GEE 4812

PRINCIPLES OF GEOMATIC ENGINEERING
GEE 4812

Wednesday, 20 November 2024

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COURSE INFROMATION

COURSE OUTLINE FOR PRINCIPLES OF GEOMATICS					
Course Title	PRINCIPLES OF GEOMATICS				
Course Code	GEE 4812	**Half Course**	2.5	**Pass Mark**	40%
Department	Geomatic Engineering	**School**	Engineering		

COURSE AIMS

This course gives an opportunity to non Geomatic Engineering students to learn, understand and apply different instrumentation and techniques in data acquisition and processing and application of such data

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PRESCRIBED & RECOMMENDED MATERIAL

Prescribed Book(s)

1. Bannister A., Raymond S. and Raymond B. (1998) Surveying. 7th edition, Prentice Hall. ISBN 0582302498 978-0582302495
2. Campbell J. B. (2006) Introduction to Remote Sensing, Guildford Press, ISBN 159385319X,9781593853198
3. Wolf P.R. (2000) Elements of Photogrammetry, 3rd edition. McGraw-Hill, USA ISBN: 0072924543;978-0072924541
4. Longley P.A. et al, (2006) Geographic Information Systems and Science, John Wiley & Sons. ISBN 0470870028, 9780470870020

Recommended Reading(s)

1. Schofield W. (2007) Engineering Surveying 6th Ed. Butterworths-Heinman. ISBN:
2. 0750669497,978-0750669498 2. Bujakiewicz A. (1994), Lecture Notes -Photogrammetry I, UNZA/TUDelft.

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COURSE OBJECTIVES AND EXPECTED OUTCOME

1. Apply these concepts in their professions when the need arises;
2. Differentiate the basic surveying equipment for the different data capturing requirements
3. Explain the different data acquisition and processing techniques
4. Apply the different positioning techniques in surveying

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COURSE OBJECTIVES AND EXPECTED OUTCOME

5

- Apply the different data acquisition and processing techniques

6

- Execute a simple analysis of the data captured in the field

7

- Explain and apply the concepts of Photogrammetry Or GIS Or Remote sensing

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COURSE CONTENTS

1. Basic Concepts
2. Angular Measurements
3. Compass and GPS Surveying
4. Point Determination
5. Linear Measurements
6. Levelling
7. Options (Any one of the three) Civil/ Agricultural/ Mining Engineering –
   i. Introduction to GIS
   ii. Photogrammetry
   iii. Remote Sensing

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TEACHING AND LEARNING ACTIVITIES

Four contact hours per week

2 hour lecture sessions on Wednesday and Thursday:

3 hour practical sessions on Fridays: 14hrs-17hrs

Teaching will be based on blended lessons (interactive lectures & E-Learning) and interactive practical sessions.

Other methods which might be incorporated include;

1. Interactive class discussion
2. Presentations and critical reading
3. In class brainstorming sessions
4. Online discussion and forum

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DESCRIPTION OF COURSE ASSESSMENTS

Assessment	Description	Assessment Weight
Assignments& Quizzes (Theoretical)	Assignments: Min-researches, presentations, and short response items and calculations Quizzes: Sudden 5-10mins to review some learning outcomes on selected topics.	Under (5%) assignments
Labs (Field practical)	Field work, technical reports (presentations) and reports.	Under (15%) Labs
Test (Mid-Semester)	2 hours summative assessment which may involve short response items and calculations.	20%

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COURSE SCHEDULE

Week	Activity Dates	Topic & Due Dates
Week 01	28th June,	Unit 01-02: Basic Concepts
Week 02		
Week 03		
Week 04	19th July	Unit 03-04: Angular Measurements
Week 05		
Week 06	2nd August	Unit 05-06: Compass and GPS Surveying
Week 07		
Week 08	16th August	Unit 07-08: Point Determination
Week 09		
Week 10		
Week 11	6th Sept	Unit 09: Linear Measurements
Week 12		
Week 13	20th Sept	Unit 10-12: Levelling
Week 14		
Week 15	4th October	Course Review
		Mid-Year Examinations

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COURSE POLICIES

Student Commitment	• Attend all lectures, practicals and or excursions. • Regularly access Moodle course documents (All course materials will ONLY be posted on Moodle) • Use library facilities.
Practical Report Submission	• Submit practical reports on time as indicated by the Lecturer. • Submitted practical reports must be handed in person and should be typed and printed • When instructed by lecturer, reports can also be submitted via Moodle. • Late practical report submissions attract penalty of -5% for every day late.
Class Attendance	• Attendance will be taken for every lecture. • Lectures may not be repeated even when not enough students are in class. • No lecture will be postponed to accommodate everyone and students are expected to be on time for lectures to prevent disruption.

COURSE POLICIES

Cell Phones in Class	Use of cell phones, iPods, etc. (all electrical devices) are not allowed in class. All cell phones must be switched off or put on silent upon entering the class. Cell phone calls and text messaging may not be made or answered during lectures. No student may work on any computer (internet, documents, etc.) whilst the lecturer is busy lecturing unless permitted.
Complaints	A student who has a problem with the lecturer's teaching and/or marking has first to discuss the issue with the lecturer If not satisfied he/she can then take the matter up with the HoD

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QUESTIONS/DISCUSSION

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