GE2215 Week 13

Course conclusion
Exam

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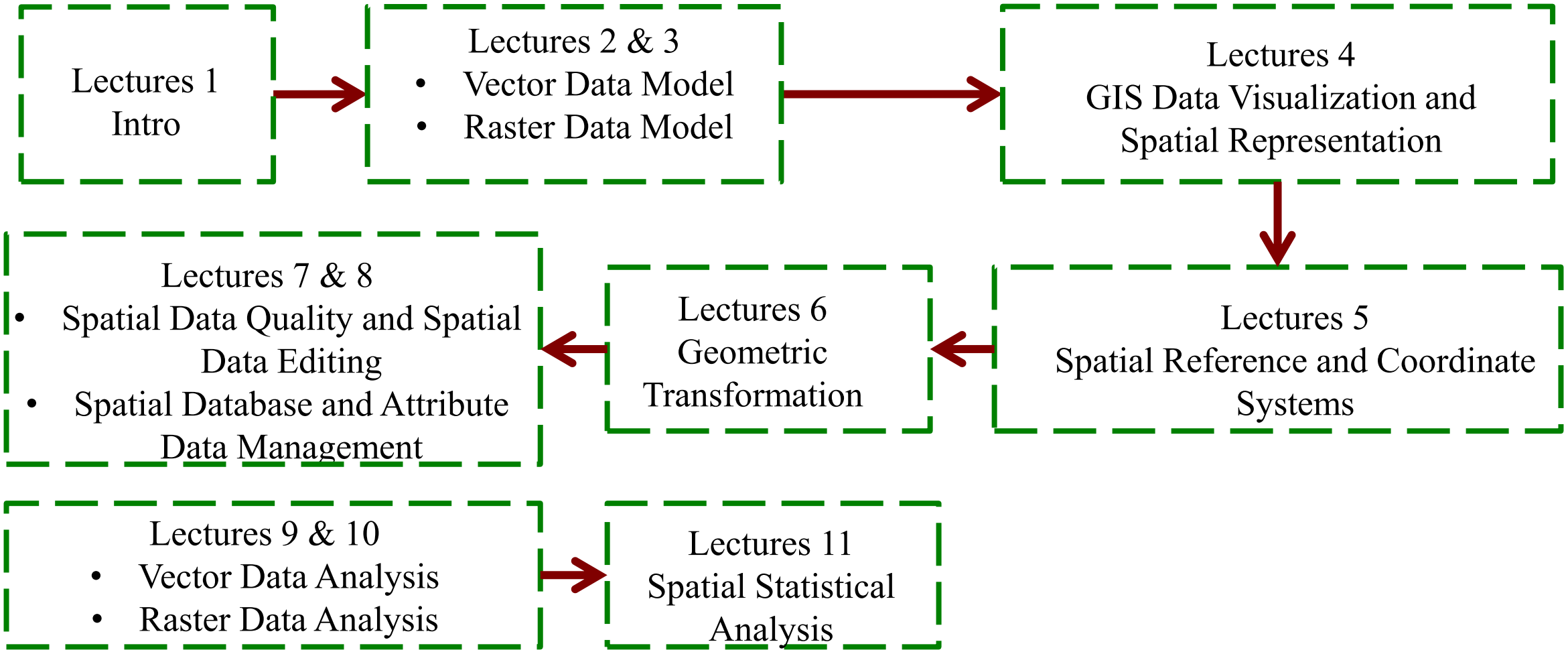
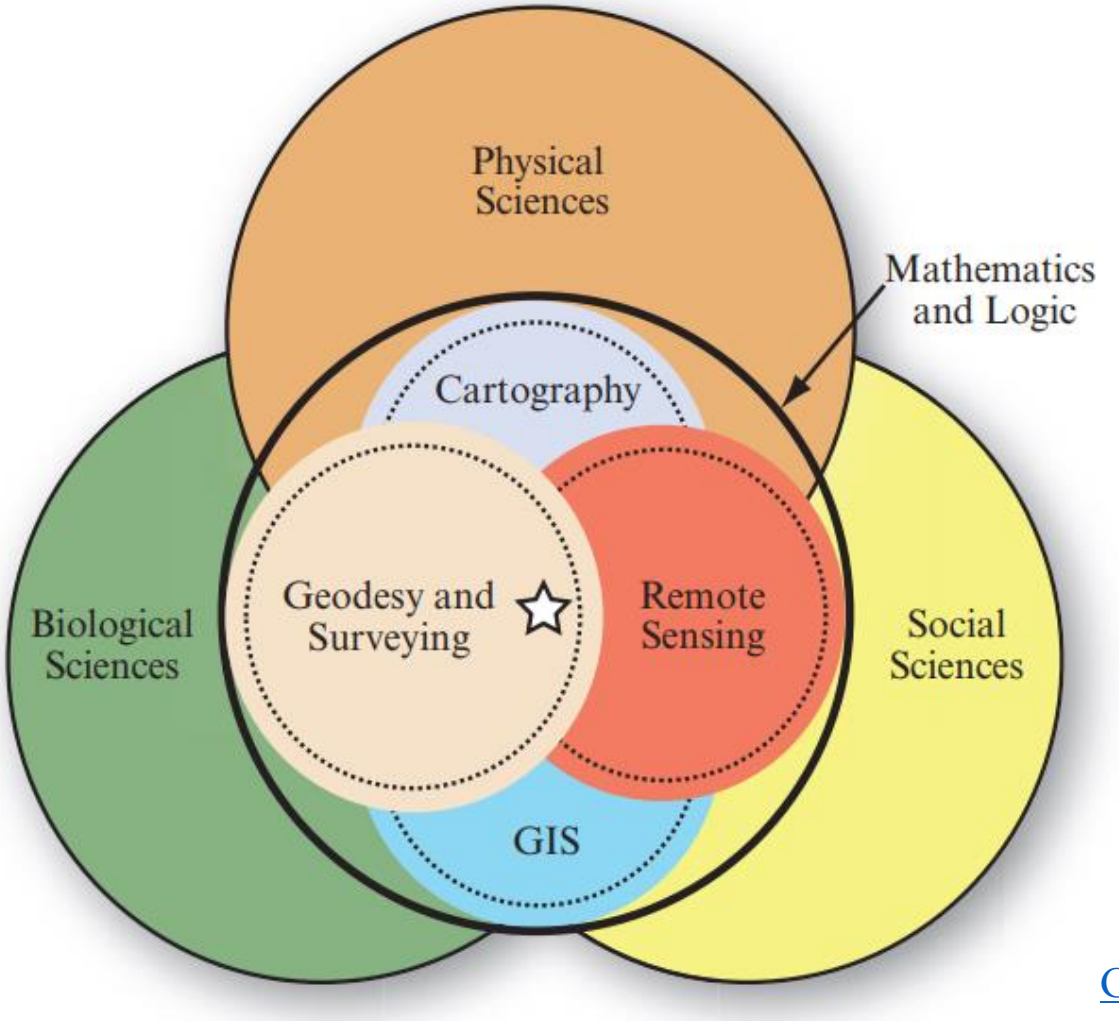
Learning outcomes

- The familiarity with GIS concepts
- The skills of producing professional thematic maps with GIS software
- The ability to handle GIS data
- The capacity to run spatial analysis regarding GIS applications

Course review



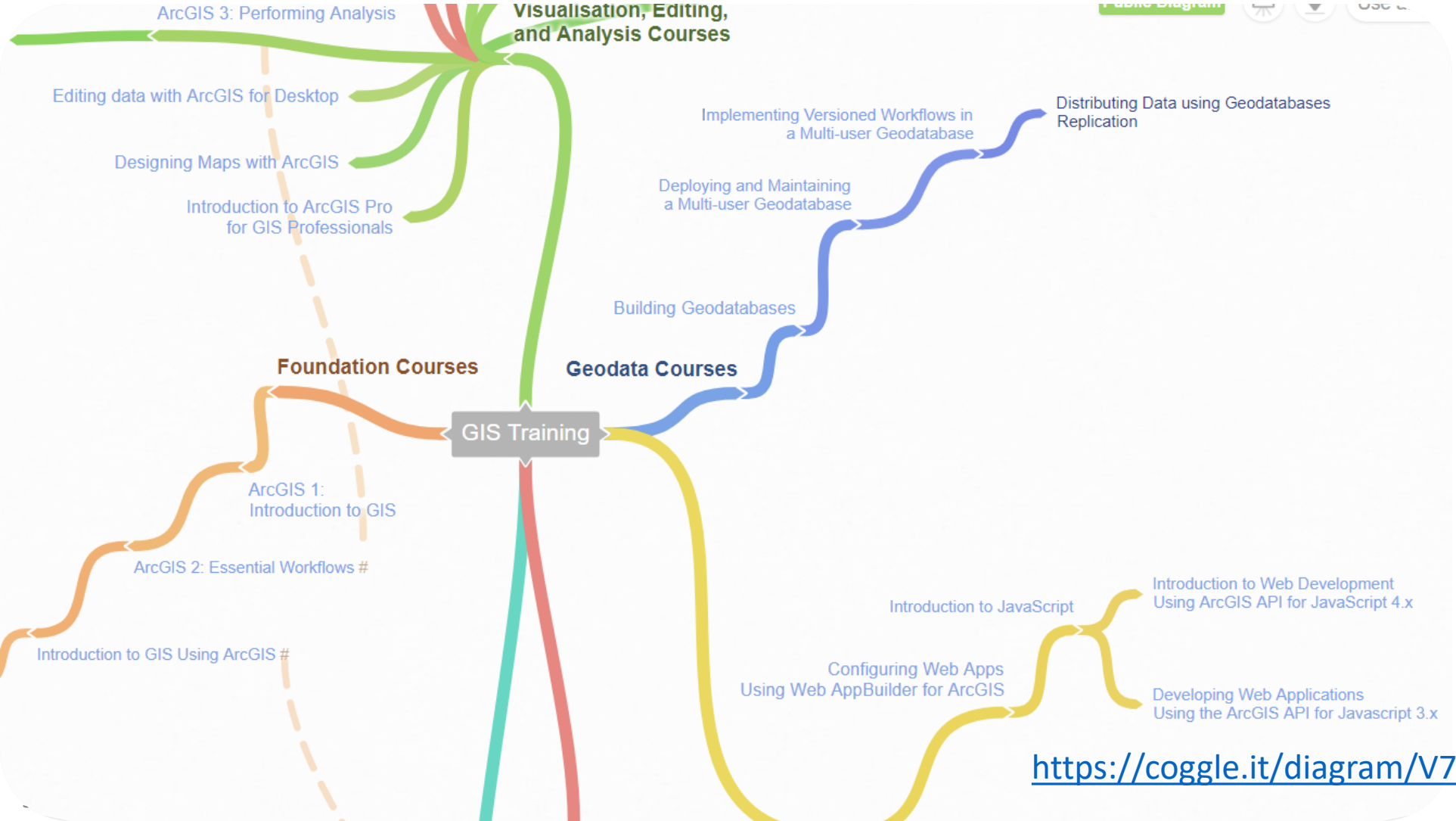
The geospatial field

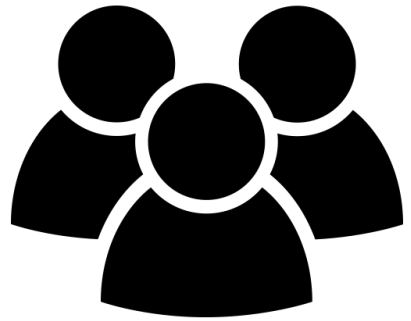


Jensen (2016)

[Geospatial Technology (GIS) and 4th Industrial revolution – YouTube]

GIS learning path





GIS specialists

GIS scientists

https://coggle.it/diagram/V7y_sEMcVU1E4Ot0/t/gis-training

GIS-related courses

GIS Courses

GE2215 - Introduction to GIS
GE3238 - GIS Design and Practices
GE3216 - Application of GIS and Remote Sensing
GE3252 - Cartography and Geovisualisation
GE4214 - Remote Sensing of Environment
GE4240 - Spatial Decision-Making
GE4241 - Spatial Health
GE5223 - Introduction to Applied GIS
GE5226 - GIS Applications
GE5219 - Spatial Programming
GE5225 - Thesis Planning and Implementation
GE5227 - Internet GIS
GE5228 - Spatial Big Data & Analytics
GE5230: Geospatial Statistics and Visualization (coming soon)
GE5231: Geospatial Machine Learning (coming soon)
GE6211 - Spatial Data Science
GE6225 - GIS Research Thesis
GE6226 - GIS Research Project
…

https://fass.nus.edu.sg/geog/undergraduate-modules/

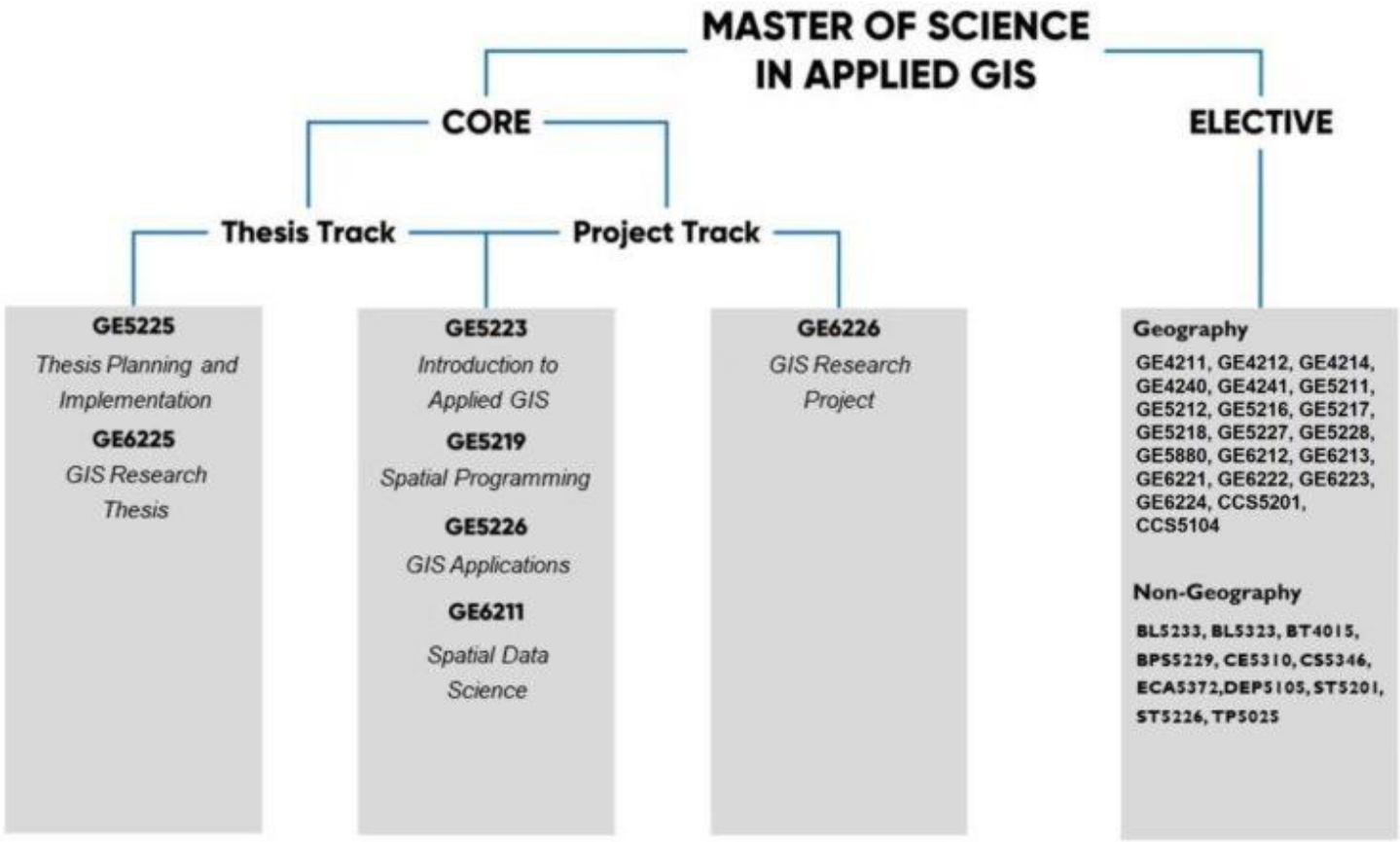
https://fass.nus.edu.sg/geog/graduate-modules-all-modules/

https://fass.nus.edu.sg/geog/msc-in-applied-gis/

only

GIS related graduate courses

https://fass.nus.edu.sg/geog/msc-in-applied-gis/



Exam

WEDNESDAY 27 NOVEMBER 2024 5PM

Students need to be present on campus for the final exam. For exam venue and seat number, please check EduRec about 1 week before the exams start

Take note

- Individual: 10 Multiple Choice Questions + 4 Written questions (closed book)
- Calculators are not needed. Calculators are not allowed.
  - There will be no questions about math, calculations, and algorithms.
  - However, you should understand concepts, the principles of the methods introduced in the lectures and think about their applications. Remember to check the URLs provided in the slides
- Exam venue will be informed by RO directly to you
- You will have to bring your matric card to the exam site. Mobile phones are also not allowed.

Exam scope

MCQ (testing your understanding of the content of the slides)

Q1: Lecture 2

- Basics of GIS data model
- Vector data model
- Compression of vector data
- Topological relations

Q2: Lecture 3

- Concept of the raster data model
- Elements of the raster data model

Q3: Lecture 4

- Types of maps
- Symbolization
- Classifying features

Q4: Lecture 5

- Map projections

Q5: Lecture 6

- Transformation method
- Control points
- Root Mean Square error
- Resampling (no need to remember the algorithms)

Q6: Lecture 7

- Topological errors and editing
  - Topology rules

Q7: Lecture 8

- Basics of attributes
- Insights into relational model

Q8: Lectures 2, 3, 9, and 11.

- Vector data and Vector overlay analysis
- Interpolation

Q9: Lecture 10

- Raster analysis functions

Q10: Lecture 11

- Point Pattern Analysis
- Spatial Autocorrelation

Written questions:

Q11 and Q 12: Vector and Raster data analysis (lectures 9 and 10 and lab 5)

- Testing your understanding of the analytic methods and their applications. No need to answer the step-by-step software operations, but you should familiarize yourself with the general workflows.

Q13: Spatial Reference and Coordinate Systems

Q14: No hint (take the challenge), but within the scope of the MCQs above.

Sample MCQs

1. Which of the following is not true? [Correct answer: ?]
   (a) An earth ellipsoid approximates the shape and size of the earth.
   (b) A geoid simplifies the true shape of the Earth's surface.
   (c) A projected coordinate system must have a datum.
   (d) The origin of a local datum adopts planar coordinates.
   (e) SVY21 projected coordinate system adopts Transverse Mercator projection.

2. Topology alone can be used to _____. [Correct answer: ?]
   (a) find the neighboring land parcels within a specific radius
   (b) identify undershoots in a street layer
   (c) find all the canteens in NUS
   (d) All of the above
   (e) (b) and (c)

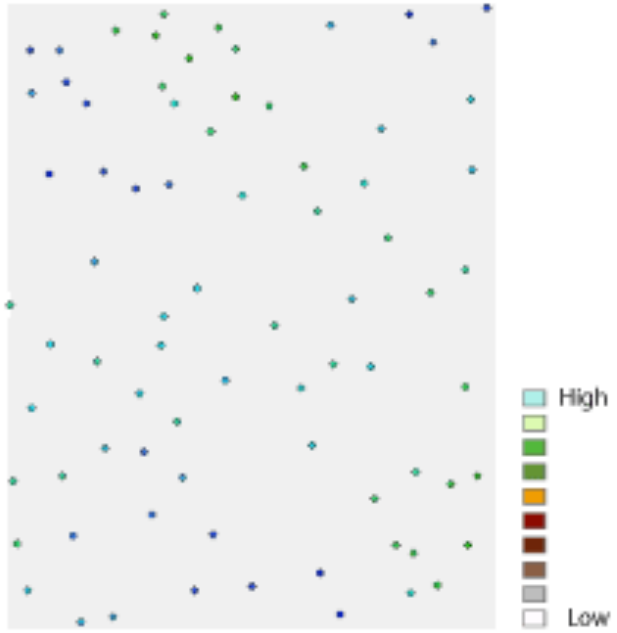
Sample MCQs

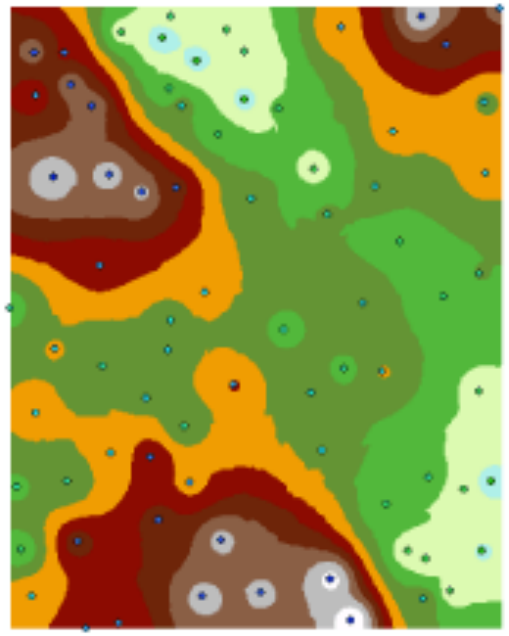
1. Which of the following is not true? [Correct answer: d]
   (a) An earth ellipsoid approximates the shape and size of the earth.
   (b) A geoid simplifies the true shape of the Earth's surface.
   (c) A projected coordinate system must have a datum.
   (d) The origin of a local datum adopts planar coordinates.
   (e) SVY21 projected coordinate system adopts Transverse Mercator projection.

2. Topology alone can be used to _____. [Correct answer: d]
   (a) find the neighboring land parcels within a specific radius
   (b) identify undershoots in a street layer
   (c) find all the canteens in NUS
   (d) All of the above
   (e) (b) and (c)

A sample written question

- For creating a map of air temperature readings at the weather-station level in Singapore using GIS, which data model introduced in this course will you use? Why? Please also describe how to create such a map.





Interpolated Raster layer
See lecture 11

Just write concisely, no need long essay, no need to write step-by-step software operations

https://pro.arcgis.com/en/pro-app/latest/tool-reference/spatial-analyst/understanding-interpolation-analysis.htm

Student Feedback Exercise:

Your Voice Matters!

Provide your feedback now >>

https://blue.nus.edu.sg/blue/

Student Feedback Exercise:

Your Voice Matters!

Be Constructive

Comments on your learning experience increase the value of your feedback.

Be Specific

Provide examples of how you think your teacher or the way the module is organised have helped (or not helped!) your learning.

Be Considerate

Improper language or personal comments are highly inappropriate, and undermine your feedback. Abusive comments are unacceptable.

Student Feedback Exercise:

Your Voice Matters!

Your feedback counts

Your constructive feedback helps professors to improve their modules and is one source of evidence for the university's appraisal decisions.

It’s confidential

Your professors will never see your name. They will only get an aggregate report after the exam results have been released.

It’s quick

Complete your module feedback on campus, at home, or on the go! It is easy to use and mobile compatible.

Thank You! Good luck!