**Weighting of assessment: 100% total marks**

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| **Learning Outcomes** |
| On successful completion of the module students should be able to:   1. Synthesize underlying geospatial concepts and apply them appropriately; 2. Critically evaluate forms of social analytics, applying appropriate techniques on social information; 3. Determine, design, prototype and implement geospatial applications; 4. Critically evaluate and identify emerging technologies and research areas relevant to geospatial analystics. |

**Task 1 – Descriptive explaining (50%)**

1. **Utilization of geospatial information are widely associates in social context with the support of different geospatial applications. (20%)**

Discuss the techniques in conducting a geospatial analysis using each following applications and presenting the result / output with social media.

Applications

* QGIS
* ArcGIS Online
* Open Street Maps
* Google Maps

Techniques

* Data Inputd
* Data Management
* Operations and function
* Data output

1. **The usage of geospatial technology are very minimal in Sri Lanka, comparative to other countries in the world. (30%)**

Resources management and Taxation are two (2) different geospatial applications, which can fulfill the current needs of Sri Lankans. Although, these applications can fulfill Sri Lankan needs, they are not being implemented in Sri Lanka, yet. Prepare a proposal to implement those applications in Sri Lanka. Following aspects should be incorporated in each proposal

* Need assessment
* Different types of data to be input
* Proposed functions / operations
* Expected output

You may refer Esri applications (<http://www.esri.com/industries>), but not necessary limit it.

**Task 2 – Geospatial Application (25%)**

**Geospatial analysis can be applicable for the matters not only contexts in social, but also environmental, economic and political.**

The objective of this exercise is to identify spatial regions deemed as potentially suitable locations for the development of wind energy production. The desire of this particular case is to identify suitable locations for wind energy production in Ward 21 of the Ottawa, Ontario region.

The Provincial Government of Ontario has provided the following restrictions in relation to the spatial placement of wind energy turbines for use of commercial applications:

* 135m from all existing public roadway
* 135m from all existing railway lines
* 1000m from all existing transmission lines
* Extent of the spatial region should be greater than 5000ha.

Following data are provided

* Wards in Ottawa
* Road segments of Ottawa
* Railways of Ottawa
* Transmission lines of Ottawa

Use the existing CRS (EPSG: 2951) as project CRS and prepare a map to present your result.

**Task 3 – Geospatial Modeling through Programming (25%)**

**Use of python programming to analyze Geospatial data in social context**

You are provided all kinds of crime details during first six month of the year 2017 in Colombo Municipal Council area (1-15 divisions). Further details of schools and police stations are also provided. You may use graphs, charts or map, where necessary and explain your answer for following questions.

1. What are divisions having highest overall crime densities?
2. What is most occurring crime in each division?
3. Which month occurred the highest number of crime in each division?
4. Prove/disprove the statement – “Drug occurrence mostly occurs in the areas lesser than 150m from school”.

**REPORT STRUCTURE**

* Paper Size : A4
* Word Count : 4000 words
* Printing Margins : LHS; RHS: 1 Inch
* Header and Footer : 1 Inch
* Printing : Single Sided
* Basic Font Size : 12
* Font Style : Arial/Times New Roman

**Important Information for Students**

* The assignment should be submitted as a **SOFT COPY to ICBT SIS** on or before the due date.
* The soft copy should be the completed document with the cover page, turnitin report and digital receipt one file. Documents which are not in the correct format will be **rejected.**
* Student must pay the re assessment fee of LKR 5000 in order to activate the ICBT SIS portal.
* Softy copy should be named as CIS- (subject number) - (Cardiff met student registration number)

E.g. for Information Security Management Assignment

**CIS7027-200\*\*\*\***

* Students are expected to keep a backup of all the assignments. ICBT and Cardiff Metropolitan University have all the right to re call for soft copy of any assignment at any time during the course.
* Student should sign a register upon submitting assignment which will be kept in the administration department of relevant campus. This record on the register will be considered as the official record for submission.
* Please note that **plagiarism** is treated as a serious offence and therefore the work you produce **must be individual and original** although may work in groups in some instances (Please refer to Student Handbook on Plagiarism & Cheating).
* All sources of information must be **referenced using “Harvard referencing**” where a **reference listing** should be included at the end of the assignment.
* Please note that the submission date given for this assignment is the **final date** that you can submit the assignment. No late submissions are allowed. (Please refer to the Student Handbook on Assessments - Late Submissions).
* Please refer to Student Handbook on Assignments – Re-submission, mitigating circumstances procedure.
* Please use the attached coversheet with the correct details.