS الجزء الاول والثاني
الكتب والمراجع التي يوصى بها (المجلات العلمية ،التقارير ،.....)	م .الطيب محمد أحمد الطيب- **نظم المعلومات الجغرافية** من الالف
) المراجع الالكترونية ،مواقع الانترنيت ،.....	GIS4 – مواقع د. جمعه داود على قناته في YouTube

١. خطة تطوير المقرر الدراسي

Republic of Iraq
Ministry of Higher Education & Scientific Research
Supervision and Scientific Evaluation Directorate
Quality Assurance and Academic Accreditation
International Accreditation Dept.

Academic Program Specification Form For The Academic Year 2020/2021

Universitiy:
College :
Number Of Departments In The College :
Date Of Form Completion :

Dean's Name
Date : / /
Signature

Dean's Assistant For Scientific Affairs
Date : / /
Signature

The College Quality Assurance And University Performance Manager Date : / /
Signature

Quality Assurance And University Performance Manager
Date : / /
Signature

TEMPLATE FOR PROGRAMME SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

PROGRAMME SPECIFICATION

This Programme Specification provides a concise summary of the main features of the programme and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It is supported by a specification for each course that contributes to the programme.

1. Teaching Institution	Engineering College
2. University Department/Centre	University of Baghdad/ Department of Surveying
3. Programme Title	Practical Astronomy
4. Title of Final Award	BSc in Surveying Eng. (3rd Stage)
5. Modes of Attendance offered	Annual
6. Accreditation	
7. Other external influences	
8. Date of production/revision of this specification	2020-2021
9. Aims of the Programme The Practical Astronomy course aims to introduce the history of astronomy in engineering measurements, define the motion of heavenly bodies, and time system. The main purpose of this course is how to fix the terrestrial position based on the astronomical observations using different astronomical coordinate systems.	

10. Learning Outcomes, Teaching, Learning and Assessment Methods
A. Cognitive goals A1. The third year students should deliver a complete knowledge and practical experience (office and field skills) of applying the theories of practical astronomies to introduce the terrestrial positions based joining both of the different time system and the motion of the celestial bodies (stars, Moon, Sun, satellites, etc…….) A2. A3. A4. A5. A6.
B. The skills goals special to the programme . B1. B2. B3.
Teaching and Learning Methods
Lectures, tutorials, reports, and field work
Assessment methods
Exams (more than 1 exam for each semester+ several quizzes), technical reports.
C. Affective and value goals C1. C2. C3. C4.
Teaching and Learning Methods
1. Lectures. 2. Tutorials. 3. Homework and Assignments. 4. Tests and Exams.
Assessment methods

Reports.

D. General and Transferable Skills (other skills relevant to employability and personal development) D1. D2. D3. D4.
Teaching and Learning Methods
Assessment Methods

11. Programme Structure				12. Awards and Credits
Level/Year	Course or Module Code	Course or Module Title	Credit rating	
3rd stage/2020-2021		Introduction and definitions -1		Bachelor Degree Requires (x) credits
3rd stage/2020-2021		Introduction and definitions -2		
3rd stage/2020-2021		History of astronomy -1		
3rd stage/2020-2021		History of astronomy -2		
3rd stage/2020-2021		Spherical trigonometry -1		
3rd stage/2020-2021		Spherical trigonometry -2		
3rd stage/2020-2021		Spherical trigonometry -3		
3rd stage/2020-2021		Heavenly bodies		

3rd stage/2020-2021		The earth as a heavenly body -1		
3rd stage/2020-2021		The earth as a heavenly body -2		
3rd stage/2020-2021		Aberration of star light		
3rd stage/2020-2021		Proper motion		
3rd stage/2020-2021		Magnitude and brightness		
3rd stage/2020-2021		Astronomical coordinates		
3rd stage/2020-2021		First semester exam		
3rd stage/2020-2021		Systems of coordinates [Horizon system]		
3rd stage/2020-2021		System of coordinates [Equatorial-hour angle system]		
3rd stage/2020-2021		System of coordinates [Galactic system]		
3rd stage/2020-2021		The astronomical triangle -1		
3rd stage/2020-2021		The astronomical triangle -2		
3rd stage/2020-2021		Solution of the astronomical triangle		
3rd stage/2020-2021		Time Introduction and definitions -1		
3rd stage/2020-2021		Time Introduction and definitions -2		
3rd stage/2020-2021		The time [Sidereal time, Equation of time] -1		
3rd stage/2020-2021		The time [Sidereal time, Equation of time] -2		
3rd stage/2020-2021		The time [The relation between sidereal and solar time] -1		
3rd stage/2020-2021		The time [The relation between sidereal and solar time] -2		
3rd stage/2020-2021		The time [The relation between sidereal and solar time] -3		
3rd stage/2020-2021		The time [equation of time]		
3rd stage/2020-2021		Second semester exam		

13. Personal Development Planning
14. Admission criteria .
15. Key sources of information about the programme
The Practical Astronomer

Curriculum Skills Map																			
please tick in the relevant boxes where individual Programme Learning Outcomes are being assessed																			
				Programme Learning Outcomes															
Year / Level	Course Code	Course Title	Core (C) Title or Option (O**)**	Knowledge and understanding				Subject-specific skills				Thinking Skills				General and Transferable Skills (or) Other skills relevant to employability and personal development			
				A1	**A2**	**A3**	**A4**	**B1**	**B2**	**B3**	**B4**	**C1**	**C2**	**C3**	**C4**	**D1**	**D2**	**D3**	**D4**

TEMPLATE FOR COURSE SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

COURSE SPECIFICATION

This Course Specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the programme specification.

1. Teaching Institution	
2. University Department/Centre	
3. Course title/code	
4. Modes of Attendance offered	
5. Semester/Year	
6. Number of hours tuition (total)	
7. Date of production/revision of this Specification	
8. Aims of the Course	

9· Learning Outcomes, Teaching ,Learning and Assessment Methode

A- Cognitive goals . A1. A2. A3. A4. A5. A6 .
B. The skills goals special to the course. B1. B2. B3.
Teaching and Learning Methods
Assessment methods
C. Affective and value goals C1. C2. C3. C4.
Teaching and Learning Methods
Assessment methods

D. General and rehabilitative transferred skills(other skills relevant to employability and personal development)
D1. D2.
D3.
D4.

10. Course Structure					
Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method

11. Infrastructure	
1. Books Required reading:	
2. Main references (sources)	
A- Recommended books and references (scientific journals, reports…).	
B-Electronic references, Internet sites…	

12. The development of the curriculum plan

Republic of Iraq
Ministry of Higher Education & Scientific Research
Supervision and Scientific Evaluation Directorate
Quality Assurance and Academic Accreditation
International Accreditation Dept.

Academic Program Specification Form For The Academic Year 2020/2021

University: Baghdad University
College : Engineering
Number Of Departments In The College :13 Thirteen Departments
Date Of Form Completion :6/2/2021

Dean's Name
Date : / /
Signature

Dean's Assistant For Scientific Affairs
Date : / /
Signature

The College Quality Assurance And University Performance Manager Date : / /
Signature

Quality Assurance And University Performance Manager
Date : / /
Signature

TEMPLATE FOR PROGRAMME SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

PROGRAMME SPECIFICATION

This Programme Specification provides a concise summary of the main features of the programme and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It is supported by a specification for each course that contributes to the programme.

1. Teaching Institution	Engineering College
2. University Department/Centre	University of Baghdad / department of Surveying
3. Programme Title	Programming 1
4. Title of Final Award	BSc in Surveying Eng. (4^{th} Stage)
5. Modes of Attendance offered	Annual
6. Accreditation	
7. Other external influences	
8. Date of production/revision of this specification	6/2/2021
9. Aims of the Programme	
The course aims to prepare students to be familiar with the details needed in the subsequent stages in many applications in the specialty classes and so it be as sports, in addition to solving many	

10. Learning Outcomes, Teaching, Learning and Assessment Methods

A. The student should deliver a complete knowledge and practical experience of applying programming solution to solve problem.

B. The skills goals special to the programme .
B1. The course provide complete knowledge of basic language. Students will be able to develop logics which will help them to create programs, applications in it. Also by learning the basic programming constructs they can easily switch over to any other language in future.

Teaching and Learning Methods

1. Lectures.
2. Homework and Assignments.
3. Tests and Exams.
4. In-Class Questions and Discussions.

Assessment methods

Exams (more than 1 exam for each semester+ several quizzes), technical reports.

C. Affective and value goals
C1. Programming / coding surveying engineering problem using q basic and visual basic language.

Teaching and Learning Methods

1. Lectures. 2. Tutorials. 3. Homework and Assignments. 4. Tests and Exams.
Assessment methods
Exams (more than 1 exam for each semester+ several quizzes), technical reports.

D. General and Transferable Skills (other skills relevant to employability and personal development)
D1.
D2. D3.
D4.

Teaching and Learning Methods

Assessment Methods

11. Programme Structure				12. Awards and Credits
Level/Year	Course or Module Code	Course or Module Title	Credit rating	
1st /2020-2021		Introduction.		Bachelor Degree Requires (x) credits
1st /2020-2021		Binary system.		
1st /2020-2021		Preparation of algorithm.		
1st /2020-2021		Preparation of flowchart.		
1st /2020-2021		Variables and constants		
1st /2020-2021		The QBasic language statement (REM and print		

1st /2020-2021		Input Instructions (Let and Input)		
1st /2020-2021		Input Instructions (Direct and Read /Data)		
1st /2020-2021		Control Statements (Go / to and If / then)		
1st /2020-2021		Control Statements (If / go to and On / go to)		
1st /2020-2021		Input Matrix		
1st /2020-2021		Problems of two dimensional matrix		
1st /2020-2021		Problems of three dimensional matrix		
1st /2020-2021		Applications		
1st /2020-2021		Applications		
1st /2020-2021		Introduction to Visual Basic		
1st /2020-2021		Common Properties		
1st /2020-2021		Events		
1st /2020-2021		Visual Basic Language (variables, constants		
1st /2020-2021		Visual Basic Language (arrays, controls statements,		
1st /2020-2021		Managing Forms in V. Basic		
1st /2020-2021		Common Controls (label, text box and command		
1st /2020-2021		Common Controls (command button, frame, list		
1st /2020-2021		Check and option box		
1st /2020-2021		،Picture and image box, common dialog		
1st /2020-2021		VB and VBA Library		
1st /2020-2021		Functions and Subroutines		
1st /2020-2021		Menus		
1st /2020-2021		Modulus		

1st /2020-2021		Applications		

13. Personal Development Planning

2- Attending and holding workshops and seminars to see the latest developments in the field of specialization
2- Read the latest research
3- Carrying out projects and scientific research
4- Read the latest Journals within the specialty

14. Admission criteria .

15. Key sources of information about the programme

- CORE TEXTS
- COURSE MATERIALS
- OTHER

TEMPLATE FOR PROGRAMME SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

PROGRAMME SPECIFICATION

This Programme Specification provides a concise summary of the main features of the programme and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It is supported by a specification for each course that contributes to the programme.

1. Teaching Institution	Engineering College
2. University Department/Centre	University of Baghdad / department of Surveying
3. Programme Title	Programming 1
4. Title of Final Award	BSc in Surveying Eng. (4th Stage)
5. Modes of Attendance offered	Annual
6. Accreditation	
7. Other external influences	
8. Date of production/revision of this specification	6/2/2021
9. Aims of the Programme	
The course aims to prepare students to be familiar with the details needed in the subsequent stages in many applications in the specialty classes and so it be as sports, in addition to	

10. Learning Outcomes, Teaching, Learning and Assessment Methods

A. Cognitive goals

A. The student should deliver a complete knowledge and practical experience of applying programming solution to solve problem.

B. The skills goals special to the programme .

B1. The course provide complete knowledge of basic language. Students will be able to develop logics which will help them to create programs, applications in it. Also by learning the basic programming constructs they can easily switch over to any other language in future.

Teaching and Learning Methods

1. Lectures.
2. Tutorials.
3. Homework and Assignments.
4. Tests and Exams.

Assessment methods

Exams (more than 1 exam for each semester+ several quizzes), technical reports.

C. Affective and value goals C1. Programming / coding surveying engineering problem using q basic and visual basic language.
Teaching and Learning Methods
1. Lectures. 2. Tutorials. 3. Homework and Assignments. 4. Tests and Exams.
Assessment methods
Exams (more than 1 exam for each semester+ several quizzes), technical reports.

D. General and Transferable Skills (other skills relevant to employability and personal development) D1. D2. D3. D4.
Teaching and Learning Methods
Assessment Methods
Exams (more than 1 exam for each semester+ several quizzes), technical reports.

11. Programme Structure				12. Awards and Credits
Level/Year	Course or Module Code	Course or Module Title	Credit rating	
1st /2020-2021		Introduction.		Bachelor Degree Requires (x) credits
1st /2020-2021		Binary system.		
1st /2020-2021		Preparation of algorithm.		
1st /2020-2021		Preparation of flowchart.		
1st /2020-2021		Variables and constants		
1st /2020-2021		The QBasic language statement (REM and print		

1st /2020-2021		Input Instructions (Let and Input)		
1st /2020-2021		Input Instructions (Direct and Read /Data)		

13. Personal Development Planning

1-Attending and holding workshops and seminars to see the latest developments in the field of specialization
2- Read the latest research
3- Carrying out projects and scientific research
4- Read the latest Journals within the specialty

14. Admission criteria .

15. Key sources of information about the programme

CORE TEXTS

- COURSE MATERIALS
- OTHER

Curriculum Skills Map

please tick in the relevant boxes where individual Programme Learning Outcomes are being assessed

				Programme Learning Outcomes															
Year / Level	Course Code	Course Title	Core (C) Title or Option (O)	Knowledge and understanding				Subject-specific skills				Thinking Skills				General and Transferable Skills (or) Other skills relevant to			
				A1	**A2**	**A3**	**A4**	**B1**	**B2**	**B3**	**B4**	**C1**	**C2**	**C3**	**C4**	**D1**	**D2**	**D3**	**D4**
1st /2020-2021		Programming1		*	*	*	*	*	*	*	*	*	*	*	*				
		Programming1		*	*	*	*	*	*	*	*	*	*	*	*				

11. Infrastructure

1. Books Required reading:	Basic BASIC: An introduction to computer programming in BASIC language (Hayden computer programming series) Paperback – 1978 by James S Coan
2. Main references (sources)	Computer Programming in the Basic Language Teachers Guide Edition by Neal Golden
A- Recommended books and references (scientific journals, reports…).	Basic BASIC: An introduction to computer programming in BASIC language (Hayden computer programming series) Paperback – January 1, 1978 by James S Coan (Author) 4.6 out of 5 stars 18 ratings
B-Electronic references, Internet sites…	https://www.amazon.com/Basic-BASIC-introduction-computer-programming/dp/0810451069

Republic of Iraq
Ministry of Higher Education & Scientific Research
Supervision and Scientific Evaluation Directorate
Quality Assurance and Academic Accreditation
International Accreditation Dept.

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Dean's Name

Date : / /

Signature

Dean's Assistant For Scientific Affairs

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Signature

The College Quality Assurance And University Performance Manager Date : / /

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Quality Assurance And University Performance Manager
Date : / /

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TEMPLATE FOR PROGRAMME SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

PROGRAMME SPECIFICATION

This Programme Specification provides a concise summary of the main features of the programme and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It is supported by a specification for each course that contributes to the programme.

1. Teaching Institution	Engineering College
2. University Department/Centre	University of Baghdad / department of Surveying
3. Programme Title	Numerical Methods
4. Title of Final Award	BSc in Surveying Eng. (4^{th} Stage)
5. Modes of Attendance offered	Semester
6. Accreditation	
7. Other external influences	
8. Date of production/revision of this specification	6/2/2021
9. Aims of the Programme	
This course will emphasize the development of numerical algorithms to provide solutions to common problems formulated in science and engineering. The primary objective of the course is to	

10. Learning Outcomes, Teaching, Learning and Assessment Methods
B. At the end of the class, the student will be able to use the numerical method to find the approximate solution of different engineering problems.
B. The skills goals special to the programme . B1. The aim is to teach the student various topics in Numerical Analysis such as solutions of nonlinear equations in one variable, interpolation and approximation, numerical differentiation and integration, direct methods for solving linear systems, numerical solution of ordinary differential equations.
Teaching and Learning Methods
1. Lectures. 2. Homework and Assignments. 3. Tests and Exams. 4. In-Class Questions and Discussions.
Assessment methods
Exams (more than 1 exam for each semester+ several quizzes), technical reports.
C. Affective and value goals C1. explain numerical techniques used on surveying applications ; C2. Solve Complex problem that hard solve mathematically ;
Teaching and Learning Methods

1. Lectures. 2. Tutorials. 3. Homework and Assignments. 4. Tests and Exams.
Assessment methods
Exams (more than 1 exam for each semester+ several quizzes), technical reports.

D. General and Transferable Skills (other skills relevant to employability and personal development)
D1.
D2. D3.
D4.

Teaching and Learning Methods

Assessment Methods

11. Programme Structure				12. Awards and Credits
Level/Year	Course or Module Code	Course or Module Title	Credit rating	
4th /2020-2021		Interpolation (Lagrange method)		Bachelor Degree Requires (x) credits
4th /2020-2021		Interpolation (Newton divided difference)		
4th /2020-2021		Root Finding (Bisection method)		
4th /2020-2021		Root Finding (False position method)		
4th /2020-2021		Solution of simultaneous equations (Cramer's rule,		
4th /2020-2021		Solution of ODE / first order/Euler method and		

4th /2020-2021		Solution of ODE / first order/ Taylor method		
4th /2020-2021		Solution of ODE / second order/ Euler method		
4th /2020-2021		Solution of ODE / second order/ Finite difference		
4th /2020-2021		Solution of ODE / second order/ Finite difference		
4th /2020-2021		Solution of PDE by finite difference/first derivative and		
4th /2020-2021		Solution of PDE by finite difference/ combination		
4th /2020-2021		Applications of ODE		
4th /2020-2021		Applications of PDE		
4th /2020-2021		multi applications using finite difference solutions		
4th /2020-2021		Interpolation (Lagrange method)		
4th /2020-2021		Interpolation (Newton divided difference)		
4th /2020-2021		Root Finding (Bisection method)		
4th /2020-2021		Root Finding (False position method)		
4th /2020-2021		Solution of simultaneous equations (Cramer's rule,		
4th /2020-2021		Solution of ODE / first order/Euler method and		
4th /2020-2021		Solution of ODE / first order/ Taylor method		
4th /2020-2021		Solution of ODE / second order/ Euler method		
4th /2020-2021		Solution of ODE / second order/ Finite difference		
4th /2020-2021		Solution of ODE / second order/ Finite difference		
4th /2020-2021		Solution of PDE by finite difference/first derivative and		
4th /2020-2021		Solution of PDE by finite difference/ combination		
4th /2020-2021		Applications of ODE		
4th /2020-2021		Applications of PDE		

4th stage/2020-2021		multi applications using finite difference solutions		

13. Personal Development Planning

3- Attending and holding workshops and seminars to see the latest developments in the field of specialization
2- Read the latest research
3- Carrying out projects and scientific research
4- Read the latest Journals within the specialty

14. Admission criteria .

15. Key sources of information about the programme

- CORE TEXTS
- COURSE MATERIALS
- OTHER

TEMPLATE FOR PROGRAMME SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

PROGRAMME SPECIFICATION

This Programme Specification provides a concise summary of the main features of the programme and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It is supported by a specification for each course that contributes to the programme.

1. Teaching Institution	Engineering College
2. University Department/Centre	University of Baghdad / department of Surveying
3. Programme Title	Numerical methods
4. Title of Final Award	BSc in Surveying Eng. (4^{th} Stage)
5. Modes of Attendance offered	semester
6. Accreditation	
7. Other external influences	
8. Date of production/revision of this specification	6/2/2021
9. Aims of the Programme	
This course will emphasize the development of numerical algorithms to provide solutions to common problems formulated in science and engineering. The primary objective of the	

10. Learning Outcomes, Teaching, Learning and Assessment Methods
A. Cognitive goals A. At the end of the class, the student will be able to use the numerical method to find the approximate solution of different engineering problems.
B. The skills goals special to the programme . B1. The aim is to teach the student various topics in Numerical Analysis such as solutions of nonlinear equations in one variable, interpolation and approximation, numerical differentiation and integration, direct methods for solving linear systems, numerical solution of ordinary differential equations.
Teaching and Learning Methods
1. Lectures. 2. Tutorials. 3. Homework and Assignments. 4. Tests and Exams.
Assessment methods
Exams (more than 1 exam for each semester+ several quizzes), technical reports.

C. Affective and value goals C1. explain space geodesy techniques used on Earth ; C2. define terrestrial and celestial reference systems and passages from one to the other ; C3. Articulate how GNSS satellites enable the positioning of objects relative to local or global reference frames; C4. Justify which GNSS tools and techniques are most appropriate for a particular scientific question; C5. Complete a conceptual diagram of a GNSS system and the related parts; C6. Recognize and articulate how GNSS-assisted research provides a societal benefit.
Teaching and Learning Methods
1. Lectures. 2. Tutorials. 3. Homework and Assignments. 4. Tests and Exams.
Assessment methods
Exams (more than 1 exam for each semester+ several quizzes), technical reports.

D. General and Transferable Skills (other skills relevant to employability and personal development) D1. D2. D3. D4.
Teaching and Learning Methods
Assessment Methods
Exams (more than 1 exam for each semester+ several quizzes), technical reports.

11. Programme Structure				12. Awards and Credits
Level/Year	Course or Module Code	Course or Module Title	Credit rating	
4th stage/2020-2021		Interpolation (Lagrange method)		Bachelor Degree Requires (x) credits
4th /2020-2021		Interpolation (Newton divided difference)		
4th /2020-2021		Root Finding (Bisection method)		
4th /2020-2021		Root Finding (False position method)		
4th /2020-2021		Solution of simultaneous equations (Cramer's rule,		
4th /2020-2021		Solution of ODE / first order/Euler method and		

4^{th} /2020-2021		Solution of ODE / first order/ Taylor method		
4^{th} /2020-2021		Solution of ODE / second order/ Euler method		

13. Personal Development Planning

1-Attending and holding workshops and seminars to see the latest developments in the field of specialization
2- Read the latest research
3- Carrying out projects and scientific research
4- Read the latest Journals within the specialty

14. Admission criteria .

15. Key sources of information about the programme

CORE TEXTS

- COURSE MATERIALS
- OTHER

Curriculum Skills Map

please tick in the relevant boxes where individual Programme Learning Outcomes are being assessed

				Programme Learning Outcomes															
Year / Level	Course Code	Course Title	Core (C) Title or Option (O)	Knowledge and understanding				Subject-specific skills				Thinking Skills				General and Transferable Skills (or) Other skills relevant to			
				A1	**A2**	**A3**	**A4**	**B1**	**B2**	**B3**	**B4**	**C1**	**C2**	**C3**	**C4**	**D1**	**D2**	**D3**	**D4**
4rd stage/2019-2020		Numerical Methods		*	*	*	*	*	*	*	*	*	*	*	*				
		Numerical Methods		*	*	*	*	*	*	*	*	*	*	*	*				

11. Infrastructure

1. Books Required reading:	1. -“Numerical Method for Science and Engineering” by R. W. Hamming, 1987. - 2 “Basic Numerical Method” by R. E. Scraton, 1984.
2. Main references (sources)	1. Using R for Numerical Analysis in Science and Engineering by Victor A. Bloomfield 2. Elementary Numerical Analysis by S. D. Conte, Carl de Boor
A- Recommended books and references (scientific journals, reports…).	Numerical Engineering book
B-Electronic references, Internet sites…	https://onlinelibrary.wiley.com/journal/10982426

Republic of Iraq
Ministry of Higher Education & Scientific Research
Supervision and Scientific Evaluation Directorate
Quality Assurance and Academic Accreditation
International Accreditation Dept.

Academic Program Specification Form For The Academic Year 2020/2021

University: Baghdad University
College : Engineering
Number Of Departments In The College :13 Thirteen Departments
Date Of Form Completion :6/2/2021

Dean's Name

Date : / /

Signature

Dean's Assistant For Scientific Affairs

Date : / /
Signature

The College Quality Assurance And University Performance Manager Date : / /
Signature

Quality Assurance And University Performance Manager
Date : / /
Signature

TEMPLATE FOR PROGRAMME SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

PROGRAMME SPECIFICATION

This Programme Specification provides a concise summary of the main features of the programme and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It is supported by a specification for each course that contributes to the programme.

1. Teaching Institution	Engineering College
2. University Department/Centre	University of Baghdad / department of Surveying
3. Programme Title	Satellite Geodesy_GNSS
4. Title of Final Award	BSc in Surveying Eng. (4^{th} Stage)
5. Modes of Attendance offered	Annual
6. Accreditation	
7. Other external influences	
8. Date of production/revision of this specification	6/2/2021
9. Aims of the Programme	
This course is prepared for undergraduate students. It starts with general introduction about the development of global surveying techniques and this includes different subjects, such as optical	

10. Learning Outcomes, Teaching, Learning and Assessment Methods

C. The fourth year students should deliver a complete knowledge and practical experience of applying the algorithms of space geodesy to introduce geodetic positions and geodetic networks. Furthermore, the students know how to find the optimum procedure for determination of the terrestrial positions in different applications.

D. Lectures, tutorials, and reports regarding to assessment methods.

B. The skills goals special to the programme .
B1. Cognitive: Developing student understanding of GNSS fundamentals and applying these to the design and implementation of a basic GNSS survey.
B2. Behavioral: Train students to set up a basic GNSS base station, selecting the appropriate techniques for a given science question.
B3. Affective: Discuss the application of GNSS at sites with societal impact. Discuss the capability to resolve changes that were previously un measurable.

Teaching and Learning Methods

This module begins with an introductory lecture and discussion on GNSS and a few case studies. The lecture and discussion is supported by a PowerPoint presentation, which introduces the fundamentals of geodesy and GPS/GNSS positioning. The purpose of the lecture is to promote thinking about how and why GPS/GNSS is used
Assessment methods
Exams (more than 1 exam for each semester+ several quizzes), technical reports.
C. Affective and value goals C1. explain space geodesy techniques used on Earth ; C2. define terrestrial and celestial reference systems and passages from one to the other ; C3. Articulate how GNSS satellites enable the positioning of objects relative to local or global reference frames; C4. Justify which GNSS tools and techniques are most appropriate for a particular scientific question; C5. Complete a conceptual diagram of a GNSS system and the related parts; C6. Recognize and articulate how GNSS-assisted research provides a societal benefit.
Teaching and Learning Methods
1. Lectures. 2. Tutorials. 3. Homework and Assignments. 4. Tests and Exams.
Assessment methods
Exams (more than 1 exam for each semester+ several quizzes), technical reports.

D. General and Transferable Skills (other skills relevant to employability and personal development)
D1.
D2. D3.
D4.

Teaching and Learning Methods

Assessment Methods

11. Programme Structure

Level/Year	Course or Module Code	Course or Module Title	Credit rating	12. Awards and Credits
4th /2020-2021		Introduction and definitions		Bachelor Degree Requires (x) credits
4th /2020-2021		GNSS: Theory and Principles		
4th /2020-2021		Development of Global Positioning Techniques		
4th /2020-2021		Global Positioning System Basics		
4th /2020-2021		Space Segment: GPS satellite Constellation		
4th /2020-2021		User Segment		

4th /2020-2021		GPS satellite signals structure:		
4th /2020-2021		Signal Structure: Signal design, Carrier		
4th /2020-2021		Pseudo-Random Noise (PRN) codes and		
4th /2020-2021		Navigation Messages (NAV)		
4th /2020-2021		GPS Satellite Orbit Satellite Orbit Description		
4th /2020-2021		GPS Satellite Orbit Modelling		
4th /2020-2021		The orbital elements: Categories of the orbital		
4th /2020-2021		Reference Systems GNSS Coordinate System		
4th /2020-2021		First semester exam		
4th /2020-2021		Time systems Time systems based on		
4th /2020-2021		International GNSS Service (IGS):		
4th /2020-2021		IGS tracking network The IGS Analysis Center		
4th /2020-2021		Atmospheric effects (Ionospheric and		
4th /2020-2021		Satellite and receiver antenna phase centre		
4th /2020-2021		Multipath effects		
4th /2020-2021		Mathematical models for positioning		
4th /2020-2021		Point Positioning with Carrier Phase		
4th /2020-2021		Static Point Positioning Kinematic Point Positioning		
4th /2020-2021		Differential Positioning Differential Positioning with		
4th /2020-2021		Relative Positioning Basic Concept		
4th /2020-2021		Static Relative Positioning Kinematic relative		
4th /2020-2021		Relative Positioning Single-differences, Double-		
4th /2020-2021		Single Point against Relative Positioning		

4th /2020-2021		Second semester exam		

13. Personal Development Planning

4- Attending and holding workshops and seminars to see the latest developments in the field of specialization
2- Read the latest research
3- Carrying out projects and scientific research
4- Read the latest Journals within the specialty

14. Admission criteria .

15. Key sources of information about the programme

- CORE TEXTS
- COURSE MATERIALS
- OTHER

TEMPLATE FOR PROGRAMME SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

PROGRAMME SPECIFICATION

This Programme Specification provides a concise summary of the main features of the programme and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It is supported by a specification for each course that contributes to the programme.

1. Teaching Institution	Engineering College
2. University Department/Centre	University of Baghdad / department of Surveying
3. Programme Title	Satellite Geodesy_GNSS
4. Title of Final Award	BSc in Surveying Eng. (4th Stage)
5. Modes of Attendance offered	Annual
6. Accreditation	
7. Other external influences	
8. Date of production/revision of this specification	6/2/2021
9. Aims of the Programme	
This course is prepared for undergraduate students. It starts with general introduction about the development of global surveying techniques and this includes different subjects, such as	

10. Learning Outcomes, Teaching, Learning and Assessment Methods

A. Cognitive goals

A1. The fourth year students should deliver a complete knowledge and practical experience of applying the algorithms of space geodesy to introduce geodetic positions and geodetic networks. Furthermore, the students know how to find the optimum procedure for determination of the terrestrial positions in different applications.

A2. Lectures, tutorials, and reports regarding to assessment methods.

B. The skills goals special to the programme .

B. The skills goals special to the programme .

B1. Cognitive: Developing student understanding of GNSS fundamentals and applying these to the design and implementation of a basic GNSS survey.

B2. Behavioral: Train students to set up a basic GNSS base station, selecting the appropriate techniques for a given science question.

B3. Affective: Discuss the application of GNSS at sites with societal impact. Discuss the capability to resolve changes that were previously un measurable.

Teaching and Learning Methods

1. Lectures.
2. Tutorials.
3. Homework and Assignments.
4. Tests and Exams.

Assessment methods

Exams (more than 1 exam for each semester+ several quizzes), technical reports.

C. Affective and value goals C1. explain space geodesy techniques used on Earth ; C2. define terrestrial and celestial reference systems and passages from one to the other ; C3. Articulate how GNSS satellites enable the positioning of objects relative to local or global reference frames; C4. Justify which GNSS tools and techniques are most appropriate for a particular scientific question; C5. Complete a conceptual diagram of a GNSS system and the related parts; C6. Recognize and articulate how GNSS-assisted research provides a societal benefit.
Teaching and Learning Methods
1. Lectures. 2. Tutorials. 3. Homework and Assignments. 4. Tests and Exams.
Assessment methods
Exams (more than 1 exam for each semester+ several quizzes), technical reports.

D. General and Transferable Skills (other skills relevant to employability and personal development) D1. D2. D3. D4.
Teaching and Learning Methods
Assessment Methods
Exams (more than 1 exam for each semester+ several quizzes), technical reports.

11. Programme Structure				12. Awards and Credits
Level/Year	Course or Module Code	Course or Module Title	Credit rating	
4th stage/2020-2021		Introduction and definitions		Bachelor Degree Requires (x) credits
4th stage/2020-2021		GNSS: Theory and Principles		
4th stage/2020-2021		Development of Global Positioning Techniques		
4th stage/2020-2021		Global Positioning System Basics		
4th stage/2020-2021		Space Segment:		
4th stage/2020-2021		User Segment		

4th stage/2020-2021		GPS satellite signals structure:		
4th stage/2020-2021		Signal Structure: Signal design, Carrier		

13. Personal Development Planning

1-Attending and holding workshops and seminars to see the latest developments in the field of specialization
2- Read the latest research
3- Carrying out projects and scientific research
4- Read the latest Journals within the specialty

14. Admission criteria .

15. Key sources of information about the programme

CORE TEXTS
- COURSE MATERIALS
- OTHER

Curriculum Skills Map

please tick in the relevant boxes where individual Programme Learning Outcomes are being assessed

				Programme Learning Outcomes															
Year / Level	Course Code	Course Title	Core (C) Title or Option (O)	Knowledge and understanding				Subject-specific skills				Thinking Skills				General and Transferable Skills (or) Other skills relevant to			
				A1	**A2**	**A3**	**A4**	**B1**	**B2**	**B3**	**B4**	**C1**	**C2**	**C3**	**C4**	**D1**	**D2**	**D3**	**D4**
4rd stage/2020-2021		Satellite Geodesy_GNSS		*	*	*	*	*	*	*	*	*	*	*	*				
		Satellite Geodesy_GNSS		*	*	*	*	*	*	*	*	*	*	*	*				

11. Infrastructure

1. Books Required reading:	GNSS Global Navigation Systems
2. Main references (sources)	GNSS Global Navigation Systems
A- Recommended books and references (scientific journals, reports…).	1. Kaplan, E. D. & Hegarty, C. J. (2006), "Understanding GPS: Principles and Applications", 2nd Edition, ARTECH HOUSE, Boston, London. 2. H. Bernhard, L. Herbert, and W. Elmar (2010) "GNSS – Global Navigation Satellite Systems: GPS
B-Electronic references, Internet sites…	https// GNSS observation methods

Republic of Iraq
Ministry of Higher Education & Scientific Research
Supervision and Scientific Evaluation Directorate
Quality Assurance and Academic Accreditation
International Accreditation Dept.

Academic Program Specification Form For The Academic Year 2020/2021

University: Baghdad University
College : Engineering
Number Of Departments In The College :13 Thirteen Departments
Date Of Form Completion :6/2/2021

Dean's Name

Date : / /

Signature

Dean's Assistant For Scientific Affairs

Date : / /
Signature

The College Quality Assurance And University Performance Manager Date : / /
Signature

Quality Assurance And University Performance Manager
Date : / /
Signature

TEMPLATE FOR PROGRAMME SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

PROGRAMME SPECIFICATION

This program Specification provides a concise summary of the main features of the program and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the program specification.

1. Teaching Institution	Engineering College
2. University Department/Centre	University of Baghdad / department of Surveying
3. Programme Title	Cartography II
4. Title of Final Award	BSc in surveying Eng. (4^{th} stage)
5. Modes of Attendance offered	Annual
6. Accreditation	
7. Other external influences	
8. Date of production/revision of this specification	6/2/2021
9. Aims of the Programme	
Program is designed to training the students on how the earth's surface, anybody and another astronomer representation by coordinates on a plane surface and compute the distortion quotient and direction	

10. Learning Outcomes, Teaching, Learning, and Assessment Methods

A. Cognitive goals

A1. Program graduates will apply communication skills, a lifelong learning attitude, and the knowledge of mathematics and basic science to attain advancement within the surveying profession.

A2. Program graduates will exhibit creativity, leadership and team-building abilities, cultural appreciation, and an understanding of global.

A3. Program graduates will be engaged in the professional practice of surveying engineering with high ethical and professional responsibilities.

A4. The program graduates will strive for professional licensure.

B. The skills goals special to the program.
B1. A broad education and knowledge of contemporary issues necessary to understand the impact of map projection solutions in a global, societal, and environmental context.

B2. An ability to solve the distortion problems in practice by applying fundamental knowledge of mathematics, statistics, science, and by using modern surveying engineering techniques, skills, and tools.

B3. An ability to identify, formulate and solve map projection problems, particularly the planning, design, land use design, boundary determination, mapping, and field layout of infrastructure that meet standards of accuracy and precision, keeping in mind cost, time, safety, and quality needs, and objectives.

B4. An ability to design and conduct experiments and to analyze and interpret data in engineering surveying, topographic surveying, geodetic surveying, and map projection.

B5. An ability to communicate technical material written papers/reports and oral presentations.

B6. An ability to function within multidisciplinary teams.

B7. An understanding of the professional, societal, and ethical practice and responsibilities.

B8. A recognition of the importance of professional licensure and a recognition of the need for, and an ability to engage in, life-long learning.

Teaching and Learning Methods

A-Knowledge and Understanding
1. Locate the position
2. Compute the distance
3. Compute direction
4. Compute distortion
5. Questions and Discussions.
6. Connection between Theory and Application.

Assessment methods
Reports.
C. Affective and value goals C1.an ability to apply knowledge of mathematics, science, and engineering. C2. an ability to design and conduct experiments, as well as to analyze and interpret data. C3. an ability to design a system, component, or process to meet desired needs within realistic constraints. C4. an ability to function on multi-disciplinary teams. C5. an ability to identify, formulate, and solve engineering problems. C6. an understanding of professional and ethical responsibility. C7. an ability to communicate effectively. C8. the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context. C9. a recognition of the need for, and an ability to engage in life-long learning C10. a knowledge of contemporary issues C11. an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.
Teaching and Learning Methods
1. Lectures. 2. Tutorials. 3. Homework and Assignments. 4. Tests and Exams.
Assessment methods
Reports.

D. General and Transferable Skills (other skills relevant to employability and personal development) D1. D2. D3. D4.
Teaching and Learning Methods
Assessment Methods

11. Programme Structure				12. Awards and Credits
Level/Year	Course or Module Code	Course or Module Title	Credit rating	
4th stage/2020-2021		Introduction, Scale.		Bachelor Degree Requires (x) credits
		Latitudes and longitudes, Small and Great Circles		
		Distortion:		
		Classification of Projection and their Properties.		
		Construction and Characteristics of Cylindrical Projections.		
		Orthomorphic Mercator's Projection.		
		Conformal Transverse Mercator's Proj.		
		Normal Secant Cylindrical Projections.		
		Exam		
		Conical Projections:(Normal and Tangential).		
		The Conical Projection With Tow Standard Parallels.		
		Conical Equal Area (Bonne's Proj.).		
		The Polyconic Projection.		
		Exam		

		Zenithal Projections.		
		Gnomonic Projections(Polar and Equatorial).		

13. Personal Development Planning

5- Attending and holding workshops and seminars to see the latest developments in the field of specialization
2- Read the latest research
3- Carrying out projects and scientific research
4- Read the latest Journals within the specialty

14. Admission criteria.

15. Key sources of information about the programme

Map projection.

TEMPLATE FOR PROGRAMME SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

PROGRAMME SPECIFICATION

This program Specification provides a concise summary of the main features of the program and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the program specification.

1. Teaching Institution	Engineering College
2. University Department/Centre	University of Baghdad / department of Surveying
3. Programme Title	Cadastral Surveying
4. Title of Final Award	BSc in surveying Eng. (3rd stage)
5. Modes of Attendance offered	Annual
6. Accreditation	
7. Other external influences	
8. Date of production/revision of this specification	6/2/2021
9. Aims of the Programme	
Training the student to represent the coordinates of the points on the ground and the relationships between the points and to find the unknown coordinates of multiple aspects, and then divide the lands	

10. Learning Outcomes, Teaching, Learning, and Assessment Methods

A. Cognitive goals

A1. Program graduates will apply communication skills, a lifelong learning attitude, and the knowledge of mathematics and basic science to attain advancement within the surveying profession.

A2. Program graduates will exhibit creativity, leadership and team-building abilities, cultural appreciation, and an understanding of global.

A3. Program graduates will be engaged in the professional practice of surveying engineering with high ethical and professional responsibilities.

A4. The program graduates will strive for professional licensure.

B. The skills goals special to the program.

B1. A broad education and knowledge of contemporary issues necessary to understand the impact of surveying engineering solutions in a global, societal, and environmental context.

B2. An ability to solve surveying engineering problems in practice by applying fundamental knowledge of mathematics, statistics, science, and by using modern surveying engineering techniques, skills, and tools.

B3. An ability to identify, formulate and solve surveying engineering problems, particularly the planning, design, establishing horizontal and vertical control, land use design, boundary determination, mapping, and field layout of infrastructure that meet standards of accuracy and precision, keeping in mind cost, time, safety and quality needs, and objectives.

B4. An ability to communicate technical material written papers/reports and oral presentations.

B5. An ability to function within multidisciplinary teams.

B6. An understanding of the professional, societal, and ethical practice and responsibilities.

B7. A recognition of the importance of professional licensure and a recognition of the need for, and an ability to engage in, life-long learning.

Teaching and Learning Methods

1. Lectures.
2. Tutorials.
3. Homework and Assignments.
4. Tests and Exams.

Assessment methods

Reports.

C. Affective and value goals

C1.an ability to apply knowledge of mathematics, science, and engineering
C2. an ability to design and conduct experiments, as well as to analyze and interpret data
C3. an ability to design a system, component, or process to meet desired needs within realistic constraints .
C4. an ability to function on multi-disciplinary teams
C5. an ability to identify, formulate, and solve engineering problems
C6. an understanding of professional and ethical responsibility
C7. an ability to communicate effectively
C8. the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context
C9. a recognition of the need for, and an ability to engage in life-long learning
C10. a knowedge of contemporary issues
C11. an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

Teaching and Learning Methods

1. Lectures.
2. Tutorials.
3. Homework and Assignments.
4. Tests and Exams.

Assessment methods

Reports.

D. General and Transferable Skills (other skills relevant to employability and personal development) D1. D2. D3. D4.
Teaching and Learning Methods
Assessment Methods

11. Programme Structure				12. Awards and Credits
Level/Year	Course or Module Code	Course or Module Title	Credit rating	
3rd stage/2020-2021		Introduction, basics, and historical overview		Bachelor Degree Requires (x) credits
		Low effort method for modifying the Travers and its application		
		Add angles and directions		
		Forward computation		
		Inverse computation		
		The intersection of straight lines		
		The intersection of a straight line with the circle		
		Intersection of curves		
		Applications of different intersections		
		Calculate missing elements in locked travers		
		Missing element apps		
		Area calculations by various methods		
		Land division		

		Land segmentation applications		
		Specification for designing divisions in the city		
		Calculation of pre-designed housing units		
		Calculation of housing units on non-windowed streets		
		Designing residential divisions in the city		
		Cadastral divisions of the vast lands and projects		
		Development of divisions to the unified cadastral system		
		Engineering project		

13. Personal Development Planning

1-Attending and holding workshops and seminars to see the latest developments in the field of specialization
2- Read the latest research
3- Carrying out projects and scientific research
4- Read the latest Journals within the specialty

14. Admission criteria.

15. Key sources of information about the programme

Intersection , cadstro , area, coordinate.

TEMPLATE FOR PROGRAMME SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

PROGRAMME SPECIFICATION

This program Specification provides a concise summary of the main features of the program and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the program specification.

1. Teaching Institution	Engineering College
2. University Department/Centre	University of Baghdad / department of Surveying
3. Programme Title	Descriptive geometry
4. Title of Final Award	BSc in surveying Eng. (2nd stage)
5. Modes of Attendance offered	Semester 1
6. Accreditation	
7. Other external influences	
8. Date of production/revision of this specification	6/2/2021
9. Aims of the Programme	
Training the student's mind on the imaginary perception of objects and their representation on the ground	

10. Learning Outcomes, Teaching, Learning, and Assessment Methods

A. Cognitive goals

A1. Program graduates will apply communication skills, a lifelong learning attitude, and the knowledge of mathematics and basic science to attain advancement within the surveying profession.

A2. Program graduates will exhibit creativity, leadership and team-building abilities, cultural appreciation, and an understanding of global.

A3. Program graduates will be engaged in the professional practice of surveying engineering with high ethical and professional responsibilities.

A4. The program graduates will strive for professional licensure.

B. The skills goals special to the program.

B1. A broad education and knowledge of contemporary issues necessary to understand the impact of engineering bodies solutions in a global, societal, and environmental context.

B2. An ability to solve surveying engineering problems in practice by applying fundamental knowledge of mathematics, statistics, science, and by using modern surveying engineering techniques, skills, and tools.

B3. An ability to identify, formulate and solve surveying engineering problems, particularly the planning, design, establishing horizontal and vertical control, land use design, boundary determination, mapping, and field layout of infrastructure that meet standards of accuracy and precision, keeping in mind cost, time, safety and quality needs, and objectives.

B4. An ability to communicate technical material written papers/reports and oral presentations.

B5. An ability to function within multidisciplinary teams.

B6. An understanding of the professional, societal, and ethical practice and responsibilities.

B7. A recognition of the importance of professional licensure and a recognition of the need for, and an ability to engage in, life-long learning.

Teaching and Learning Methods

1. Lectures.
2. Tutorials.
3. Homework and Assignments.
4. Tests and Exams.

Assessment methods

Reports.

C. Affective and value goals

C1.an ability to apply knowledge of mathematics, science, and engineering
C2. an ability to design and conduct experiments, as well as to analyze and interpret data
C3. an ability to design a system, component, or process to meet desired needs within realistic constraints.
C4. an ability to function on multi-disciplinary teams
C5. an ability to identify, formulate, and solve engineering problems
C6. an understanding of professional and ethical responsibility
C7. an ability to communicate effectively
C8. the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context
C9. a recognition of the need for, and an ability to engage in life-long learning
C10. a knowedge of contemporary issues
C11. an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

Teaching and Learning Methods

1. Lectures.
2. Tutorials.
3. Homework and Assignments.
4. Tests and Exams.

Assessment methods

Reports.

D. General and Transferable Skills (other skills relevant to employability and personal development)
D1.
D2.
D3.
D4.

Teaching and Learning Methods

Assessment Methods

11. Programme Structure				12. Awards and Credits
Level/Year	Course or Module Code	Course or Module Title	Credit rating	
2nd stage/2020-2021		General introduction - basic definitions in descriptive geometry and related topics, levels and axes of projection.		Bachelor Degree Requires (x) credits
		Projection types: central, oblique, vertical, digital, stereoscopic		
		Representation of a point with positive and negative coordinates		
		Representation of the straight line with its different directions		
		Representing the plane with its projections and its effects		
		Exam		
		Secondary auxiliary levels		
		Geometric lines, planes, and surfaces - some objects and crystals		
		A general study of geometric objects, , finding the shape of the resulting sectors, finding straight points of intersection for them and calculating their volumes and surface areas		

		The cube, rectangular prism, and parallelepiped		
		Opening the geometric figure		
		Exam		

13. Personal Development Planning

1-Attending and holding workshops and seminars to see the latest developments in the field of specialization
2- Read the latest research
3- Carrying out projects and scientific research
4- Read the latest Journals within the specialty

14. Admission criteria.

15. Key sources of information about the programme

Projection , side and top view, auxiliary, plane

TEMPLATE FOR PROGRAMME SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

PROGRAMME SPECIFICATION

This program Specification provides a concise summary of the main features of the program and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the program specification.

1. Teaching Institution	Engineering College
2. University Department/Centre	University of Baghdad / department of Surveying
3. Programme Title	Spherical Triangles
4. Title of Final Award	BSc in surveying Eng. (2^{nd} stage)
5. Modes of Attendance offered	Semester 2
6. Accreditation	
7. Other external influences	
8. Date of production/revision of this specification	6/2/2021
9. Aims of the Programme	

Training the student's mind on the imaginary perception of objects and their representation on the ground

10. Learning Outcomes, Teaching, Learning, and Assessment Methods

A. Cognitive goals

A1. Program graduates will apply communication skills, a lifelong learning attitude, and the knowledge of mathematics and basic science to attain advancement within the surveying profession.

A2. Program graduates will exhibit creativity, leadership and team-building abilities, cultural appreciation, and an understanding of global.

A3. Program graduates will be engaged in the professional practice of surveying engineering with high ethical and professional responsibilities.

A4. The program graduates will strive for professional licensure.

B. The skills goals special to the program.

B1. A broad education and knowledge of contemporary issues necessary to understand the impact of engineering bodies solutions in a global, societal, and environmental context.

B2. An ability to solve surveying engineering problems in practice by applying fundamental knowledge of mathematics, statistics, science, and by using modern surveying engineering techniques, skills, and tools.

B3. An ability to identify, formulate and solve surveying engineering problems, particularly the planning, design, establishing horizontal and vertical control, land use design, boundary determination, mapping, and field layout of infrastructure that meet standards of accuracy and precision, keeping in mind cost, time, safety and quality needs, and objectives.

B4. An ability to communicate technical material written papers/reports and oral presentations.

B5. An ability to function within multidisciplinary teams.

B6. An understanding of the professional, societal, and ethical practice and responsibilities.

B7. A recognition of the importance of professional licensure and a recognition of the need for, and an ability to engage in, life-long learning.

Teaching and Learning Methods

1. Lectures.
2. Tutorials.
3. Homework and Assignments.
4. Tests and Exams.

Assessment methods

Reports.

C. Affective and value goals

C1.an ability to apply knowledge of mathematics, science, and engineering
C2. an ability to design and conduct experiments, as well as to analyze and interpret data
C3. an ability to design a system, component, or process to meet desired needs within realistic constraints.
C4. an ability to function on multi-disciplinary teams
C5. an ability to identify, formulate, and solve engineering problems
C6. an understanding of professional and ethical responsibility
C7. an ability to communicate effectively
C8. the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context
C9. a recognition of the need for, and an ability to engage in life-long learning
C10. a knowedge of contemporary issues
C11. an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

Teaching and Learning Methods

1. Lectures.
2. Tutorials.
3. Homework and Assignments.
4. Tests and Exams.

Assessment methods

Reports.

D. General and Transferable Skills (other skills relevant to employability and personal development) D1. D2. D3. D4.
Teaching and Learning Methods
Assessment Methods

11. Programme Structure				12. Awards and Credits
Level/Year	Course or Module Code	Course or Module Title	Credit rating	
2nd stage/2020-2021		Introduction to spherical Trigonometry, definitions		Bachelor Degree Requires (x) credits
		Spherical Excess, derived laws		
		Spherical Triangles and great circles		
		Trigonometric laws for solving Spherical Triangles		
		Right angled angle and Napier's rule		
		Earth as a sphere, parallels and		
		Compute the distances along parallels and meridians.		
		Area of sector bounded by two parallels and two meridians.		
		Inclined angles, horizontal and vertical angles		
		Exam		
		Convergence of meridians		
		Coordinate systems: Geographic, Cartesian, and polar		
		Coordinate systems: rectangular and cartographic systems, transformations		
		Forward and Inverse Computations on spherical triangles		
		Intersection on sphere		

		Rotation of coordinates		
		Exam		

13. Personal Development Planning

1-Attending and holding workshops and seminars to see the latest developments in the field of specialization
2- Read the latest research
3- Carrying out projects and scientific research
4- Read the latest Journals within the specialty

14. Admission criteria.

15. Key sources of information about the programme

Sphere , Triangle, loxodrome, latitude, longitude.

Curriculum Skills Map																			
please tick in the relevant boxes where individual Programme Learning Outcomes are being assessed																			
				Programme Learning Outcomes															
Year / Level	Course Code	Course Title	Core (C) Title or Option (O)	Knowledge and understanding				Subject-specific skills				Thinking Skills				General and Transferable Skills (or) Other skills relevant to employability and personal development			
				A1	**A2**	**A3**	**A4**	**B1**	**B2**	**B3**	**B4**	**C1**	**C2**	**C3**	**C4**	**D1**	**D2**	**D3**	**D4**
4Th 2021		Cartography II		*	*	*	*	*	*	*	*	*	*	*	*				
3rd 2021		Cadastral survey		*	*	*	*	*	*	*	*	*	*	*	*				
2nd 2021		Spherical Triangles		*	*	*	*	*	*	*	*	*	*	*	*				
		Descriptive geometry		*	*	*	*	*	*	*	*	*	*	*	*				

Republic of Iraq
Ministry of Higher Education & Scientific Research
Supervision and Scientific Evaluation Directorate
Quality Assurance and Academic Accreditation
International Accreditation Dept.

Academic Program Specification Form For The Academic

University: Baghdad University
College : Engineering
Number Of Departments In The College :13 Thirteen Departments
Date Of Form Completion :6/2/2021

Dean's Name
Date : / /
Signature

Dean's Assistant For Scientific Affairs
Date : / /
Signature

The College Quality Assurance And University Performance Manager Date : / /
Signature

Quality Assurance And University Performance Manager
Date : / /
Signature

TEMPLATE FOR PROGRAMME SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

PROGRAMME SPECIFICATION

This Programme Specification provides a concise summary of the main features of the programme and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It is supported by a specification for each course that contributes to the programme.

1. Teaching Institution	Engineering College
2. University Department/Centre	University of Baghdad / department of Surveying
3. Programme Title	Engineering Surveying
4. Title of Final Award	BSc in surveying Eng.(3rd stage)
5. Modes of Attendance offered	Annual
6. Accreditation	
7. Other external influences	
8. Date of production/revision of this specification	6/2/2021
9. Aims of the Programme	
The course aims to introduce the Engineering Surveying applications and to give student a practical turning to manage a survey project.	

10. Learning Outcomes, Teaching, Learning and Assessment Methods

A. Cognitive goals

A1. Program graduates will apply communication skills, lifelong learning attitude, and the knowledge of mathematics and basic science to attain advancement within the surveying profession.

A2. Program graduates will exhibit creativity, leadership and team-building abilities, cultural appreciation and an understanding of global.

A3. Program graduates will be engaged in the professional practice of surveying engineering with high ethical and professional responsibilities.

A4. The program graduates will strive for professional licensure.

B. The skills goals special to the programme .

B1. A broad education and knowledge of contemporary issues necessary to understand the impact of surveying engineering solutions in a global, societal, and environmental context.

B2. An ability to solve surveying engineering problems in practice by applying fundamental knowledge of mathematics, statistics, science, and by using modern surveying engineering techniques, skills, and tools.

B3. An ability to identify, formulate, and solve surveying engineering problems, particularly the planning, design, establishing horizontal and vertical control, land use design, boundary determination, mapping and field layout of infrastructure that meet standards of accuracy and precision, keeping in mind cost, time, safety and quality needs, and objectives.

B4. An ability to design and conduct experiments and to analyze and interpret data in engineering surveying, topographic surveying, geodetic surveying, and boundary surveying.

B5. An ability to communicate technical material written papers/reports and oral presentations.

B6. An ability to function within multidisciplinary teams.

B7. An understanding of professional, societal, and ethical practice and responsibilities.

B8. A recognition of the importance of professional licensure and a recognition of the need for, and an ability to engage in, life-long learning.

Teaching and Learning Methods

1. Lectures. 2. Tutorials. 3. Homework and Assignments. 4. Tests and Exams.
Assessment methods
Reports.
C. Affective and value goals C1.an ability to apply knowledge of mathematics, science, and engineering C2. an ability to design and conduct experiments, as well as to analyze and interpret data C3. an ability to design a system, component, or process to meet desired needs within realistic constraints . C4. an ability to function on multi-disciplinary teams C5. an ability to identify, formulate, and solve engineering problems C6. an understanding of professional and ethical responsibility C7. an ability to communicate effectively C8. the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context C9. a recognition of the need for, and an ability to engage in life-long learning C10. a knowedge of contemporary issues C11. an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.
Teaching and Learning Methods
1. Lectures. 2. Tutorials. 3. Homework and Assignments. 4. Tests and Exams.
Assessment methods
Reports.

D. General and Transferable Skills (other skills relevant to employability and personal development) D1. D2. D3. D4.
Teaching and Learning Methods
Assessment Methods

11. Programme Structure				12. Awards and Credits
Level/Year	Course or Module Code	Course or Module Title	Credit rating	
3rd stage/2020-2021		Introduction		Bachelor Degree Requires (x) credits
3rd stage/2020-2021		Leveling (method of leveling)		
3rd stage/2020-2021		Applications of leveling(profile& cross section)		
3rd stage/2020-2021		Tachometry		
3rd stage/2020-2021		Leveling with tachometry procedure & compute		
3rd stage/2020-2021		Measure & compute area in field		

3rd stage/2020-2021		Measure & compute area from map		
3rd stage/2020-2021		Compute area of cross sections		
3rd stage/2020-2021		Compute volumes of uniform figures		
3rd stage/2020-2021		Compute volumes of cut & fill		
3rd stage/2020-2021		Method of corrections		
3rd stage/2020-2021		Volume of borrow bit		
3rd stage/2020-2021		Doing grid of leveling		
3rd stage/2020-2021		----------		
3rd stage/2020-2021		exam		
3rd stage/2020-2021		Vertical curves		
3rd stage/2020-2021		Compute level of points on vertical curves		
3rd stage/2020-2021		Function of vertical curves		
3rd stage/2020-2021		Unsymmetrical vertical curves		
3rd stage/2020-2021		Horizontal curves		
3rd stage/2020-2021		Types of horizontal curves		
3rd stage/2020-2021		Methods of setting- out a simple circular curves		
3rd stage/2020-2021		Tangential angles method….etc.		
3rd stage/2020-2021		Compute coordinates of the curves		
3rd stage/2020-2021		Reveres circular curves		
3rd stage/2020-2021		Compound circular curves		
3rd stage/2020-2021		Spiral curves		
3rd stage/2020-2021		Clothoid curve		
3rd stage/2020-2021		----------		

3rd stage/2020-2021		Exam		

13. Personal Development Planning

6- Attending and holding workshops and seminars to see the latest developments in the field of specialization
2- Read the latest research
3- Carrying out projects and scientific research
4- Read the latest Journals within the specialty

14. Admission criteria .

15. Key sources of information about the programme

Engineering and Cadastral surveying

TEMPLATE FOR PROGRAMME SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

PROGRAMME SPECIFICATION

This Programme Specification provides a concise summary of the main features of the programme and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It is supported by a specification for each course that contributes to the programme.

1. Teaching Institution	Engineering College
2. University Department/Centre	University of Baghdad / department of Surveying
3. Programme Title	Photogrammetry II
4. Title of Final Award	BSc in surveying Eng.(3rd stage)
5. Modes of Attendance offered	Annual
6. Accreditation	
7. Other external influences	
8. Date of production/revision of this specification	6/2/2021
9. Aims of the Programme	
The course aims to introduce the Engineering Surveying applications and to give student a practical turning to manage a survey project.	

10. Learning Outcomes, Teaching, Learning and Assessment Methods

A. Cognitive goals

A1. Program graduates will apply communication skills, lifelong learning attitude, and the knowledge of mathematics and basic science to attain advancement within the surveying profession.

A2. Program graduates will exhibit creativity, leadership and team-building abilities, cultural appreciation and an understanding of global.

A3. Program graduates will be engaged in the professional practice of surveying engineering with high ethical and professional responsibilities.

A4. The program graduates will strive for professional licensure.

B. The skills goals special to the programme .

B1. A broad education and knowledge of contemporary issues necessary to understand the impact of surveying engineering solutions in a global, societal, and environmental context.

B2. An ability to solve surveying engineering problems in practice by applying fundamental knowledge of mathematics, statistics, science, and by using modern surveying engineering techniques, skills, and tools.

B3. An ability to identify, formulate, and solve surveying engineering problems, particularly the planning, design, establishing horizontal and vertical control, land use design, boundary determination, mapping and field layout of infrastructure that meet standards of accuracy and precision, keeping in mind cost, time, safety and quality needs, and objectives.

B4. An ability to communicate technical material written papers/reports and oral presentations.

B5. An ability to function within multidisciplinary teams.

B6. An understanding of professional, societal, and ethical practice and responsibilities.

B7. A recognition of the importance of professional licensure and a recognition of the need for, and an ability to engage in, life-long learning.

Teaching and Learning Methods

1. Lectures.
2. Tutorials.
3. Homework and Assignments.
4. Tests and Exams.

Assessment methods

Reports.

C. Affective and value goals

C1.an ability to apply knowledge of mathematics, science, and engineering
C2. an ability to design and conduct experiments, as well as to analyze and interpret data
C3. an ability to design a system, component, or process to meet desired needs within realistic constraints .
C4. an ability to function on multi-disciplinary teams
C5. an ability to identify, formulate, and solve engineering problems
C6. an understanding of professional and ethical responsibility
C7. an ability to communicate effectively
C8. the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context
C9. a recognition of the need for, and an ability to engage in life-long learning
C10. a knowedge of contemporary issues
C11. an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

Teaching and Learning Methods

1. Lectures.
2. Tutorials.
3. Homework and Assignments.
4. Tests and Exams.

Assessment methods

Reports.

D. General and Transferable Skills (other skills relevant to employability and personal development) D1. D2. D3. D4.
Teaching and Learning Methods
Assessment Methods

11. Programme Structure				12. Awards and Credits
Level/Year	Course or Module Code	Course or Module Title	Credit rating	
3rd stage/2019-2020		INTRODUCTION & OVERVIEW: Photo geometry and fundamental of photogrammetric		Bachelor Degree Requires (x) credits
3rd stage/2019-2020		STEREOSCOPIC VIEWING: Depth conception,		
3rd stage/2019-2020		STEREOSCOPIC PLOTTING INSTRUMENTS (analouge and		
3rd stage/2019-2020		Coordinate transformation		
3rd stage/2019-2020		PHOTO RESECTION AND INTERSECTION [analytical] –		
3rd stage/2019-2020		PLANIMETRIC MAPPING: Rectification, Georeferencing,		

3rd stage/2019-2020		GEOMETRY OF AERIAL STEREO-PAIR: Analytical		
3rd stage/2019-2020		AEROTRIANGULATION: Aerotriangulation and block adjustment		

13. Personal Development Planning

1-Attending and holding workshops and seminars to see the latest developments in the field of specialization
2- Read the latest research
3- Carrying out projects and scientific research
4- Read the latest Journals within the specialty

14. Admission criteria .

15. Key sources of information about the programme

المسح التصويري التحليلي
Elements of Photogrammetry

Curriculum Skills Map																			
please tick in the relevant boxes where individual Programme Learning Outcomes are being assessed																			
				Programme Learning Outcomes															
Year / Level	Course Code	Course Title	Core (C) Title or Option (O)	Knowledge and understanding				Subject-specific skills				Thinking Skills				General and Transferable Skills (or) Other skills relevant to employability and personal development			
				A1	**A2**	**A3**	**A4**	**B1**	**B2**	**B3**	**B4**	**C1**	**C2**	**C3**	**C4**	**D1**	**D2**	**D3**	**D4**
3rd stage/2019-2020		Engineering Surveying		*	*	*	*	*	*	*	*	*	*	*	*				
		Photogrammetry II		*	*	*	*	*	*	*	*	*	*	*	*				

Ministry of Higher Education & Scientific Research
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TEMPLATE FOR PROGRAMME SPECIFICATION

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1. Teaching Institution	Engineering College
2. University Department/Centre	University of Baghdad / department of Surveying
3. Programme Title	Engineering Surveying
4. Title of Final Award	BSc in surveying Eng.(3rd stage)
5. Modes of Attendance offered	Annual
6. Accreditation	
7. Other external influences	
8. Date of production/revision of this specification	6/2/2021
9. Aims of the Programme	
The course aims to introduce the Engineering Surveying applications and to give student a practical turning to manage a survey project.	

10. Learning Outcomes, Teaching, Learning and Assessment Methods

A. Cognitive goals

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B7. An understanding of professional, societal, and ethical practice and responsibilities.

B8. A recognition of the importance of professional licensure and a recognition of the need for, and an ability to engage in, life-long learning.

Teaching and Learning Methods

1. Lectures. 2. Tutorials. 3. Homework and Assignments. 4. Tests and Exams.
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1. Lectures. 2. Tutorials. 3. Homework and Assignments. 4. Tests and Exams.
Assessment methods
Reports.

D. General and Transferable Skills (other skills relevant to employability and personal development) D1. D2. D3. D4.
Teaching and Learning Methods
Assessment Methods

11. Programme Structure				12. Awards and Credits
Level/Year	Course or Module Code	Course or Module Title	Credit rating	
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3rd stage/2020-2021		Leveling (method of leveling)		
3rd stage/2020-2021		Applications of leveling(profile& cross section)		
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3rd stage/2020-2021		----------		
3rd stage/2020-2021		exam		
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3rd stage/2020-2021		Types of horizontal curves		
3rd stage/2020-2021		Methods of setting- out a simple circular curves		
3rd stage/2020-2021		Tangential angles method….etc.		
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3rd stage/2020-2021		Spiral curves		
3rd stage/2020-2021		Clothoid curve		
3rd stage/2020-2021		----------		

3rd stage/2020-2021		Exam		

13. Personal Development Planning

7- Attending and holding workshops and seminars to see the latest developments in the field of specialization
2- Read the latest research
3- Carrying out projects and scientific research
4- Read the latest Journals within the specialty

14. Admission criteria .

15. Key sources of information about the programme

Engineering and Cadastral surveying

TEMPLATE FOR PROGRAMME SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

PROGRAMME SPECIFICATION

This Programme Specification provides a concise summary of the main features of the programme and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It is supported by a specification for each course that contributes to the programme.

1. Teaching Institution	Engineering College
2. University Department/Centre	University of Baghdad / department of Surveying
3. Programme Title	Photogrammetry II
4. Title of Final Award	BSc in surveying Eng.(3rd stage)
5. Modes of Attendance offered	Annual
6. Accreditation	
7. Other external influences	
8. Date of production/revision of this specification	6/2/2021
9. Aims of the Programme	
The course aims to introduce the Engineering Surveying applications and to give student a practical turning to manage a survey project.	

10. Learning Outcomes, Teaching, Learning and Assessment Methods

A. Cognitive goals

A1. Program graduates will apply communication skills, lifelong learning attitude, and the knowledge of mathematics and basic science to attain advancement within the surveying profession.

A2. Program graduates will exhibit creativity, leadership and team-building abilities, cultural appreciation and an understanding of global.

A3. Program graduates will be engaged in the professional practice of surveying engineering with high ethical and professional responsibilities.

A4. The program graduates will strive for professional licensure.

B. The skills goals special to the programme .

B1. A broad education and knowledge of contemporary issues necessary to understand the impact of surveying engineering solutions in a global, societal, and environmental context.

B2. An ability to solve surveying engineering problems in practice by applying fundamental knowledge of mathematics, statistics, science, and by using modern surveying engineering techniques, skills, and tools.

B3. An ability to identify, formulate, and solve surveying engineering problems, particularly the planning, design, establishing horizontal and vertical control, land use design, boundary determination, mapping and field layout of infrastructure that meet standards of accuracy and precision, keeping in mind cost, time, safety and quality needs, and objectives.

B4. An ability to communicate technical material written papers/reports and oral presentations.

B5. An ability to function within multidisciplinary teams.

B6. An understanding of professional, societal, and ethical practice and responsibilities.

B7. A recognition of the importance of professional licensure and a recognition of the need for, and an ability to engage in, life-long learning.

Teaching and Learning Methods

1. Lectures. 2. Tutorials. 3. Homework and Assignments. 4. Tests and Exams.
Assessment methods
Reports.
C. Affective and value goals C1.an ability to apply knowledge of mathematics, science, and engineering C2. an ability to design and conduct experiments, as well as to analyze and interpret data C3. an ability to design a system, component, or process to meet desired needs within realistic constraints . C4. an ability to function on multi-disciplinary teams C5. an ability to identify, formulate, and solve engineering problems C6. an understanding of professional and ethical responsibility C7. an ability to communicate effectively C8. the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context C9. a recognition of the need for, and an ability to engage in life-long learning C10. a knowedge of contemporary issues C11. an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.
Teaching and Learning Methods
1. Lectures. 2. Tutorials. 3. Homework and Assignments. 4. Tests and Exams.
Assessment methods
Reports.

D. General and Transferable Skills (other skills relevant to employability and personal development)
D1.
D2.
D3.
D4.

Teaching and Learning Methods

Assessment Methods

11. Programme Structure

12. Awards and Credits

Level/Year	Course or Module Code	Course or Module Title	Credit rating
3rd stage/2020-2021		INTRODUCTION & OVERVIEW: Photo geometry and fundamental of photogrammetric	
3rd stage/2020-2021		STEREOSCOPIC VIEWING: Depth conception,	
3rd stage/2020-2021		STEREOSCOPIC PLOTTING INSTRUMENTS (analouge and	
3rd stage/2020-2021		Coordinate transformation	
3rd stage/2020-2021		PHOTO RESECTION AND INTERSECTION [analytical] –	
3rd stage/2020-2021		PLANIMETRIC MAPPING: Rectification, Georeferencing,	

Bachelor Degree Requires (x) credits

3rd stage/2020-2021		GEOMETRY OF AERIAL STEREO-PAIR: Analytical		
3rd stage/2020-2021		AEROTRIANGULATION: Aerotriangulation and block adjustment		

13. Personal Development Planning

1-Attending and holding workshops and seminars to see the latest developments in the field of specialization
2- Read the latest research
3- Carrying out projects and scientific research
4- Read the latest Journals within the specialty

14. Admission criteria .

15. Key sources of information about the programme

المسح التصويري التحليلي
Elements of Photogrammetry

Curriculum Skills Map																			
please tick in the relevant boxes where individual Programme Learning Outcomes are being assessed																			
				Programme Learning Outcomes															
Year / Level	Course Code	Course Title	Core (C) Title or Option (O)	Knowledge and understanding				Subject-specific skills				Thinking Skills				General and Transferable Skills (or) Other skills relevant to employability and personal development			
				A1	**A2**	**A3**	**A4**	**B1**	**B2**	**B3**	**B4**	**C1**	**C2**	**C3**	**C4**	**D1**	**D2**	**D3**	**D4**
3rd stage/2020-2021		Engineering Surveying		*	*	*	*	*	*	*	*	*	*	*	*				
		Photogrammetry II		*	*	*	*	*	*	*	*	*	*	*	*				

Republic of Iraq
Ministry of Higher Education & Scientific Research
Supervision and Scientific Evaluation Directorate
Quality Assurance and Academic Accreditation
InternationalAccreditation Dept.

Academic Program Specification FormFor The Academic Year 2020-2021

versitiy: Baghdad
ege : Engineering
nber Of Departments In The College : 12 Twelve
e Of Form Completion : May– 3 0/ 2020

's Name
: / 5 / 2020
ture

Dean's Assistant For Scientific Affairs
Date : / / 2020
Signature

The College Quality Assurance And University Performance Manager
Date : / / 2020
Signature

Assurance And University Performance Manager
/ / 2020
re

TEMPLATE FOR COURSE SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

COURSE SPECIFICATION

This Course Specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the programme specification.

1. Teaching Institution	University of Baghdad Engineering College
2. University Department/Centre	Department of Surveying Eng.
3. Course title/code& Description	Mechanical Eng.
4. Programme(s) to which it Contributes	BSc in Surveying Eng.(1st Stage)
5. Modes of Attendance offered	Annual System ; There is only one mode of delivery, which is a "Day Program". The students are full time students, and on campus. They attend full day program in face-to-face mode. The academic year is composed of 30-week regular subjects.

	Each graduating student has to successfully There is *no* on-line subject which may be used as supplementary material for the class room instruction.
6. Semester/Year	2020-2021
7. Number of hours tuition (total)	120 hrs. /4 hrs. per week
8. Date of production/revision of this specification	May– 30 / 2021
9. Aims of the Course	
1.Introduce basic definitions and introductory concepts of Mechanical Eng.	

10·Learning Outcomes
11.Teaching and Learning Methods
1. Lectures. 2. Tutorials. 3. Homework and Assignments. 4. Tests and Exams. 5. In-Class Questions and Discussions.
12. Assessment Methods 1. Examinations, Tests, and Quizzes. 2. Extracurricular Activities. 3. Student Engagement during Lectures.
13. Grading Policy 1. Quizzes: - There will be a (20 – 25) closed books and notes quizzes during the academic

year.

The quizzes will count 20% of the total course grade

14. Course Structure

Week					
1			Introduction to vector algebra		
٢			Forces:- types, force resolution , force composition		
٣			Moment of aforce ,couples		
٤			Resultant of forces , coplaner systems		
٥			Varginons principle , Resultant of non- coplaner systems		
٦			Monthly exam1 , equilibrium , free body diagram		
٧			Varginons principle , Resultant of non- coplaner systems		
٨			Reactions of simple structures		
٩			Monthly exam1 , equilibrium , free body diagram		
١٠			free body diagrams, reactions		
١١			Reactions of simple structures		
١٢			Monthly exam1 , equilibrium , free body diagram		
١٣			free body diagrams, reactions		
١٤			Reactions of simple structures		
١٥			Reactions of compound structures		
١٦			Monthly exam2 ,trusses		
١٧			Method of joint , pullies		
١٨			Method of section		
١٩			عطلة نصف السنة		
٢٠			عطلة نصف السنة		
٢١			Friction, static condition		
٢٢			Monthly exam3 ,solved problems		
٢٣			Centroid ,method of integration ,method of summation		
٢٤			Moment of inertia by integration and summation		
٢٥			Monthly exam5 , solved problems		
٢٦			Section modulus , radius of gyration , solved problems .		
٢٧			Monthly exam6 , solved problems		
٢٨			Monthly exam4 ,summary of static cases		
٢٩			Motion of particales, recti-linear motion		
٣٠			Analytical and graphical solutions		

15. Infrastructure	
Required reading: · CORE TEXTS · COURSE MATERIALS · OTHER	
Special requirements (include for example workshops, periodicals, IT software, websites)	
Community-based facilities (include for example, guest Lectures , internship, field studies)	
16. Admissions	
Pre-requisites	
Minimum number of students	20
Maximum number of students	50
17. Course Instructors	**Ass.Prof. Alaa Dawood Salman** Surveying. Engr. Dept. College of Engineering University of Baghdad Tel: +00964-78013850825 Email: almurshedi.alaa@gmail.com.com

Republic of Iraq
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Academic Program Specification Form For The Academic

University: Baghdad University
College : Engineering
Number Of Departments In The College :13 Thirteen Departments
Date Of Form Completion :6/2/2021

Dean's Name
Date : / /
Signature

Dean's Assistant For Scientific Affairs
Date : / /
Signature

The College Quality Assurance And University Performance Manager Date : / /
Signature

Quality Assurance And University Performance Manager
Date : / /
Signature

TEMPLATE FOR PROGRAMME SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

PROGRAMME SPECIFICATION

This program Specification provides a concise summary of the main features of the program and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the program specification.

1. Teaching Institution	Engineering College
2. University Department/Centre	University of Baghdad / department of Surveying
3. Programme Title	Cartography II
4. Title of Final Award	BSc in surveying Eng. (4^{th} stage)
5. Modes of Attendance offered	Annual
6. Accreditation	
7. Other external influences	
8. Date of production/revision of this specification	6/2/2021
9. Aims of the Programme	
Program is designed to training the students on how the earth's surface, anybody and another astronomer representation by coordinates on a plane surface and compute the distortion quotient and direction	

10. Learning Outcomes, Teaching, Learning, and Assessment Methods

A. Cognitive goals

A1. Program graduates will apply communication skills, a lifelong learning attitude, and the knowledge of mathematics and basic science to attain advancement within the surveying profession.

A2. Program graduates will exhibit creativity, leadership and team-building abilities, cultural appreciation, and an understanding of global.

A3. Program graduates will be engaged in the professional practice of surveying engineering with high ethical and professional responsibilities.

A4. The program graduates will strive for professional licensure.

B. The skills goals special to the program.
B1. A broad education and knowledge of contemporary issues necessary to understand the impact of map projection solutions in a global, societal, and environmental context.

B2. An ability to solve the distortion problems in practice by applying fundamental knowledge of mathematics, statistics, science, and by using modern surveying engineering techniques, skills, and tools.

B3. An ability to identify, formulate and solve map projection problems, particularly the planning, design, land use design, boundary determination, mapping, and field layout of infrastructure that meet standards of accuracy and precision, keeping in mind cost, time, safety, and quality needs, and objectives.

B4. An ability to design and conduct experiments and to analyze and interpret data in engineering surveying, topographic surveying, geodetic surveying, and map projection.

B5. An ability to communicate technical material written papers/reports and oral presentations.

B6. An ability to function within multidisciplinary teams.

B7. An understanding of the professional, societal, and ethical practice and responsibilities.

B8. A recognition of the importance of professional licensure and a recognition of the need for, and an ability to engage in, life-long learning.

Teaching and Learning Methods

A-Knowledge and Understanding
1. Locate the position
2. Compute the distance
3. Compute direction
4. Compute distortion
5. Questions and Discussions.
6. Connection between Theory and Application.

Assessment methods
Reports.
C. Affective and value goals C1.an ability to apply knowledge of mathematics, science, and engineering. C2. an ability to design and conduct experiments, as well as to analyze and interpret data. C3. an ability to design a system, component, or process to meet desired needs within realistic constraints. C4. an ability to function on multi-disciplinary teams. C5. an ability to identify, formulate, and solve engineering problems. C6. an understanding of professional and ethical responsibility. C7. an ability to communicate effectively. C8. the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context. C9. a recognition of the need for, and an ability to engage in life-long learning C10. a knowledge of contemporary issues C11. an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.
Teaching and Learning Methods
1. Lectures. 2. Tutorials. 3. Homework and Assignments. 4. Tests and Exams.
Assessment methods
Reports.

D. General and Transferable Skills (other skills relevant to employability and personal development) D1. D2. D3. D4.
Teaching and Learning Methods
Assessment Methods

11. Programme Structure				12. Awards and Credits
Level/Year	Course or Module Code	Course or Module Title	Credit rating	
4th stage/2020-2021		Introduction, Scale.		Bachelor Degree Requires (x) credits
		Latitudes and longitudes, Small and Great Circles		
		Distortion:		
		Classification of Projection and their Properties.		
		Construction and Characteristics of Cylindrical Projections.		
		Orthomorphic Mercator's Projection.		
		Conformal Transverse Mercator's Proj.		
		Normal Secant Cylindrical Projections.		
		exam		
		Conical Projections:(Normal and Tangential).		
		The Conical Projection With Tow Standard Parallels.		
		Conical Equal Area (Bonne's Proj.).		
		The Polyconic Projection.		
		Exam		

		Zenithal Projections.		
		Gnomonic Projections(Polar and Equatorial).		

13. Personal Development Planning

8- Attending and holding workshops and seminars to see the latest developments in the field of specialization
2- Read the latest research
3- Carrying out projects and scientific research
4- Read the latest Journals within the specialty

14. Admission criteria.

15. Key sources of information about the programme

Map projection.

TEMPLATE FOR PROGRAMME SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

PROGRAMME SPECIFICATION

This program Specification provides a concise summary of the main features of the program and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the program specification.

1. Teaching Institution	Engineering College
2. University Department/Centre	University of Baghdad / department of Surveying
3. Programme Title	Cadastral Surveying
4. Title of Final Award	BSc in surveying Eng. (3rd stage)
5. Modes of Attendance offered	Annual
6. Accreditation	
7. Other external influences	
8. Date of production/revision of this specification	6/2/2021
9. Aims of the Programme	
Training the student to represent the coordinates of the points on the ground and the relationships between the points and to find the unknown coordinates of multiple aspects, and then divide the lands	

10. Learning Outcomes, Teaching, Learning, and Assessment Methods

A. Cognitive goals

A1. Program graduates will apply communication skills, a lifelong learning attitude, and the knowledge of mathematics and basic science to attain advancement within the surveying profession.

A2. Program graduates will exhibit creativity, leadership and team-building abilities, cultural appreciation, and an understanding of global.

A3. Program graduates will be engaged in the professional practice of surveying engineering with high ethical and professional responsibilities.

A4. The program graduates will strive for professional licensure.

B. The skills goals special to the program.

B1. A broad education and knowledge of contemporary issues necessary to understand the impact of surveying engineering solutions in a global, societal, and environmental context.

B2. An ability to solve surveying engineering problems in practice by applying fundamental knowledge of mathematics, statistics, science, and by using modern surveying engineering techniques, skills, and tools.

B3. An ability to identify, formulate and solve surveying engineering problems, particularly the planning, design, establishing horizontal and vertical control, land use design, boundary determination, mapping, and field layout of infrastructure that meet standards of accuracy and precision, keeping in mind cost, time, safety and quality needs, and objectives.

B4. An ability to communicate technical material written papers/reports and oral presentations.

B5. An ability to function within multidisciplinary teams.

B6. An understanding of the professional, societal, and ethical practice and responsibilities.

B7. A recognition of the importance of professional licensure and a recognition of the need for, and an ability to engage in, life-long learning.

Teaching and Learning Methods

1. Lectures. 2. Tutorials. 3. Homework and Assignments. 4. Tests and Exams.
Assessment methods
Reports.
C. Affective and value goals C1.an ability to apply knowledge of mathematics, science, and engineering C2. an ability to design and conduct experiments, as well as to analyze and interpret data C3. an ability to design a system, component, or process to meet desired needs within realistic constraints . C4. an ability to function on multi-disciplinary teams C5. an ability to identify, formulate, and solve engineering problems C6. an understanding of professional and ethical responsibility C7. an ability to communicate effectively C8. the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context C9. a recognition of the need for, and an ability to engage in life-long learning C10. a knowedge of contemporary issues C11. an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.
Teaching and Learning Methods
1. Lectures. 2. Tutorials. 3. Homework and Assignments. 4. Tests and Exams.
Assessment methods
Reports.

D. General and Transferable Skills (other skills relevant to employability and personal development) D1. D2. D3. D4.
Teaching and Learning Methods
Assessment Methods

11. Programme Structure				12. Awards and Credits
Level/Year	Course or Module Code	Course or Module Title	Credit rating	
3rd stage/2020-2021		Introduction, basics, and historical overview		Bachelor Degree Requires (x) credits
		Low effort method for modifying the Travers and its application		
		Add angles and directions		
		Forward computation		
		Inverse computation		
		The intersection of straight lines		
		The intersection of a straight line with the circle		
		Intersection of curves		
		Applications of different intersections		
		Calculate missing elements in locked travers		
		Missing element apps		
		Area calculations by various methods		
		Land division		

		Land segmentation applications		
		Specification for designing divisions in the city		
		Calculation of pre-designed housing units		
		Calculation of housing units on non-windowed streets		
		Designing residential divisions in the city		
		Cadastral divisions of the vast lands and projects		
		Development of divisions to the unified cadastral system		
		Engineering project		

13. Personal Development Planning

1-Attending and holding workshops and seminars to see the latest developments in the field of specialization
2- Read the latest research
3- Carrying out projects and scientific research
4- Read the latest Journals within the specialty

14. Admission criteria.

15. Key sources of information about the programme

Intersection , cadstro , area, coordinate.

TEMPLATE FOR PROGRAMME SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

PROGRAMME SPECIFICATION

This program Specification provides a concise summary of the main features of the program and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the program specification.

1. Teaching Institution	Engineering College
2. University Department/Centre	University of Baghdad / department of Surveying
3. Programme Title	Descriptive geometry
4. Title of Final Award	BSc in surveying Eng. (2nd stage)
5. Modes of Attendance offered	Semester 1
6. Accreditation	
7. Other external influences	
8. Date of production/revision of this specification	6/2/2021
9. Aims of the Programme	
Training the student's mind on the imaginary perception of objects and their representation on the ground	

10. Learning Outcomes, Teaching, Learning, and Assessment Methods

A. Cognitive goals

A1. Program graduates will apply communication skills, a lifelong learning attitude, and the knowledge of mathematics and basic science to attain advancement within the surveying profession.

A2. Program graduates will exhibit creativity, leadership and team-building abilities, cultural appreciation, and an understanding of global.

A3. Program graduates will be engaged in the professional practice of surveying engineering with high ethical and professional responsibilities.

A4. The program graduates will strive for professional licensure.

B. The skills goals special to the program.

B1. A broad education and knowledge of contemporary issues necessary to understand the impact of engineering bodies solutions in a global, societal, and environmental context.

B2. An ability to solve surveying engineering problems in practice by applying fundamental knowledge of mathematics, statistics, science, and by using modern surveying engineering techniques, skills, and tools.

B3. An ability to identify, formulate and solve surveying engineering problems, particularly the planning, design, establishing horizontal and vertical control, land use design, boundary determination, mapping, and field layout of infrastructure that meet standards of accuracy and precision, keeping in mind cost, time, safety and quality needs, and objectives.

B4. An ability to communicate technical material written papers/reports and oral presentations.

B5. An ability to function within multidisciplinary teams.

B6. An understanding of the professional, societal, and ethical practice and responsibilities.

B7. A recognition of the importance of professional licensure and a recognition of the need for, and an ability to engage in, life-long learning.

Teaching and Learning Methods

1. Lectures. 2. Tutorials. 3. Homework and Assignments. 4. Tests and Exams.
Assessment methods
Reports.
C. Affective and value goals C1.an ability to apply knowledge of mathematics, science, and engineering C2. an ability to design and conduct experiments, as well as to analyze and interpret data C3. an ability to design a system, component, or process to meet desired needs within realistic constraints. C4. an ability to function on multi-disciplinary teams C5. an ability to identify, formulate, and solve engineering problems C6. an understanding of professional and ethical responsibility C7. an ability to communicate effectively C8. the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context C9. a recognition of the need for, and an ability to engage in life-long learning C10. a knowedge of contemporary issues C11. an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.
Teaching and Learning Methods
1. Lectures. 2. Tutorials. 3. Homework and Assignments. 4. Tests and Exams.
Assessment methods
Reports.

D. General and Transferable Skills (other skills relevant to employability and personal development) D1. D2. D3. D4.
Teaching and Learning Methods
Assessment Methods

11. Programme Structure				12. Awards and Credits
Level/Year	Course or Module Code	Course or Module Title	Credit rating	
2nd stage/2020-2021		General introduction - basic definitions in descriptive geometry and related topics, levels and axes of projection.		Bachelor Degree Requires (x) credits
		Projection types: central, oblique, vertical, digital, stereoscopic		
		Representation of a point with positive and negative coordinates		
		Representation of the straight line with its different directions		
		Representing the plane with its projections and its effects		
		exam		
		Secondary auxiliary levels		
		Geometric lines, planes, and surfaces - some objects and crystals		
		A general study of geometric objects, , finding the shape of the resulting sectors, finding straight points of intersection for them and calculating their volumes and surface areas		

		The cube, rectangular prism, and parallelepiped		
		Opening the geometric figure		
		Exam		

13. Personal Development Planning

1-Attending and holding workshops and seminars to see the latest developments in the field of specialization
2- Read the latest research
3- Carrying out projects and scientific research
4- Read the latest Journals within the specialty

14. Admission criteria.

15. Key sources of information about the programme

Projection , side and top view, auxiliary, plane

TEMPLATE FOR PROGRAMME SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

PROGRAMME SPECIFICATION

This program Specification provides a concise summary of the main features of the program and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the program specification.

1. Teaching Institution	Engineering College
2. University Department/Centre	University of Baghdad / department of Surveying
3. Programme Title	Spherical Triangles
4. Title of Final Award	BSc in surveying Eng. (2^{nd} stage)
5. Modes of Attendance offered	Semester 2
6. Accreditation	
7. Other external influences	
8. Date of production/revision of this specification	6/2/2021
9. Aims of the Programme	

Training the student's mind on the imaginary perception of objects and their representation on the ground

10. Learning Outcomes, Teaching, Learning, and Assessment Methods

A. Cognitive goals

A1. Program graduates will apply communication skills, a lifelong learning attitude, and the knowledge of mathematics and basic science to attain advancement within the surveying profession.

A2. Program graduates will exhibit creativity, leadership and team-building abilities, cultural appreciation, and an understanding of global.

A3. Program graduates will be engaged in the professional practice of surveying engineering with high ethical and professional responsibilities.

A4. The program graduates will strive for professional licensure.

B. The skills goals special to the program.

B1. A broad education and knowledge of contemporary issues necessary to understand the impact of engineering bodies solutions in a global, societal, and environmental context.

B2. An ability to solve surveying engineering problems in practice by applying fundamental knowledge of mathematics, statistics, science, and by using modern surveying engineering techniques, skills, and tools.

B3. An ability to identify, formulate and solve surveying engineering problems, particularly the planning, design, establishing horizontal and vertical control, land use design, boundary determination, mapping, and field layout of infrastructure that meet standards of accuracy and precision, keeping in mind cost, time, safety and quality needs, and objectives.

B4. An ability to communicate technical material written papers/reports and oral presentations.

B5. An ability to function within multidisciplinary teams.

B6. An understanding of the professional, societal, and ethical practice and responsibilities.

B7. A recognition of the importance of professional licensure and a recognition of the need for, and an ability to engage in, life-long learning.

Teaching and Learning Methods

1. Lectures. 2. Tutorials. 3. Homework and Assignments. 4. Tests and Exams.
Assessment methods
Reports.
C. Affective and value goals C1.an ability to apply knowledge of mathematics, science, and engineering C2. an ability to design and conduct experiments, as well as to analyze and interpret data C3. an ability to design a system, component, or process to meet desired needs within realistic constraints. C4. an ability to function on multi-disciplinary teams C5. an ability to identify, formulate, and solve engineering problems C6. an understanding of professional and ethical responsibility C7. an ability to communicate effectively C8. the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context C9. a recognition of the need for, and an ability to engage in life-long learning C10. a knowedge of contemporary issues C11. an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.
Teaching and Learning Methods
1. Lectures. 2. Tutorials. 3. Homework and Assignments. 4. Tests and Exams.
Assessment methods
Reports.

D. General and Transferable Skills (other skills relevant to employability and personal development) D1. D2. D3. D4.
Teaching and Learning Methods
Assessment Methods

11. Programme Structure				12. Awards and Credits
Level/Year	Course or Module Code	Course or Module Title	Credit rating	
2nd stage/2020-2021		Introduction to spherical Trigonometry, definitions		Bachelor Degree Requires (x) credits
		Spherical Excess, derived laws		
		Spherical Triangles and great circles		
		Trigonometric laws for solving Spherical Triangles		
		Right angled angle and Napier's rule		
		Earth as a sphere, parallels and		
		Compute the distances along parallels and meridians.		
		Area of sector bounded by two parallels and two meridians.		
		Inclined angles, horizontal and vertical angles		
		Exam		
		Convergence of meridians		
		Coordinate systems: Geographic, Cartesian, and polar		
		Coordinate systems: rectangular and cartographic systems, transformations		
		Forward and Inverse Computations on spherical triangles		
		Intersection on sphere		

		Rotation of coordinates		
		Exam		

13. Personal Development Planning

1-Attending and holding workshops and seminars to see the latest developments in the field of specialization
2- Read the latest research
3- Carrying out projects and scientific research
4- Read the latest Journals within the specialty

14. Admission criteria.

15. Key sources of information about the programme

Sphere , Triangle, loxodrome, latitude, longitude.

Curriculum Skills Map

please tick in the relevant boxes where individual Programme Learning Outcomes are being assessed

				Programme Learning Outcomes															
Year / Level	Course Code	Course Title	Core (C) Title or Option (O)	Knowledge and understanding				Subject-specific skills				Thinking Skills				General and Transferable Skills (or) Other skills relevant to employability and personal development			
				A1	**A2**	**A3**	**A4**	**B1**	**B2**	**B3**	**B4**	**C1**	**C2**	**C3**	**C4**	**D1**	**D2**	**D3**	**D4**
4Th 2021		Cartography II		*	*	*	*	*	*	*	*	*	*	*	*				
3rd 2021		Cadastral survey		*	*	*	*	*	*	*	*	*	*	*	*				
2nd 2021		Spherical Triangles		*	*	*	*	*	*	*	*	*	*	*	*				
		Descriptive geometry		*	*	*	*	*	*	*	*	*	*	*	*				

وزارة التعليم العالي والبحث العلمي
جـــهاز الإشـــراف والتقـويم العلـمي
دائرة ضمان الجودة والاعتماد الأكاديمي

استمارة وصف البرنامج الأكاديمي للكليات والمعاهد

للعام الدراسي ٢٠٢٠-٢٠٢١

الجامعة : بغداد
الكلية /المعهد : كلية الهندسة
القسم العلمي : قسم هندسة المساحة
تاريخ ملء الملف : 2021/2/2

التوقيع :	**التوقيع :**
اسم رئيس القسم :	**اسم المعاون العلمي :**
التاريخ :	**التاريخ :**

دقق الملف من قبل
شعبة ضمان الجودة والأداء الجامعي
اسم مدير شعبة ضمان الجودة والأداء الجامعي:
التاريخ / /

التوقيع

مصادقة السيد العميد

وصف البرنامج الأكاديمي

يوفر وصف البرنامج الأكاديمي هذا ايجازاً مقتضياً لأهم خصائص البرنامج ومخرجات التعلم المتوقعة من الطالب تحقيقها مبرهناً عما إذا كان قد حقق الاستفادة القصوى من الفرص المتاحة . ويصاحبه وصف لكل مقرر ضمن البرنامج

١٥. المؤسسة التعليمية	جامعة بغداد
١٦. القسم العلمي / المركز	كلية الهندسة قسم هندسة المساحة
١٧. اسم البرنامج الأكاديمي او المهني	المساحة II
١٨. اسم الشهادة النهائية	بكالوريوس
١٩. النظام الدراسي : سنوي /مقررات/اخرى	سنوي
٢٠. برنامج الاعتماد المعتمد	
٢١. المؤثرات الخارجية الأخرى	
٢٢. تاريخ إعداد الوصف	2021/2/2
٢٣. أهداف البرنامج الأكاديمي	
يمكن للخريجين ان يمارسون العمل في المجال الهندسي من خلال عمليات المسح الحقلي و التحقق من الارصادات	
ان علم المساحة و نظرية الاخطاء من العلوم الاساسية في اختصاص هندسة المساحة ، اي مشروع هندسي يجب ان يمتلك دقة معلومة و ثقة في القياسات لذلك يهدف هذا المقرر الى توضيح هذه المواضيع بصورة مفصلة.	

٢٤. مخرجات البرنامج المطلوبة وطرائق التعليم والتعلم والتقييم
٢٥. بنية البرنامج

المرحلة الدراسية	رمز المقرر أو المساق	اسم المقرر أو المساق	الساعات المعتمدة	
			نظري	عملي
المرحلة الثانية		المساحة II	٦٠ نظري + ٩٠ عملي	

٢٦. التخطيط للتطور الشخصي
الدورات ورش العمل اعداد برامج المشاركة في المؤتمرات التواصل مع بقية الجامعات نشر البحوث
٢٧. معيار القبول (وضع الأنظمة المتعلقة بالالتحاق بالكلية أو المعهد)
الحصول على شهادة الاعدادية الاوائل من خريجي معاهد المساحة
٢٨. أهم مصادر المعلومات عن البرنامج

الكتب المنهجية الخاصة بالمادة

المصادر الخارجية

الكتب و المصادر الالكترونية

مخطط مهارات المنهج																					
يرجى وضع اشارة في المربعات المقابلة لمخرجات التعلم الفردية من البرنامج الخاضعة للتقييم																					
				مخرجات التعلم المطلوبة من البرنامج																	
السنة / المستوى	رمز المقرر	اسم المقرر	أساسي أم اختياري	الاهداف المعرفية				الاهداف المهاراتية الخاصة بالبرنامج				الاهداف الوجدانية والقيمية				المهارات العامة والتأهيلية المنقولة (المهارات الأخرى المتعلقة بقابلية التوظيف والتطور الشخصي)					
				أ١	أ٢	أ٣	أ٤	ب١	ب٢	ب٣	ب٤	ج١	ج٢	ج٣	ج٤	د١	د٢	د٣	د٤		
الثانية		المساحة II	اساسي																		

نموذج وصف المقرر

وصف المقرر

يوفر وصف المقرر هذا إيجازاً مقتضياً لأهم خصائص المقرر ومخرجات التعلم المتوقعة من الطالب تحقيقها مبرهناً عما إذا كان قد حقق الاستفادة القصوى من فرص التعلم المتاحة. ولابد من الربط بينها وبين وصف البرنامج.

١٣. المؤسسة التعليمية	جامعة بغداد
١٤. القسم العلمي / المركز	كلية الهندسة- قسم هندسة المساحة
١٥. اسم / رمز المقرر	
١٦. أشكال الحضور المتاحة	الإلكتروني و تواجد فعلي في العملي
١٧. الفصل / السنة	سنوي
١٨. عدد الساعات الدراسية (الكلي)	٦٠ ساعة نظري و ٩٠ عملي
١٩. تاريخ إعداد هذا الوصف	2021/2/2
٢٠. أهداف المقرر	
يمكن للخريجين ان يمارسون العمل في المجال الهندسي من خلال عمليات المسح الحقلي و التحقق من الارصادات	
ان علم المساحة و نظرية الاخطاء من العلوم الاساسية في اختصاص هندسة المساحة ، اي مشروع هندسي يجب ان يمتلك دقة معلومة و ثقة في القياسات لذلك يهدف هذا المقرر الى توضيح هذه المواضيع بصورة مفصلة.	

٢١. مخرجات المقرر وطرائق التعليم والتعلم والتقييم

أ- الاهداف المعرفية

تدريب الطالب على المسح الارضي من خلال عمليات رفع النقاط او تسقيط النقاط على الارض من خلال حساب الاحداثيات الحقيقية للأبنية و الطرق والجسور وغيرها من العوارض تمثيل حقيقي و حساب العلاقات بين النقاط وايجاد الاحداثيات المجهولة بطرق متعددة وتصميم الشبكات الجيوديسية بدقة عالية .

طرائق التقييم

عن الطريق الواجبات اليومية
الامتحانات اليومية
الامتحانات الفصلية
تقديم التقارير
الحضور

طرائق التعليم والتعلم

المحاضرات pdf&ppt
المحاضرات الفديوية
التقارير
التطبيقات العملية

طرائق التقييم

عن الطريق الواجبات اليومية
الامتحانات اليومية
الامتحانات الفصلية
تقديم التقارير
الحضور

د - المهارات العامة والتأهيلية المنقولة (المهارات الأخرى المتعلقة بقابلية التوظيف والتطور الشخصي).

د١- الدورات التأهيلية
د٢-الندوات
د٣-ورش العمل
د٤- التواصل مع بقية الجامعات

٢٢. بنية المقرر					
الأسبوع	الساعات	مخرجات التعلم المطلوبة	اسم الوحدة / أو الموضوع	طريقة التعليم	طريقة التقييم
١	٢		مقدمة عن المسح المتقدم (القياسات الدقيقة و الاجهزة)	Ppt &pdf+ video	حضور ومشاركة cw
٢	٢		المعلومات الاساسية عن المسح المتقدم وادارة وتنظيم الاعمال	Ppt &pdf+ video	حضور ومشاركة cw
٣	٢		شبكات التثليث والغرض من التثليث	Ppt &pdf+ video	حضور ومشاركة cw
٤	٢		الكشف عن الاخطاء باستخدام الاحصاء	Ppt &pdf+ video	حضور ومشاركة cw
٥	٢		درجات التثليث	Ppt &pdf+ video	حضور ومشاركة cw
٦	٢		الاشكال الهندسية المستخدمة في التثليث	Ppt &pdf+ video	حضور ومشاركة cw
٧	٢		حساب قوة الاشكال	Ppt &pdf+ video	حضور ومشاركة cw
٨	٢		التثبيت نقاط السيطرة واستخدام الابراج	Ppt &pdf+ video	حضور ومشاركة cw
٩	٢		المقترح الاولي في بناء الشبكات	Ppt &pdf+ video	حضور ومشاركة cw
١٠	٢		تحديد خط القاعدة	Ppt &pdf+ video	حضور ومشاركة cw
١١	٢		تصحيح خط القاعدة	Ppt &pdf+ video	حضور ومشاركة cw
١٢	٢		القياس الدقيق للزوايا	Ppt &pdf+ video	حضور ومشاركة cw
١٣	٢		التصحيح الزوايا بطريقة	Ppt &pdf+	حضور

		السيتات		video	ومشاركة cw
١٤	٢	القياس بطريقة شرايبر			
١٥	٢	التصحيح بطريقة شرايبر		Ppt &pdf+ video	حضور ومشاركة cw
١٦	٢	امتحان الفصل الاول		Ppt &pdf+ video	حضور ومشاركة cw
١٧	٢	عطلة نصف السنة		Ppt &pdf+ video	حضور ومشاركة cw
١٨	٢	طريقة الخروج عن المركز		Ppt &pdf+ video	حضور ومشاركة cw
19	٢	التقاطع الامامي بالزوايا		Ppt &pdf+ video	حضور ومشاركة cw
20	٢	التقاطع الخلفي بالزوايا		Ppt &pdf+ video	حضور ومشاركة cw
21	٢	تصحيح مواقع النقاط المقاسة		Ppt &pdf+ video	حضور ومشاركة cw
22	٢	تصحيح الشكل الرباعي المتقاطع الاقطار		Ppt &pdf+ video	حضور ومشاركة cw
23	٢	تصحيح الشكل ذو النقطة المركزية		Ppt &pdf+ video	حضور ومشاركة cw
24	٢	مقدمة عن الجايروثيودولايت		Ppt &pdf+ video	حضور ومشاركة cw
25	٢	طريقة القياس بالجايروثيودولايت			
26	٢	شبكات التثليث البعدي		Ppt &pdf+ video	حضور ومشاركة cw
27	٢	استخدامات الاجهزة الاكترونية		Ppt &pdf+ video	حضور ومشاركة cw

28	٢		موازنة الشبكات وطرق التثليث	Ppt &pdf+ video	حضور ومشاركة cw
29	٢		امتحان الفصل الثاني	Ppt &pdf+ video	حضور ومشاركة cw
30	٢		التقاطع بالطوال وتصحيح المواقع	Ppt &pdf+ video	حضور ومشاركة cw

٢٣. البنية التحتية	
٣- الكتب المقررة المطلوبة	كتاب المساحة الهندسية و المساحة المستوية Engineering surveying
٤- المراجع الرئيسية (المصادر)	Adjustment computations Plane surveying Surveying .7th Practical least square Observation and least square
ت) الكتب والمراجع التي يوصى بها (المجلات العلمية ،التقارير ،.....)	Practical least square
ث) المراجع الالكترونية ،مواقع الانترنيت ،.....	Project surveying Observation and least square

٢٤. خطة تطوير المقرر الدراسي
اضافة بعض البرمجيات الحديثة الى المقرر تطوير الجانب العملي من خلال استخدام الاجهزة الحديثة

وزارة التعليم العالي والبحث العلمي
جـــهاز الإشـــراف والتقـويم العلـمي
دائرة ضمان الجودة والاعتماد الأكاديمي

استمارة وصف البرنامج الأكاديمي للكليات والمعاهد

للعام الدراسي ٢٠٢٠-٢٠٢١

الجامعة : بغداد

الكلية /المعهد : كلية الهندسة

القسم العلمي : قسم هندسة المساحة

تاريخ ملء الملف : 2021/2/2

التوقيع :	**التوقيع :**
اسم رئيس القسم :	**اسم المعاون العلمي :**
التاريخ :	**التاريخ :**

دقق الملف من قبل

شعبة ضمان الجودة والأداء الجامعي

اسم مدير شعبة ضمان الجودة والأداء الجامعي:

التاريخ / /

التوقيع

مصادقة السيد العميد

وصف البرنامج الأكاديمي

يوفر وصف البرنامج الأكاديمي هذا ايجازاً مقتضياً لأهم خصائص البرنامج ومخرجات التعلم المتوقعة من الطالب تحقيقها مبرهناً عما إذا كان قد حقق الاستفادة القصوى من الفرص المتاحة . ويصاحبه وصف لكل مقرر ضمن البرنامج

٢٩. المؤسسة التعليمية	جامعة بغداد
٣٠. القسم العلمي / المركز	كلية الهندسة قسم هندسة المساحة
٣١. اسم البرنامج الأكاديمي او المهني	تصحيح القياسات
٣٢. اسم الشهادة النهائية	بكالوريوس
٣٣. النظام الدراسي : سنوي /مقررات/اخرى	سنوي
٣٤. برنامج الاعتماد المعتمد	
٣٥. المؤثرات الخارجية الأخرى	
٣٦. تاريخ إعداد الوصف	2021/2/2
٣٧. أهداف البرنامج الأكاديمي	
يمكن للخريجين ان يمارسون العمل في المجال الهندسي من خلال عمليات تصحيح القياسات الحقلية و التحقق من الارصادات	
ان علم تصحيح القياسات و نظرية الاخطاء من العلوم الاساسية في اختصاص هندسة المساحة ، اي مشروع هندسي يجب ان يمتلك دقة معلومة و ثقة في القياسات لذلك يهدف هذا المقرر الى توضيح هذه المواضيع بصورة مفصلة.	

٣٨. مخرجات البرنامج المطلوبة وطرائق التعليم والتعلم والتقييم

٣٩. بنية البرنامج

المرحلة الدراسية	رمز المقرر أو المساق	اسم المقرر أو المساق	الساعات المعتمدة	
			نظري	عملي
المرحلة الثالثة		تصحيح القياسات	٦٠ ساعة و ٩٠ ساعة عملي	

٤٠. التخطيط للتطور الشخصي
الدورات ورش العمل اعداد برامج المشاركة في المؤتمرات التواصل مع بقية الجامعات نشر البحوث
٤١. معيار القبول (وضع الأنظمة المتعلقة بالالتحاق بالكلية أو المعهد)
حصول على شهادة الاعدادية الاوائل من خريجي المعاهد
٤٢. أهم مصادر المعلومات عن البرنامج

الكتب المنهجية الخاصة بالمادة

المصادر الخارجية

الكتب و المصادر الالكترونية

مخطط مهارات المنهج																				
يرجى وضع اشارة في المربعات المقابلة لمخرجات التعلم الفردية من البرنامج الخاضعة للتقييم																				
				مخرجات التعلم المطلوبة من البرنامج															
السنة / المستوى	رمز المقرر	اسم المقرر	أساسي أم اختياري	الاهداف المعرفية				الاهداف المهاراتية الخاصة بالبرنامج				الاهداف الوجدانية والقيمية				المهارات العامة والتأهيلية المنقولة (المهارات الأخرى المتعلقة بقابلية التوظيف والتطور الشخصي)			
				أ١	أ٢	أ٣	أ٤	ب١	ب٢	ب٣	ب٤	ج١	ج٢	ج٣	ج٤	د١	د٢	د٣	د٤
الثالثة		تصحيح القياسات	اساسي																

نموذج وصف المقرر

وصف المقرر

يوفر وصف المقرر هذا إيجازاً مقتضياً لأهم خصائص المقرر ومخرجات التعلم المتوقعة من الطالب تحقيقها مبرهناً عما إذا كان قد حقق الاستفادة القصوى من فرص التعلم المتاحة. ولابد من الربط بينها وبين وصف البرنامج.

٢٥. المؤسسة التعليمية	جامعة بغداد
٢٦. القسم العلمي / المركز	كلية الهندسة- قسم هندسة المساحة
٢٧. اسم / رمز المقرر	
٢٨. أشكال الحضور المتاحة	الإلكتروني و تواجد فعلي في العملي
٢٩. الفصل / السنة	سنوي
٣٠. عدد الساعات الدراسية (الكلي)	٦٠ ساعة نظري و كذلك عملي
٣١. تاريخ إعداد هذا الوصف	2021/2/2
٣٢. أهداف المقرر	
يمكن للخريجين ان يمارسون العمل في المجال الهندسي من خلال عمليات تصحيح القياسات الحقلية و التحقق من الارصادات	
ان علم تصحيح القياسات و نظرية الاخطاء من العلوم الاساسية في اختصاص هندسة المساحة ، اي مشروع هندسي يجب ان يمتلك دقة معلومة و ثقة في القياسات لذلك يهدف هذا المقرر الى توضيح هذه المواضيع بصورة مفصلة.	

٣٣. مخرجات المقرر وطرائق التعليم والتعلم والتقييم

أ- الاهداف المعرفية

أ١- ***The student should deliver a complete knowledge and practical experience of applying lea squares adjustment solution to solve surveying problems and have a principal knowledge about least squares adjustment***

طرائق التقييم
عن الطريق الواجبات اليومية الامتحانات اليومية الامتحانات الفصلية تقديم التقارير الحضور
طرائق التعليم والتعلم المحاضرات pdf&ppt المحاضرات الفديوية التقارير التطبيقات العملية
طرائق التقييم
عن الطريق الواجبات اليومية الامتحانات اليومية الامتحانات الفصلية تقديم التقارير الحضور
د - المهارات العامة والتأهيلية المنقولة (المهارات الأخرى المتعلقة بقابلية التوظيف والتطور الشخصي). د١- الدورات التأهيلية د٢-الندوات د٣-ورش العمل د٤- التواصل مع بقية الجامعات

٣٤. بنية المقرر					
الأسبوع	الساعات	مخرجات التعلم المطلوبة	اسم الوحدة / أو الموضوع	طريقة التعليم	طريقة التقييم
١	٢		مقدمة احصائية + تعريف المصطلحات و المصادر	Ppt &pdf+ video	حضور ومشاركة cw
٢	٢		انواع الاخطاء (الدقة + الاتقان +الخطاء النسبي)	Ppt &pdf+ video	حضور ومشاركة cw
٣	٢		مقايس الدقة + الاحتمالية الاحصائية	Ppt &pdf+ video	حضور ومشاركة cw
٤	٢		رسم منحني التوزيع الطبيعي و الاخطاء الاحتمالية	Ppt &pdf+ video	حضور ومشاركة cw
٥	٢		الاشتقاق الرياضي الاقل المربعات + الارصادات الموزونة	Ppt &pdf+ video	حضور ومشاركة cw
٦	٢		مقدمة عن انتشار الاحطاء العشوائية	Ppt &pdf+ video	حضور ومشاركة cw
٧	٢		استخدام المصفوفات في حساب انتشار الاخطاء العشوائية	Ppt &pdf+ video	حضور ومشاركة cw
٨	٢		دقة الاجهزة في قياس المسافات الاكترونية	Ppt &pdf+ video	حضور ومشاركة cw
٩	٢		التحليل المسبق للبيانات	Ppt &pdf+ video	حضور ومشاركة cw
١٠	٢		اسلوب التصحيح باقل المربعات	Ppt &pdf+ video	حضور ومشاركة cw
١١	٢		اشتقاق المعادلات الارصادية وتطبيقاتها	Ppt &pdf+ video	حضور ومشاركة cw
١٢	٢		اشتقاق المعادلات الشرطية وتطبيقاتها	Ppt &pdf+ video	حضور ومشاركة cw
١٣	٢		حساب دقة البيانات بعد	Ppt &pdf+	حضور

		تاتصحيح ومقارنتها بين طرق التصحيح		video	ومشاركة cw
١٤	٢	امتحان الفصل الاول			
١٥	٢	مقدمة عن مصفوفة التباين والتغاير وتطبيقاتها		Ppt &pdf+ video	حضور ومشاركة cw
١٦	٢	منحني القطع الناقص للخطاء+ والنسبي		Ppt &pdf+ video	حضور ومشاركة cw
١٧	٢	عطلة نصف السنة		Ppt &pdf+ video	حضور ومشاركة cw
١٨	٢	معاير الدقة في اعمال المسح		Ppt &pdf+ video	حضور ومشاركة cw
19	٢	تطبيقات التصحيح بالمعادلات الشرطية		Ppt &pdf+ video	حضور ومشاركة cw
20	٢	مقدمة عن تصحيح شبكات التسوية بالمعادلات الشرطية		Ppt &pdf+ video	حضور ومشاركة cw
21	٢	تصحيح بشبكات التضليع بالمعادلات الشرطية		Ppt &pdf+ video	حضور ومشاركة cw
22	٢	تطبيقات في تصحيح شبكات التثليث الزاوي		Ppt &pdf+ video	حضور ومشاركة cw
23	٢	استخدام الاتجاهات بدلا من الزوايا		Ppt &pdf+ video	حضور ومشاركة cw
24	٢	تصحيح شبكات التثليث بالاطوال		Ppt &pdf+ video	حضور ومشاركة cw
25	٢	امتحان الفصل الثاني			
26	٢	شبكات التسوية وتطبيقاتها الحقلية		Ppt &pdf+ video	حضور ومشاركة cw
27	٢	شبكات التضليع بطريقة المعادلات الرصدية		Ppt &pdf+ video	حضور ومشاركة cw
28	٢	التصحيح بطريقة تباين		Ppt &pdf+	حضور

			الاحداثيات	video	ومشاركة cw
29	٢		التقاط الامامي بالاطوال و التقاطع العكسي	Ppt &pdf+ video	حضور ومشاركة cw
30	٢		التقاطع الامامي بالاتجاهات و التقاطع العكسي	Ppt &pdf+ video	حضور ومشاركة cw

٣٥. البنية التحتية	
٥- الكتب المقررة المطلوبة	كتاب تصحيحات القياسات في المساحة الهندسية و المساحة المستوية
٦- المراجع الرئيسية (المصادر)	Adjustment computations Practical least square Observation and least square
ج) الكتب والمراجع التي يوصى بها (المجلات العلمية ،التقارير ،.....)	Adjustment computations Practical least square
ح) المراجع الالكترونية ،مواقع الانترنيت ،.....	Observation and least square

٣٦. خطة تطوير المقرر الدراسي
اضافة بعض البرمجيات الحديثة الى المقرر

وزارة التعليم العالي والبحث العلمي
جـــهاز الإشـــراف والتقـويم العلـمي
دائرة ضمان الجودة والاعتماد الأكاديمي

استمارة وصف البرنامج الأكاديمي للكليات والمعاهد

للعام الدراسي ٢٠٢٠-٢٠٢١

الجامعة : بغداد
الكلية /المعهد : كلية الهندسة
القسم العلمي : قسم هندسة المساحة
تاريخ ملء الملف : 2021/2/2

التوقيع : **التوقيع :**
اسم رئيس القسم : **اسم المعاون العلمي :**
التاريخ : **التاريخ :**

دقق الملف من قبل
شعبة ضمان الجودة والأداء الجامعي
اسم مدير شعبة ضمان الجودة والأداء الجامعي:
التاريخ / /
التوقيع

مصادقة السيد العميد

وصف البرنامج الأكاديمي

يوفر وصف البرنامج الأكاديمي هذا ايجازاً مقتضياً لأهم خصائص البرنامج ومخرجات التعلم المتوقعة من الطالب تحقيقها مبرهناً عما إذا كان قد حقق الاستفادة القصوى من الفرص المتاحة . ويصاحبه وصف لكل مقرر ضمن البرنامج

٤٣. المؤسسة التعليمية	جامعة بغداد
٤٤. القسم العلمي / المركز	كلية الهندسة قسم هندسة المساحة
٤٥. اسم البرنامج الأكاديمي او المهني	المساحة II
٤٦. اسم الشهادة النهائية	بكالوريوس
٤٧. النظام الدراسي : سنوي /مقررات/اخرى	سنوي
٤٨. برنامج الاعتماد المعتمد	
٤٩. المؤثرات الخارجية الأخرى	
٥٠. تاريخ إعداد الوصف	2021/2/2
٥١. أهداف البرنامج الأكاديمي	
يمكن للخريجين ان يمارسون العمل في المجال الهندسي من خلال عمليات المسح الحقلي و التحقق من الارصادات	
ان علم المساحة و نظرية الاخطاء من العلوم الاساسية في اختصاص هندسة المساحة ، اي مشروع هندسي يجب ان يمتلك دقة معلومة و ثقة في القياسات لذلك يهدف هذا المقرر الى توضيح هذه المواضيع بصورة مفصلة.	

٥٢. مخرجات البرنامج المطلوبة وطرائق التعليم والتعلم والتقييم

٥٣. بنية البرنامج

المرحلة الدراسية	رمز المقرر أو المساق	اسم المقرر أو المساق	الساعات المعتمدة

			نظري	عملي
المرحلة الثانية		المساحة II	٦٠ نظري + ٩٠ عملي	

٥٤. التخطيط للتطور الشخصي
الدورات ورش العمل اعداد برامج المشاركة في المؤتمرات التواصل مع بقية الجامعات نشر البحوث
٥٥. معيار القبول (وضع الأنظمة المتعلقة بالالتحاق بالكلية أو المعهد)
الحصول على شهادة الاعدادية الاوائل من خريجي معاهد المساحة
٥٦. أهم مصادر المعلومات عن البرنامج

الكتب المنهجية الخاصة بالمادة

المصادر الخارجية

الكتب و المصادر الالكترونية

مخطط مهارات المنهج																					
يرجى وضع اشارة في المربعات المقابلة لمخرجات التعلم الفردية من البرنامج الخاضعة للتقييم																					
				مخرجات التعلم المطلوبة من البرنامج																	
السنة / المستوى	رمز المقرر	اسم المقرر	أساسي أم اختياري	الاهداف المعرفية				الاهداف المهاراتية الخاصة بالبرنامج				الاهداف الوجدانية والقيمية				المهارات العامة والتأهيلية المنقولة (المهارات الأخرى المتعلقة بقابلية التوظيف والتطور الشخصي)					
				أ١	أ٢	أ٣	أ٤	ب١	ب٢	ب٣	ب٤	ج١	ج٢	ج٣	ج٤	د١	د٢	د٣	د٤		
الثانية		المساحة II	اساسي																		

نموذج وصف المقرر

وصف المقرر

يوفر وصف المقرر هذا إيجازاً مقتضياً لأهم خصائص المقرر ومخرجات التعلم المتوقعة من الطالب تحقيقها مبرهناً عما إذا كان قد حقق الاستفادة القصوى من فرص التعلم المتاحة. ولابد من الربط بينها وبين وصف البرنامج.

٣٧. المؤسسة التعليمية	جامعة بغداد
٣٨. القسم العلمي / المركز	كلية الهندسة- قسم هندسة المساحة
٣٩. اسم / رمز المقرر	
٤٠. أشكال الحضور المتاحة	الإلكتروني و تواجد فعلي في العملي
٤١. الفصل / السنة	سنوي
٤٢. عدد الساعات الدراسية (الكلي)	٦٠ ساعة نظري و ٩٠ عملي
٤٣. تاريخ إعداد هذا الوصف	2021/2/2
٤٤. أهداف المقرر	
يمكن للخريجين ان يمارسون العمل في المجال الهندسي من خلال عمليات المسح الحقلي و التحقق من الارصادات	
ان علم المساحة و نظرية الاخطاء من العلوم الاساسية في اختصاص هندسة المساحة ، اي مشروع هندسي يجب ان يمتلك دقة معلومة و ثقة في القياسات لذلك يهدف هذا المقرر الى توضيح هذه المواضيع بصورة مفصلة.	

٤٥. مخرجات المقرر وطرائق التعليم والتعلم والتقييم

أ- الاهداف المعرفية تدريب الطالب على المسح الارضي من خلال عمليات رفع النقاط او تسقيط النقاط على الارض من خلال حساب الاحداثيات الحقيقية للأبنية و الطرق والجسور وغيرها من العوارض تمثيل حقيقي و حساب العلاقات بين النقاط وايجاد الاحداثيات المجهولة بطرق متعددة وتصميم الشبكات الجيوديسية بدقة عالية .
طرائق التقييم
عن الطريق الواجبات اليومية الامتحانات اليومية الامتحانات الفصلية تقديم التقارير الحضور
طرائق التعليم والتعلم المحاضرات pdf&ppt المحاضرات الفديوية التقارير التطبيقات العملية
طرائق التقييم
عن الطريق الواجبات اليومية الامتحانات اليومية الامتحانات الفصلية تقديم التقارير الحضور
د - المهارات العامة والتأهيلية المنقولة (المهارات الأخرى المتعلقة بقابلية التوظيف والتطور الشخصي). د١- الدورات التأهيلية د٢-الندوات د٣-ورش العمل د٤- التواصل مع بقية الجامعات

٤٦. بنية المقرر					
الأسبوع	الساعات	مخرجات التعلم المطلوبة	اسم الوحدة / أو الموضوع	طريقة التعليم	طريقة التقييم
١	٢		مقدمة عن المسح المتقدم (القياسات الدقيقة و الاجهزة)	Ppt &pdf+ video	حضور ومشاركة cw
٢	٢		المعلومات الاساسية عن المسح المتقدم وادارة وتنظيم الاعمال	Ppt &pdf+ video	حضور ومشاركة cw
٣	٢		شبكات التثليث والغرض من التثليث	Ppt &pdf+ video	حضور ومشاركة cw
٤	٢		الكشف عن الاخطاء باستخدام الاحصاء	Ppt &pdf+ video	حضور ومشاركة cw
٥	٢		درجات التثليث	Ppt &pdf+ video	حضور ومشاركة cw
٦	٢		الاشكال الهندسية المستخدمة في التثليث	Ppt &pdf+ video	حضور ومشاركة cw
٧	٢		حساب قوة الاشكال	Ppt &pdf+ video	حضور ومشاركة cw
٨	٢		التثبيت نقاط السيطرة واستخدام الابراج	Ppt &pdf+ video	حضور ومشاركة cw
٩	٢		المقترح الاولي في بناء الشبكات	Ppt &pdf+ video	حضور ومشاركة cw
١٠	٢		تحديد خط القاعدة	Ppt &pdf+ video	حضور ومشاركة cw
١١	٢		تصحيح خط القاعدة	Ppt &pdf+ video	حضور ومشاركة cw
١٢	٢		القياس الدقيق للزوايا	Ppt &pdf+ video	حضور ومشاركة cw
١٣	٢		التصحيح الزوايا بطريقة السيتات	Ppt &pdf+ video	حضور ومشاركة cw

١٤	٢		القياس بطريقة شرايبر		
١٥	٢		التصحيح بطريقة شرايبر	Ppt &pdf+ video	حضور ومشاركة cw
١٦	٢		امتحان الفصل الاول	Ppt &pdf+ video	حضور ومشاركة cw
١٧	٢		عطلة نصف السنة	Ppt &pdf+ video	حضور ومشاركة cw
١٨	٢		طريقة الخروج عن المركز	Ppt &pdf+ video	حضور ومشاركة cw
19	٢		التقاطع الامامي بالزوايا	Ppt &pdf+ video	حضور ومشاركة cw
20	٢		التقاطع الخلفي بالزوايا	Ppt &pdf+ video	حضور ومشاركة cw
21	٢		تصحيح مواقع النقاط المقاسة	Ppt &pdf+ video	حضور ومشاركة cw
22	٢		تصحيح الشكل الرباعي المتقاطع الاقطار	Ppt &pdf+ video	حضور ومشاركة cw
23	٢		تصحيح الشكل ذو النقطة المركزية	Ppt &pdf+ video	حضور ومشاركة cw
24	٢		مقدمة عن الجايروثيودولايت	Ppt &pdf+ video	حضور ومشاركة cw
25	٢		طريقة القياس بالجايروثيودولايت		
26	٢		شبكات التثليث البعدي	Ppt &pdf+ video	حضور ومشاركة cw
27	٢		استخدامات الاجهزة الاكترونية	Ppt &pdf+ video	حضور ومشاركة cw
28	٢		موازنة الشبكات وطرق التثليث	Ppt &pdf+ video	حضور ومشاركة cw
29	٢		امتحان الفصل الثاني	Ppt &pdf+	حضور

					ومشاركة cw
30	٢		التقاطع بالطوال وتصحيح المواقع	Ppt &pdf+ video	حضور ومشاركة cw

٤٧. البنية التحتية	
٧- الكتب المقررة المطلوبة	كتاب المساحة الهندسية و المساحة المستوية Engineering surveying
٨- المراجع الرئيسية (المصادر)	Adjustment computations Plane surveying Surveying .7th Practical least square Observation and least square
خ) الكتب والمراجع التي يوصى بها (المجلات العلمية ،التقارير ،.....)	Practical least square
د) المراجع الالكترونية ،مواقع الانترنيت ،.....	Project surveying Observation and least square

٤٨. خطة تطوير المقرر الدراسي
اضافة بعض البرمجيات الحديثة الى المقرر تطوير الجانب العملي من خلال استخدام الاجهزة الحديثة