DEPARTMENT OF ARCHITECTURE
UNIVERSITY OF THE PUNJAB, LAHORE.

BACHELORS OF ARCHITECTURE (B. ARCH)
5 YEARS PROGRAM

COURSE OUTLINE

Course Title	**Surveying and Levelling**
Course Code	**ARCH-264**
Credit Hours	**2**
Semester	**Spring**
Prerequisites	**NA**
Tutor	**As per Timetable**
Student Advising	**As per Timetable**
Contact	-

Teacher Signature **Chairman Signature**

Course introduction

The course is meant to familiarize the students with the concepts and instruments use in surveying and levelling.

Learning Objective:

The students are expected to perfume serving and understand the serve drawing. Moreover, students would be given first hand training to used different instrument used in land serving. These training would be given in the laboratory and on site

Outcome

At the end of this course students would be able to performed different types of serving and use theodilite

Learning Methodology:

- Lectures as provided in the schedule of the semester activities
- Study of Archival Material and recommended books
- Guest Lectures as per requirement
- Presentation on allocated topics

Grade Evaluation Criteria

Following, is the criteria for the distribution of marks to evaluate final grade in a semester.

Marks Evaluation	**Marks in percentage**
Sessional (Assignments, Quizzes, Presentations)	30
Mid Term	30
Final examination	40
Total	**100**

Content	
Unit 1	Introduction to land surveying: definitions, branches and their application.
Unit 2	Instruments used in reconnaissance.
Unit 3	Chain Surveying; Types of tapes, chains, methods of chain surveying
Unit 4	Field Survey
Unit 5	Leveling: Reduction of levels, temporary and permanent adjustments of levels, precise leveling.
Unit 6	Theodolite: Types, use, temporary and permanent adjustments.
Unit 7	Traversing with compass and theodolite.
Unit 8	Tachometry: With staff and sub tense bar.
Unit 9	**Mid Term Exam**
Unit 10	Plane Table Surveying: Parts and accessories, Methods of plane table survey, two and three points problems.
Unit 11	Contouring: Methods and applications.
Unit 12	**Model Making of Contours**
Unit 13	Field Survey
Unit 14	Area and Volumes: Computation by various methods, cross section and L-section of roads,
Unit 15	layout of buildings and structures.
Unit 16	3D Scanning
Unit 17	
Unit 18	Final Exam

Recommended Books/References	Wolf P. R. &Ghilani C. D. Elementary Surveying-An introduction to Geometrics, 11th Edition, Prentice Hall, USA, 2004. 2. Kavanagh, B. Surveying principles and Application, Prentice Hall (8th Edition), 2008 3. Irvine, W. Surveying for Construction, McGraw-Hill (4th Edition), 1995 4. Davis, R. E. Surveying Theory and Practice, McGraw-Hill (7th Edition) 5. Russel, P. W. and Brinker, C., Elementary Surveying, Harper Collins (9th Edition), 1997 6. James M. Anderson and Edward M. Mikhail, Introduction to Surveying,