



**UTM**  
UNIVERSITI TEKNOLOGI MALAYSIA

Faculty of  
Geoinformation and  
Real Estate

# Geomatic Undergraduate Programme @UTM – Students and Alumni Perspective

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## Outline

- Introduction
- The 4-year programme
- The feedback
- Conclusions

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"Become friends with people who aren't your age. Hang out with people whose first language isn't the same as yours. Get to know someone who doesn't come from your social class. This is how you see the world. This is how you grow."

"EDUCATION IS THE MOST POWERFUL WEAPON WHICH YOU CAN USE TO CHANGE THE WORLD"

- NELSON MANDELA



## Introduction

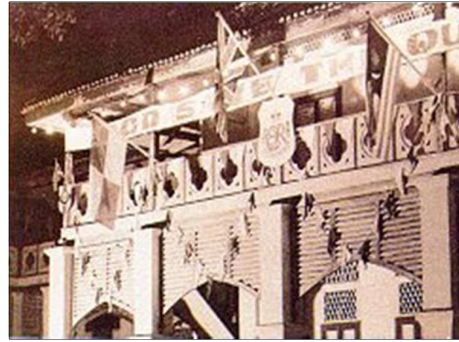
- Land Surveying undergraduate programme introduced in early 1970's
- UTM KL campus



# UTM Chronology



Treacher Technical School, KL (1904)



Technical College, KL (1946)



Universiti Teknologi Malaysia (1975)



National Institute of Technology, KL (1972)

# UTM Chronology



Skudai campus, Johor Bahru  
(1,148 hectares)



Kuala Lumpur International Campus  
(35 hectares)



## The Undergraduate Programme

- The bachelor program in Geomatic Engineering at UTM is the oldest and most established professional degree program in geomatic engineering in Malaysia.
- The program is accredited by the Land Surveyors Board of Malaysia and has been designed to fulfill all the requirements for registration as Licensed Land Surveyor in Malaysia.
- Graduates are also eligible to join the Institution of Surveyors Malaysia (ISM) as professional member.

## Programme Objectives

- ✓ In-depth knowledge in geomatics engineering, competence and skillful in managing geomatic engineering projects
- ✓ Ability to use techniques, skills and modern geomatic engineering tools to solve geomatic engineering and related problems creatively.
- ✓ Ability to analyze and synthesis geo-spatial data for specific purposes and in compliance with the relevant laws and to maintain and update geo-spatial data.
- ✓ Having the innovative attitude and initiatives towards creating an effective and efficient geomatic profession.

## Career Prospects

- Geomatic engineering is a broad discipline. Some graduates join companies specializing in land management and development and become Licensed Land surveyors - the only people to perform surveys for land titles.
- Many join organizations that operate on a broader front in geomatic engineering, working in areas including land and resource management, environmental remote sensing, surveying for engineering construction, surveying to detect structural deformation and hydrographic surveying for dredging operations.
- Graduates with an interest in geographical information systems have found employment with corporations with an interest in mapping and/or management of urban engineering facilities, cultural resources or fleet control.

## The 4-year programme

- Programme duration
  - Minimum 4 years (8 semesters)
  - Maximum 6 years (12 semesters)
- Credit hours
  - 132 credit hours

## The 4-year programme

- Year 1 (Semester I)
  - SGHU 1012 Introduction to Geomatic
  - SGHU 1013 Fundamental of Survey and Mapping
  - SGHU 1093 Computer Programming
  - SGHU 1412 Computer Aided Design for Surveyors
  - SSCE 1523 Mathematic for Surveyors
  - *UICI 1012 Islamic and Asian Civilization*
  - *UHAS 1151 Ethnic Relations*

## Year 1 (Semester II)

- SGHU 1043 Engineering Survey
- SGHU 1203 Field Astronomy
- SGHU 1452 Photogrammetry I
- SGHU 1502 Cartography
- SSCE 1442 Statistics for Surveyors
- *ULAB 1112 English for Academic Communication*
- *UHAS 2112 Critical and Creative Thinking*
- *UKQ\* 1\*\*1 Co-Curriculum I*

## Year 2 (Semester I)

- SGHU 2043 Engineering Survey Technology
  - SGHU 2452 Photogrammetry II
  - SGHU 2513 Hydrographic Surveying
  - SGHU 2552 Introduction to GIS
  - SGHU 2602 Geodesy I
  - SGHU 2922 Technical Writing
  - UICI 2022 *Human, Technology and Science*
- or
- UHA 1012 *Malay Language Communication*  
(for International students)

## Year 2 (Semester II)

- SGHU 2252 Satellite Positioning
- SGHU 2313 Cadastral Survey
- SGHU 2412 Introduction to Adjustment Computation
- SGHU 2613 Geodesy II
- SGHU 2901 Survey Camp
- SGHU 2\*\*3 Elective I
- ULAB 2112 *Advanced English for Academic Communication*
- UKQ\* 1\*\*1 *Co-Curriculum II*

## Year 3 (Semester I)

- SGHU 3\*\*3 Elective 2
- SGHU 3\*\*3 Elective 3
- SGHU 3\*\*3 Elective 4
- SGHU 3\*\*4 Elective 5
- SGHU 2403 Introduction to Remote Sensing
- SGHU 4313 Land Law and Survey Regulation



## Year 3 (Semester II)

- SGHU 3903 Industrial Training - Seminar
- SGHU 3909 Industrial Training – Field

## Year 4 (Semester I)

- SGHU 3\*\*3 Elective 6
- SGHU 4\*\*3 Elective 7
- SGHU 4\*\*3 Elective 8
- SGHU 4\*\*3 Elective 9
- SGHU 4332 Land Administration
- SGHU 4942 Undergraduate Project I
- ULAB 3\*\*2 *English (Elective)*

## Year 4 (Semester II)

- SGHU 4\*\*3 Elective 10
- SGHU 4\*\*3 Elective 11
- SGHU 4342 Professional Practice
- SGHU 4372 Project management for Surveyors
- SGHU 4944 Undergraduate Project II
- UHAS 3012 *Entrepreneurship and Enterprise Development*

## Elective Courses

- SGHU 2523 Hydrographic Surveying Technology
- SGHU 3253 Global Navigation Satellite System
- SGHU 3283 Least Square Estimation
- SGHU 3553 Land Information System
- SGHU 3723 Falaq Syarie
- SGHU 3743 Physical Oceanography
- SGHU 3763 LIS Database Management
- SGHU 4133 Topographic Mapping using Remotely Sensed Data
- SGHU 4273 Utility Mapping

## Elective Courses

- SGHU 4313 Land Law and Survey Regulation
- SGHU 4323 Cadastre Survey Practice
- SGHU 4663 Port and Coastal Engineering
- SGHU 4823 Tidal Processing and Analysis
- SGHU 4833 Digital Imaging Photogrammetry and Application
- SGHU 4843 Environmental Studies
- SGHU 4853 Development and Implementation of LIS
- SGHU 4863 Industrial Survey
- SGHU 4873 Law of the Sea
- SGHU 4893 Map Projection

## The feedback

Current students  
year 3  
&  
year 4

- The programme provides the **right environment** for learning the courses
- Majority have indicated (via interview) that they **like** the programme

## The feedback

Alumni  
(working locally or  
within  
international  
companies)

- The programme provides **excellent knowledge** on the geomatic discipline
- Suggestion for more knowledge on cartography, other fundamentals e.g. geodesy and photogrammetric mapping

## Conclusions

This paper described the academic structure of the programme and highlighted several points that needs to be addressed as suggestions for improvement. Majority of the correspondents are happy with the programme, however, the groups also suggested several points for improvement.

"Every child deserves a champion  
-- an adult who will never give  
up on them, who understands  
the power of connection, and  
insists that they become the  
best that they can possibly be."

-- Rita Pierson

## Acknowledgement

- Thanks
  - My classmates,
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  - Ex Dean of UTM Geoinformation and Real Estate Faculty

**Thank you for your attention!**