

The University of Jordan
Accreditation & Quality Assurance Center

COURSE Syllabus

0305202 Geodesy and Surveying

(3 Credit Hours)

1	Course title	Geodesy And Surveying
2	Course number	0305202
3	Credit hours (theory, practical)	3 credit hours (theory)
	Contact hours (theory, practical)	Just before or after the Class
4	Prerequisites/corequisites	0305 101
5	Programtitle	Environmental and Applied Geology
6	Programcode	
7	Awarding institution	The University of Jordan
8	Faculty	Faculty of Science
9	Department	Department of Geology
10	Level of course	Introductory course
11	Year of study andsemester(s)	Aut.2017
12	Final Qualification	
13	Other department(s) involved in teaching the course	None
14	Language of Instruction	Arabic + English expressions.
15	Date of production/revision	Sep.2017

16. Course Coordinator:

Officenumbers,officehours, phonenumbers,andemailaddresses shouldbelisted.

Prof. Najib Abou Karaki, just before or After every class to specify the time, generally very shortly. [Facebook can also be used to agree on a suitable time.](#) Phone 22279, naja@ju.edu.jo

17.Other instructors:

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18. Course Description:

As stated in the approved study plan.

Fundamental concepts, Historical review, Earth models Topographical (True), Physical (Geoid) , Mathematical (Ellipsoid),Coordinates; the Earth's shape, relation with the gravitational field, Fundamentals of Geometrical Geodesy and techniques, Triangulation, Trilateration ,Traversing. Geodetic Networks, Physical Geodesy, Space Geodesy.

19. Course aims and outcomes:

A- Aims: After having completed this course, the student should be able

1. To know the basics of Geodesy, and acquire related vocabulary.
2. To understand the fundamental role of gravity in Geodesy and related works.
3. To know the basic techniques in Classical Geodesy and their rapid evolution in modern Geodesy.
4. To understand the role of Geodesy in earth science and various engineering and mapping applications.
5. to understand the importance of national geodetic networks for cartography and development..

B- Intended Learning Outcomes (ILOs): Upon successful completion of this course students will be able to...

To prove his achievement of the aims of the course.

20. Topic Outline and Schedule:

Topic	Number of lectures	Instructor	Achieved ILOs (numbers in section 9B)	Evaluation Methods	Reference	
Introduction: Fundamental Concepts, Geographical Coordinates (Latitude, Longitude, Altitude), Directions, role of geodesy in earth science, engineering and general development. Distances and angles.	8	Najib Abou Karaki	The subject is one unit.	Reports and or exams.	The list of references and new developments from the internet.	
Shape of the Earth, theoretical considerations, earth reference Datum, Topographic (True), Physical (Geoid), Mathematical (Ellipsoid) characteristics: flattening, first and second eccentricity, mathematical models of the earth, Deflection of the Vertical.	6					
Coordinates: Reminder of classical trigonometry, triangles, Spherical Trigonometry, Great circles. Sine and Cosine laws in spherical Trigonometry, spherical triangles,	8					

Napier rule. Astronomic and Geodetic Coordinates Relations between Coordinates.					
Geodetic Measurements, Angel measurements (horizontal and Vertical), Distance measurements, elements of geodetic measurement techniques, Triangulation, Trilateration, Traversing. Errors and compensations. 1. Precise levelling.	8				
Geodetic Networks, 1 st , 2 nd and 3 ^d class geodetic points. Specifications and techniques. Office and field measurements, processing and corrections. The Jordanian National Geodetic Network.	8				
Modern Positioning Systems, IPS, GPS, Galileo, GPS+, applications in earth science and modern life.	5				
Elements of map Projections. Equivalent, Conformal etc..	5				

21. Teaching Methods and Assignments:

Development of ILOs is promoted through the following teaching and learning methods:

Interactive making good use of the internet through films and presentations..

22. Evaluation Methods and Course Requirements:

Opportunities to demonstrate achievement of the ILOs are provided through the following assessment methods and requirements: participation in class, quizzes, **exams are open book the student is allowed to use internet during the exam.**

23. Course Policies:

The regulations of The University of Jordan apply in all aspects.

24. Required equipment:

A good quality data show,

25. References:

A- Required book (s), assigned reading and audio-visuals:

- No required books, these are suitable books for basic information and more
- Latest edition of Burkard , Geodesy for the layman. USGS.(pdf will be made available) as well as videos form the internet.

26. Additional information:

Empty rectangular box for additional information.

Name of Course Coordinator: Prof. Najib Abou Karaki Signature: نجيب أبوكركي----- Date: --9-15

2017--- Head of curriculum committee/Department: ----- Signature: -----

Head of Department: ----- Signature: -----

Head of curriculum committee/Faculty: ----- Signature: -----

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Dean: ----- -Signature: -----

Assurance

Copy to:
Head of Department
Assistant Dean for Quality

Course File