<table>
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<tr>
<th>Subject Code</th>
<th>LSG12961</th>
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<td>Level</td>
<td>2</td>
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| Contact Hours| Lect:28  
               Tut:14 |
| Student Effort Hours | 120     |
| Assessment Method | Examination 60%  
                        Coursework 40% |
| Credit Value | 3        |
| Pre-requisites | Nil      |
| Co-requisites | Nil      |
| Exclusions   | Nil      |
| Subject Leader/ Lecturer/Dept. | Steve Lam (LSGI) |

**ENGINEERING SURVEYING**

**Subject Aim:**

*This subject is intended to:*

1. Provide students with elementary theory and practice of control surveys, detail mapping, setting-out of different structures and presentation of survey data in engineering projects, and to familiarise students with contemporary surveying developments.

**Learning Outcomes:**

*Students will demonstrate their ability to:-*

1. Understand the principles and objectives of measurement of building and land.
2. Apply the basic surveying operation and instrument.
3. Demonstrate the accurate setting out of buildings and related environs within agreed tolerances.

**Syllabus Content:**

*Fundamentals of Surveying*

- Applications of co-ordinate geometry in positioning and mensuration. Analysis of measurement errors and adjustment methods.

*Distance Measurement*

- Tape measurement and corrections. Optical measurements by stadia, subtense and tangential tacheometry.

*Angular Measurement*


*Vertical Control Survey*


*Horizontal Control Network*

- Classification, standards of accuracy, and general specifications for horizontal control surveys. Triangulation. Trilateration, and traverse. Design criteria, monumentation, instrumentation, observation procedures and data analysis.

*Detail Surveying and Mapping*

**Syllabus Content:** (Cont’d)

**Setting-Out of Structures for Construction**

**Introduction to Advanced Surveying Technology**

**Learning and Teaching Approach:**
This subject is taught in the form of normal lectures which is supported with suitable tutorials and field practicals in the appropriate areas.

Hand-outs are delivered to students for some of the subjects areas. Students are instructed to consult suitable chapters of texts in due course. Students are encouraged to take their own notes in lecture session. Any problems encountered will be solved in the practical/tutorial sessions or students may approach the lecturer directly.

Instructions, introductions and field booking sheets/forms are given to students prior to field practicals. Students may prepare for their field works in advance. Tutorial/practicals are marked and returned to students. These will make up the mark for the continued assessments for the subject.

**Assessment:**
60% examination + 40% coursework.

**Reading List:**

**Recommended:**
Bannister and Raymond (1994) *Solving Problems in Surveying*, Longman
Blachut, Chrzanowski and Saastamoinen (1979) *Urban Surveying & Mapping*, Springer-Verlag
Clendinning and Olive (1969) *Principles and Uses of Surveying Instruments*, Blackie
Uren and Price (1994) *Surveying for Engineers*, MacMillan