

Mapping a Traditional GIS Course Onto a Quest-Based Learning Platform

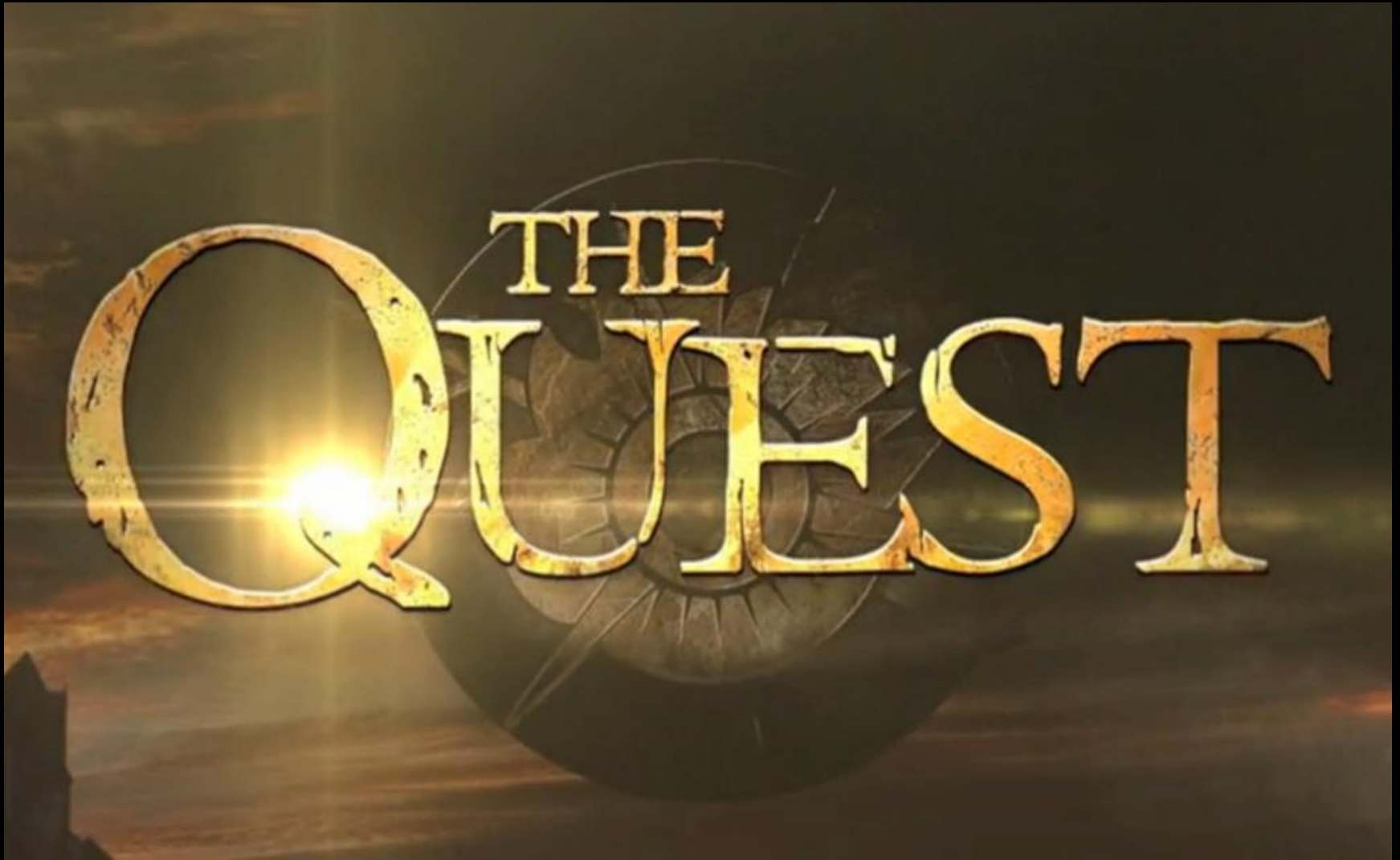
Michael N. DeMers

NMSU Geography

New Mexico Geographic Alliance



WHY QUEST-BASED LEARNING



BADGES



LEVELING UP



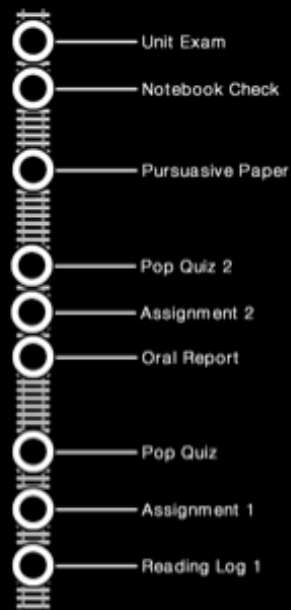
LEADERBOARD

Leaderboard Search Results

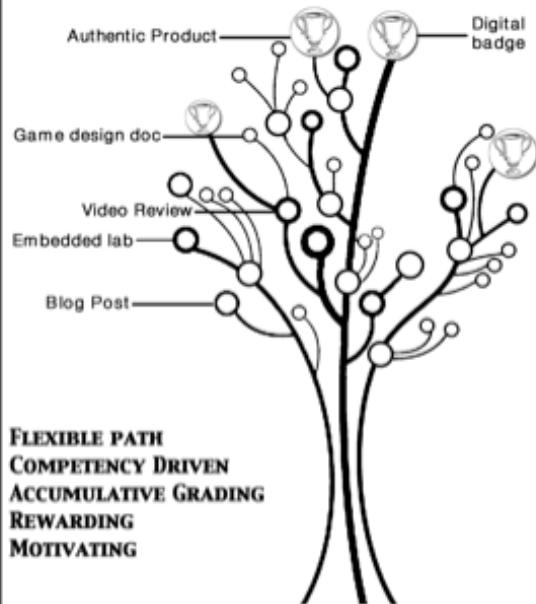
Results: Minimum Level: 1, Maximum Level: 50, Quests Completed Leaderboard last updated Feb 09 (1 day 0 hours 32 minutes ago)

Rank	Name	Server	Race	Class	Level	Quests Completed
1	Charnicc	Permafrost			50	2,069
2	Labatyd	Runnyeye			47	2,032
3	Claiomh	Permafrost			50	2,024
4	Feminine	Sebilis			50	2,022
5	Everxxxxxxxxxxx	Sebilis			49	1,997
6	Nanthera	Everfrost			50	1,831
7	Nanthera	Innovation			50	1,827
8	Eligh	Everfrost			45	1,793
9	Maltheas	Lucan DLere			34	1,775
10	Igloo	Splitpaw			50	1,697

Grade book VS Quest-based



FIXED PATH
ACTIVITY DRIVEN
REDUCTIVE GRADING
PUNITIVE
UNMOTIVATING



FLEXIBLE PATH
COMPETENCY DRIVEN
ACCUMULATIVE GRADING
REWARDING
MOTIVATING



Group

0 | 0

Rank

0 | 0

GIS Quester



Available 1

In Progress 0

Completed 0



QUESTS

0



REWARDS

0



GROUP



ANNOUNCEMENTS

0

GROUP MANAGER

QUEST BUILDER

REWARD BUILDER

QUEST APPROVER



Intersecting Activity Spaces & Intersection Overlay

200

-- mins

No Rating

Conceptual

No end date

A quest in support of Chapter 4, learning objective 7. Specifically, this supports explanation of intersecting activity spaces and intersection overlay.

Tags: [Activity Spaces](#) | [Overlay](#) | [Cartographic Overlay](#) | [Set Theoretic Overlay](#)

Available as of: October 15, 2014

View Details



Edit Quest



Delete Quest

[View Public Comments](#)

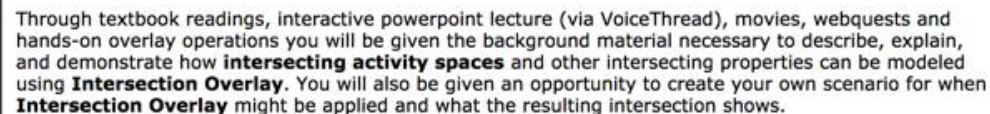


No Rank Yet

0 | 0

0 | 0

Visit the Quest Armory





Group

0 | 0

Rank

0 | 0

GIS Quester



Quest Details



QUESTS

0



REWARDS

0



GROUP



ANNOUNCEMENTS

0

GROUP MANAGER

QUEST BUILDER

REWARD BUILDER

QUEST APPROVER



Intersecting Activity Spaces & Intersection Overlay

200

-- mins

No Rating

Conceptual

No end date

Description

Report



Edit Quest



Delete Quest



Through textbook readings, interactive powerpoint lecture (via VoiceThread), movies, webquests and hands-on overlay operations you will be given the background material necessary for you to be able to describe, explain, and demonstrate how **intersecting activity spaces** and other intersecting properties can be modeled using **Intersection Overlay**. You will also be given an opportunity to create your own scenario for when **Intersection Overlay** might be applied and what the resulting intersection shows. To earn bonus experience points you will be given an opportunity to provide output from you laboratory with a brief explanation of the intersection overlay process.

Submission Details

Here's what to submit

Part 1: Use your VoiceThread account to produce a narrated set of PowerPoint slides that provide the following.

1. Illustrate, annotate, and narrate a slide that describes what shared activity space is.
2. Illustrate, annotate, and narrate a slide that describes non-activity space related spatially correlated distribution phenomena.
3. Illustrate, annotate, and narrate a slide that describes how Intersection Overlay works in vector-based GIS.
4. Illustrate, annotate, and narrate a slide that describes how Intersection Overlay works in raster-based GIS.

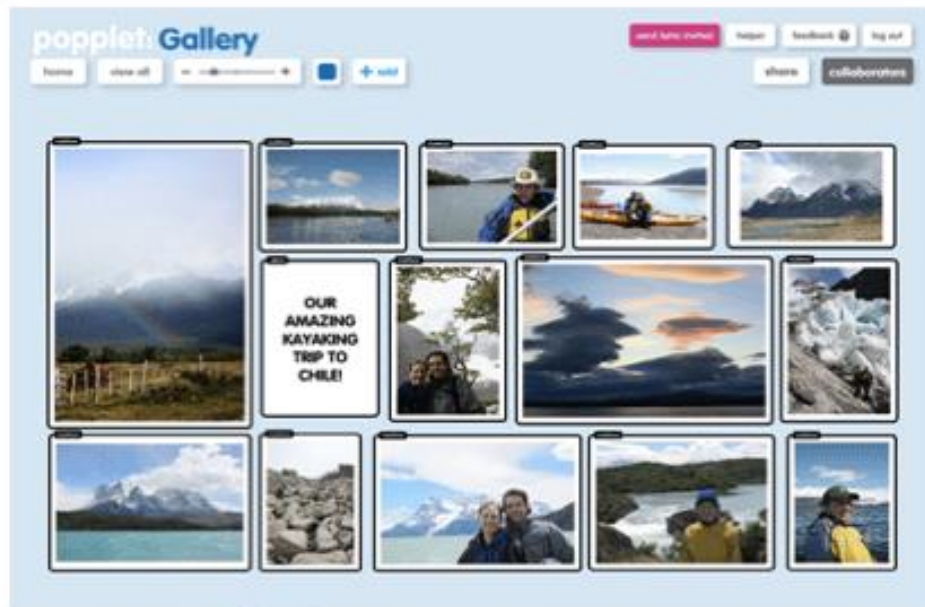


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What is Popplet?

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QUESTS

3DGameLab - Mr. Suter's Level 6- Secret Planning Document.xlsx

Search in Sheet

Home Layout Tables Charts SmartArt Formulas Data Review

Edit Font Alignment Number Format Cells Themes

Paste Fill Arial 10 Bold Italic Underline Conditional Formatting Insert Delete Format Themes

A9

"Level 6" Official Secret Planning Document (6th grade Comp Tech)

Quest Name	approval	d Time	XP	Prereq	Type	Details	Category	Type	Standards	Tags
Intro										
x Welcome to Level 6	auto	5	25	None	Solo	respond to prompt about fav web tools/sites	Player*	Watch/Create		
x Be a Blogger	x	10	25	Welcome to Level 6	Solo/Coop	write a blog post, submit a working link	Player*	Watch/Create		
x The easiest one point quest ever!	x	1	1	Welcome to Level 6		Experience getting a quest returned, then re-submit				
Pixlr										
x Pixlr-O-Matic	x	20	20	Be a Blogger	Solo	web image edit, posted link	Player*	Watch/Create		
x Pixlr Express	x	15	25	Be a Blogger	Solo	web image edit, posted link	Player*	Watch/Create		
x Pixlr Editor	x	20	30	Pixlr-O-Matic	Solo	web image edit, posted link	Player*	Watch/Create		
x Pixlr Slightly Advanced 1	auto	30	30	Pixlr Editor	Solo	Resize lg pics, text with layer styles, clone stamp	Player*	Watch/Create		
x Pixlr Slightly Advanced 2	x	30	30	Pixlr Advanced 1	Solo	text w/ stroke, gradient, tilt shift	Player*	Watch/Create		
bubbl.us										
x Bubbl.us - About You										
x Bubbl.us - Book Review										
Digital Photography										
x Shoot, Transfer, Edit, Post	x	20	35			getting the pictures from camera to PC to Blog				
x My Reflection	x	15	25			Find a reflective surface to take a self mug shot				
x Stacked	x	35	30			a video/photo technique that makes items appear to be stacked on top of one another				
x Rule of Thirds	x	30	20			framing a good shot/cropping an existing shot				
iPad										
x iPads...Serious Fun		15	5		Solo	Review rules, personal statement				
iPad Protocol		10	10			Sign Out, Clean Screen, Connect Power, Sign In				
x iPad: Dropbox Photo Transfer	x	25	15			create dropbox acc't, transfer pics, logout.				
iPad Tips and Tricks 1		20	15		Solo	wifi connection/switching, sleep/wake vs shutoff, ending apps				
iPad Tips and Tricks 2		20	15		Solo	screen shot, organizing apps in folders,				
iPad App Evaluation	x	15	15							
iPad Dream App	x	15	15							

Normal View Ready Sum = 0

REWARDS LIST

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Search in Sheet

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I36

	A	B	C	D	E
	Name	Type	XP	Other Rewards	Conditions
2					
3	AWARDS (manual)				
4					
5	So Speedy!	Award	10		
6	Above and Beyond You Went!	Award	15		
7	Bug Squasher	Award	20		Be the FIRST to find and submit the repeatable Bug Eater quest.
8	Super User	Award			"You must have done something AMAZING. These don't get awarded too often." (student technical skill usually)
9	Tier 1 Support	Award	15		You made extra effort to help those in need. Thank you!
10	Tier 2 Support	Award	15		You help people...A LOT. Not just for a few days, but nearly daily for an extended period of time.
11	Milestone	Award	10		Congratulations! You are lucky enough to have completed a quest correctly that was either the 500th or 1000th Quest!
12					
13	ACHIEVEMENT (automatic)				
14	GIS Novice (level 0)	Achievement	0		
15	Map Reader	Achievement	0		Entry requires completing all three course introduction quests.
16	GIS technician	Achievement	0		Entry requires completion of at least 6 level I quests (1200 experience points)
17	GIS Journeyman	Achievement	0		Entry requires completion of 4 level II quests or 3 level II quests and 2 level I quests not yet completed
18	GIS Analyst I	Achievement	0		Entry requires completion of 3 level III quests
19	GIS Analyst II (modeler)	Achievement	0		Entry requires completion of 6 level III quests
20	GIS Supervisor	Achievement	0		Entry requires completion of all 6 level IV quests
21					
22	BADGE (automatic)				
23	VoiceThread Expert	Badge	20		Consistent high quality VoiceThreads
24	ArcGIS Officianado	Badge	10		ArcGIS exercises used with great effect and explanations of output of high quality
25	Sweet Elite	Badge	50		Complete EVERY QUEST
26					
27					
28					
29					
30					
31					

Normal View Ready Sum = 0

RANKS

3DGameLab -Fundamentals of GIS Secret Planning Document.xlsx

Search in Sheet

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E21

	A	B	C
1	Name	XP	Unlocks
2	GIS Novice		All content level 0 quests (course introduction)
3	Map Reader		Level 1 Quests Introduction to the topic)
4	GIS Technician		Level 2 Quests (Computer Aspects)
5	GIS Journeyman		Level 3 Quests (Editing, Manipulation, and Analysis)
6	GIS Analyst I		
7	GIS Analyst II (modeler)		Level 4 Quests (GIS project planning and design)
8	GIS Supervisor		ELITE quests (Quest designer, Geodesigner, etc.)
9			
10			
11			
12			

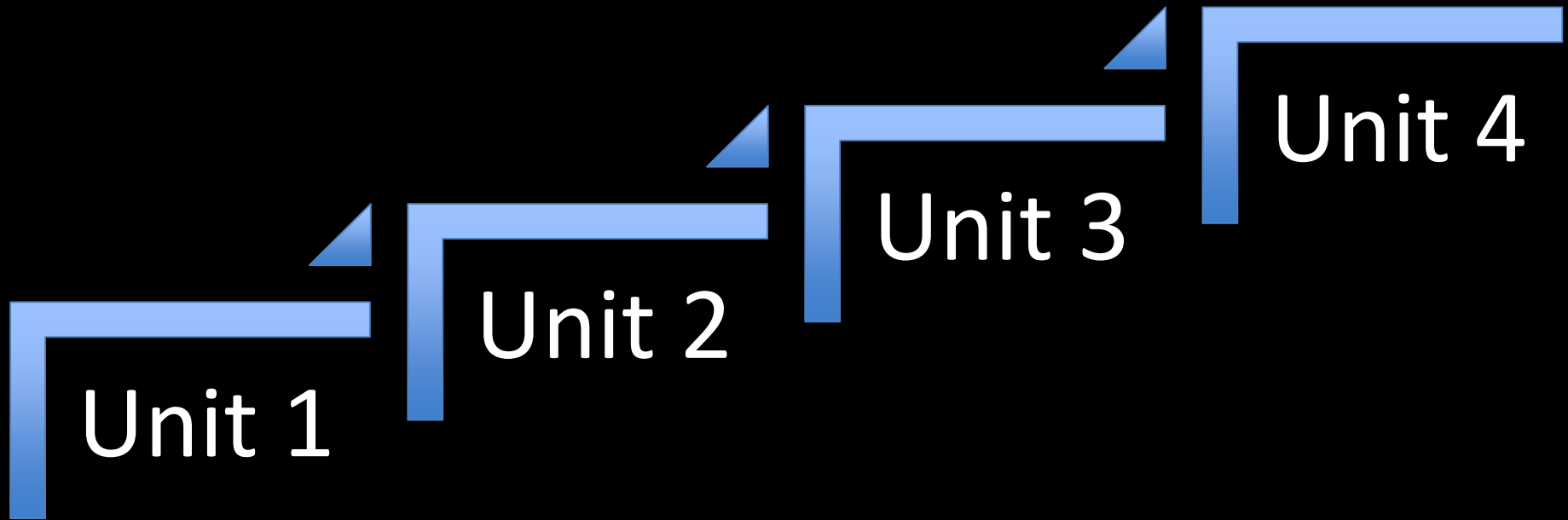
Normal View Ready

Questions Rewards List Ranks +

Textbook-Based Course Design

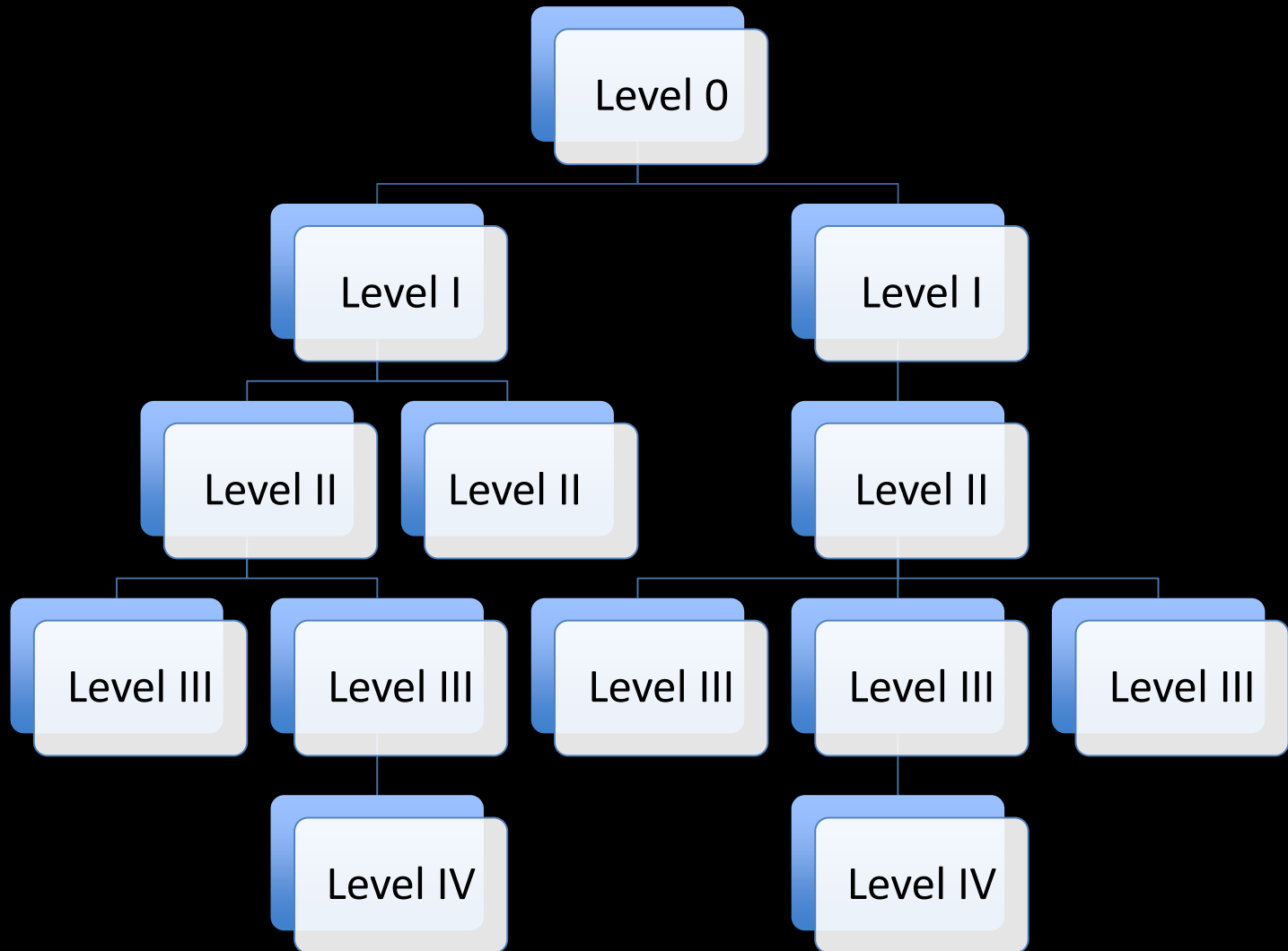
- Unit 1: Introduction
 - Intro to digital geography
- Unit 2: Digital geographic data and maps
 - Basic Geographic Concepts
 - Map Basics
 - GIS: Computer Structure Basics
 - GIS Data Models
- Unit 3: Input, storage and editing
 - GIS Input
 - Data storage and editing
- Unit 4: Spatial Analysis
 - Query and description
 - Measurement
 - Classification
 - Statistical Surfaces
 - Terrain Analysis
 - Spatial Arrangement
 - Map Overlay
 - Cartographic Modeling
- Unit 5: GIS output and design
 - Cartography and Visualization
 - GIS Design

Linear Flow (traditional course)

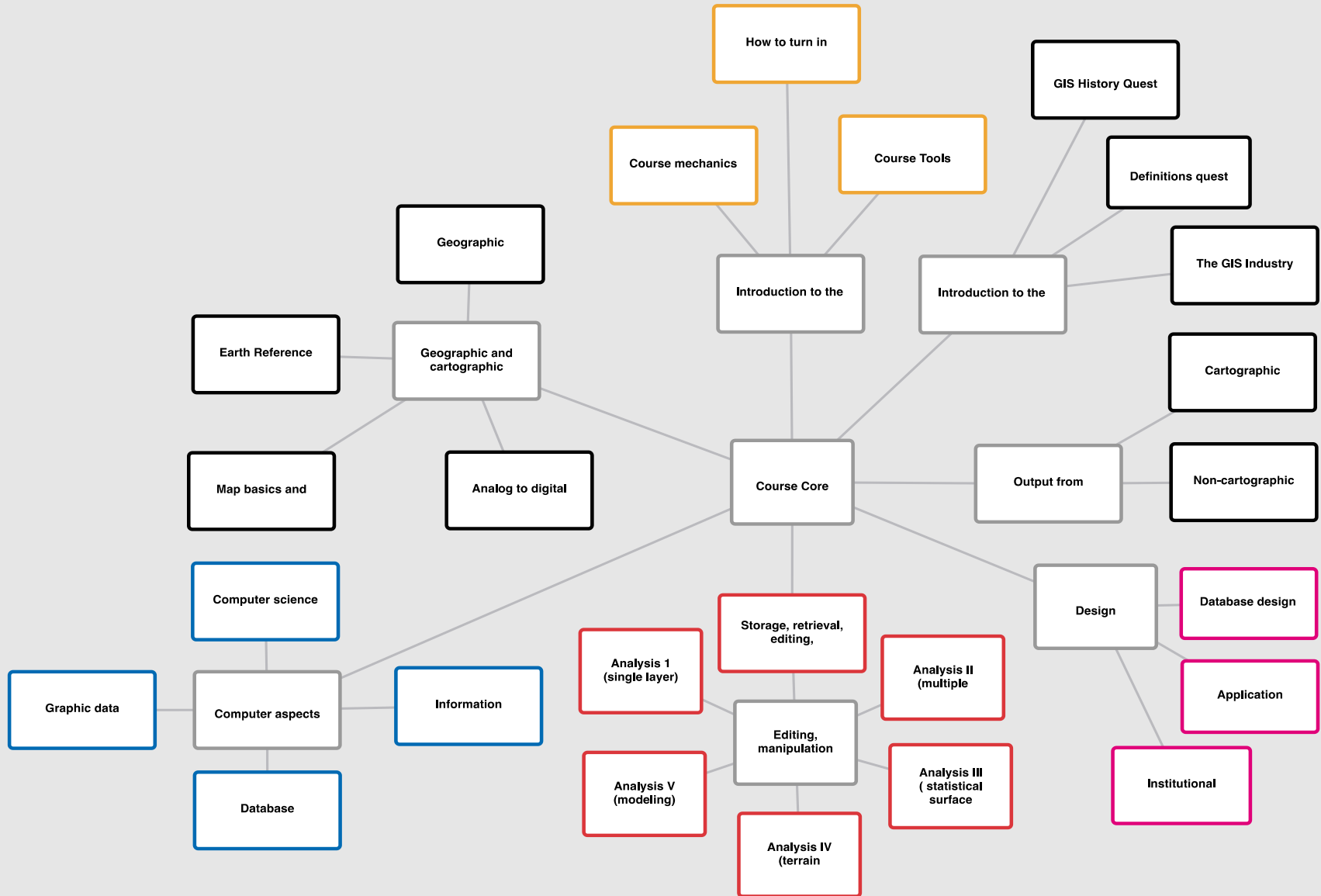


- Level 0: Course introduction
 - How to turn in assignments quest
- Level 1 Introduction to the topic
 - GIS History quest
 - Basic Geographic Definitions quest
 - The GIS Industry quest
- Level 1 Geographic and cartographic background
 - Geographic fundamentals quest
 - Earth reference system quest
 - Map basics and abstraction quest
 - Analog to digital conversion quest
- Level 1 Output from analysis quest
 - Cartographic output quest
 - Non-cartographic output quest
- Level II: Computer aspects
 - Computer science fundamentals quest
 - Graphic data representation quest
 - Information system quest
 - Database management quest
- Level II: Computer aspects
 - Computer science fundamentals quest
- Level III: Editing, manipulation and analysis
 - Storage, retrieval, editing, compilation quest
 - Analysis I (single layer) quest
 - Analysis II (multiple layer) quest
 - Analysis III (statistical surface) analysis quest
 - Analysis IV (terrain analysis) quest
 - Analysis V (modeling) quest
- Level IV: Design
 - Database design quest
 - Application design quest
 - Institutional design quest

Leveled (quest-based) with choice



Fundamentals of Geographic Information Systems



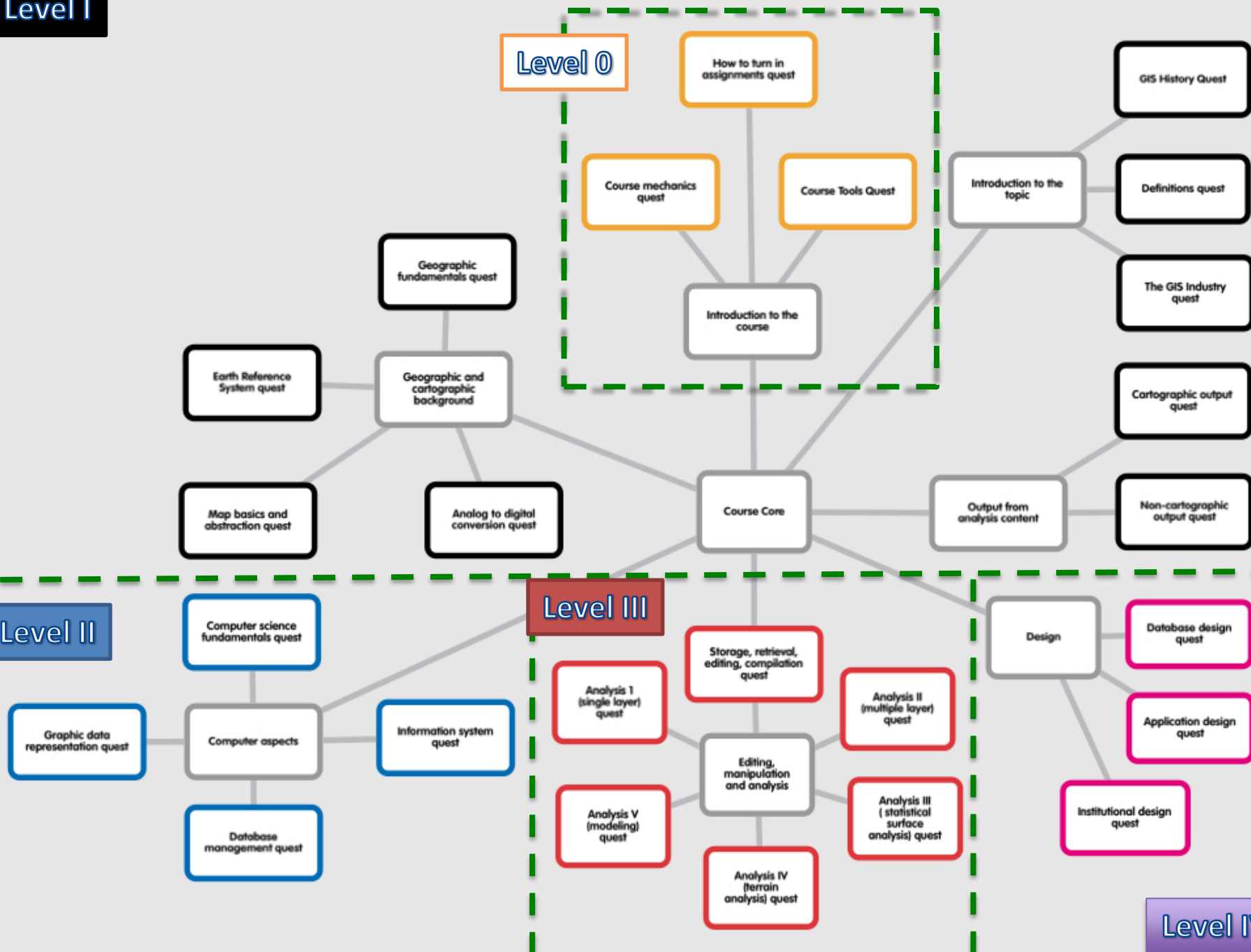
Level I

Level II

Level 0

Level III

Level IV



**How to turn in
assignments quest**

**Course mechanics
quest**

Course Tools Quest

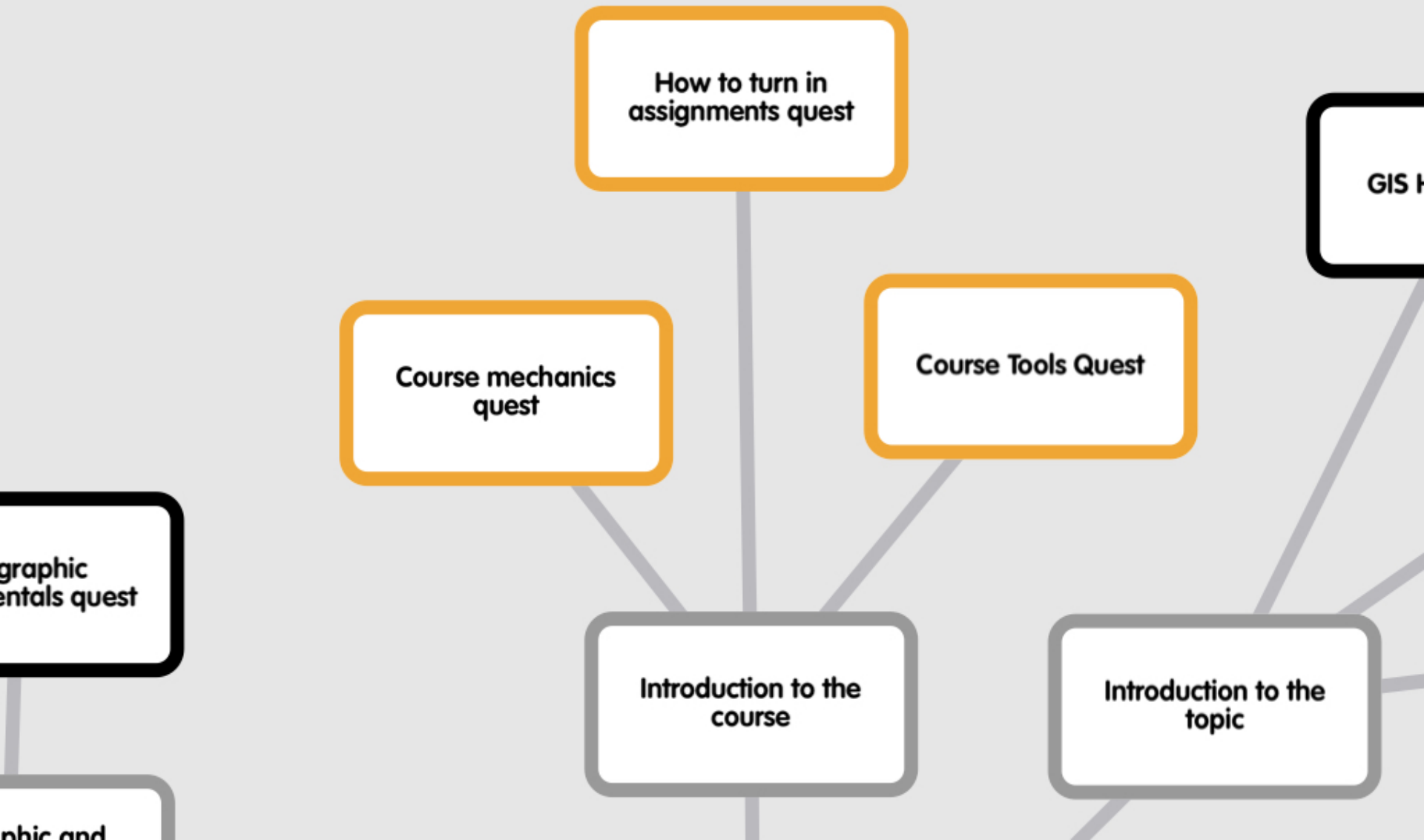
GIS H

**graphic
entals quest**

**Introduction to the
course**

**Introduction to the
topic**

phic and



How to turn in
assignments quest

Course Tools Quest

GIS History Quest

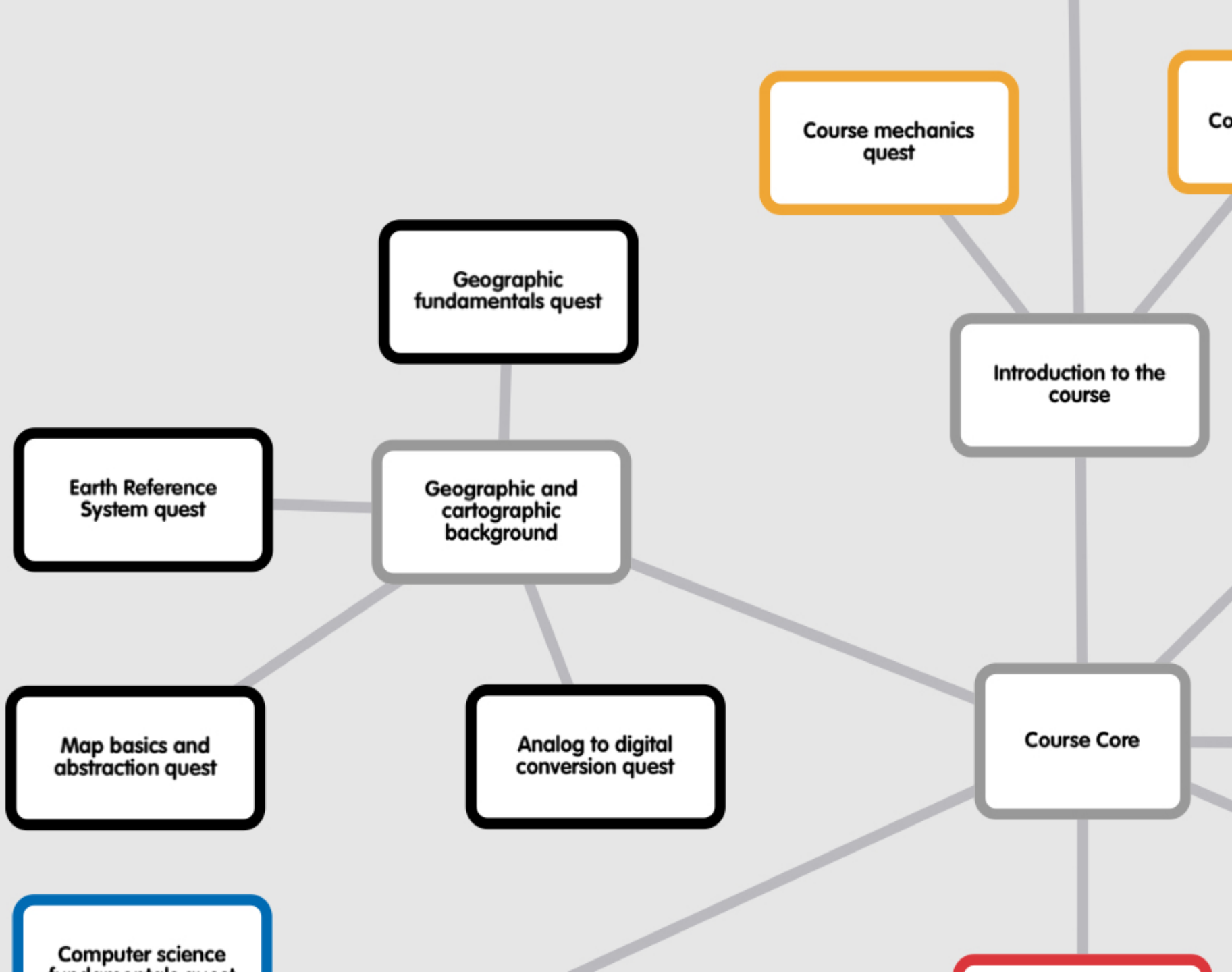
Definitions quest

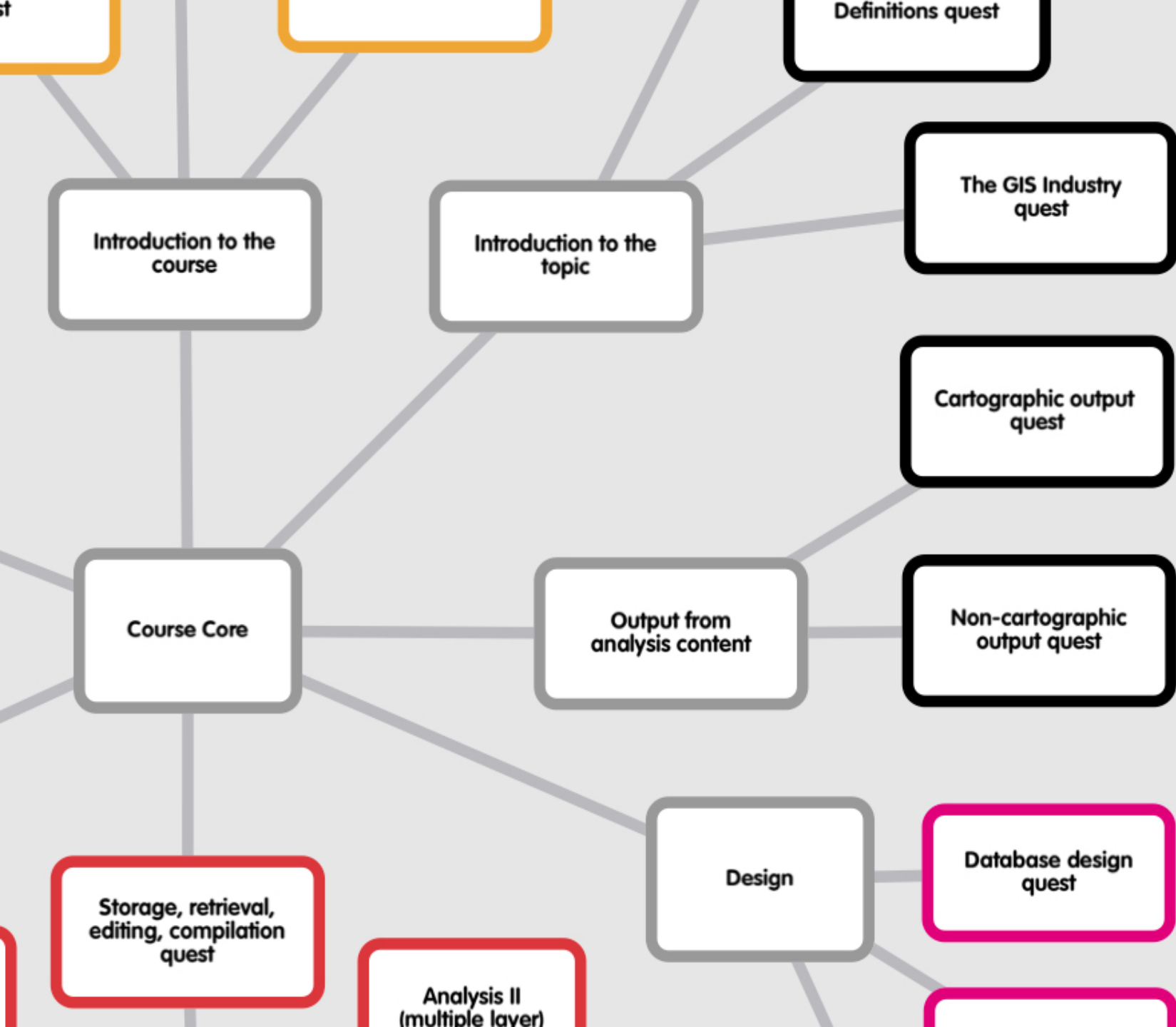
The GIS Industry
quest

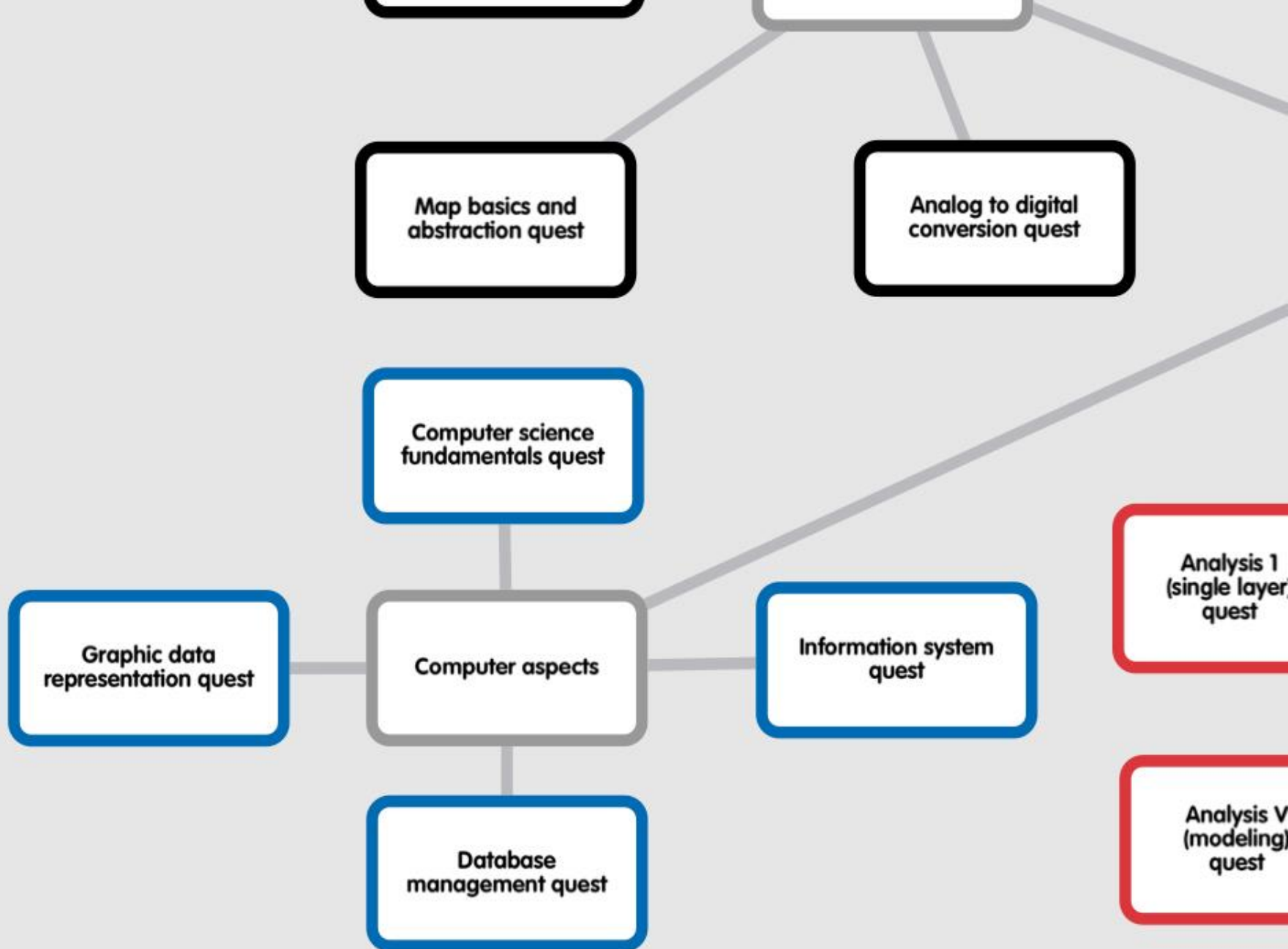
Cartographic output
quest

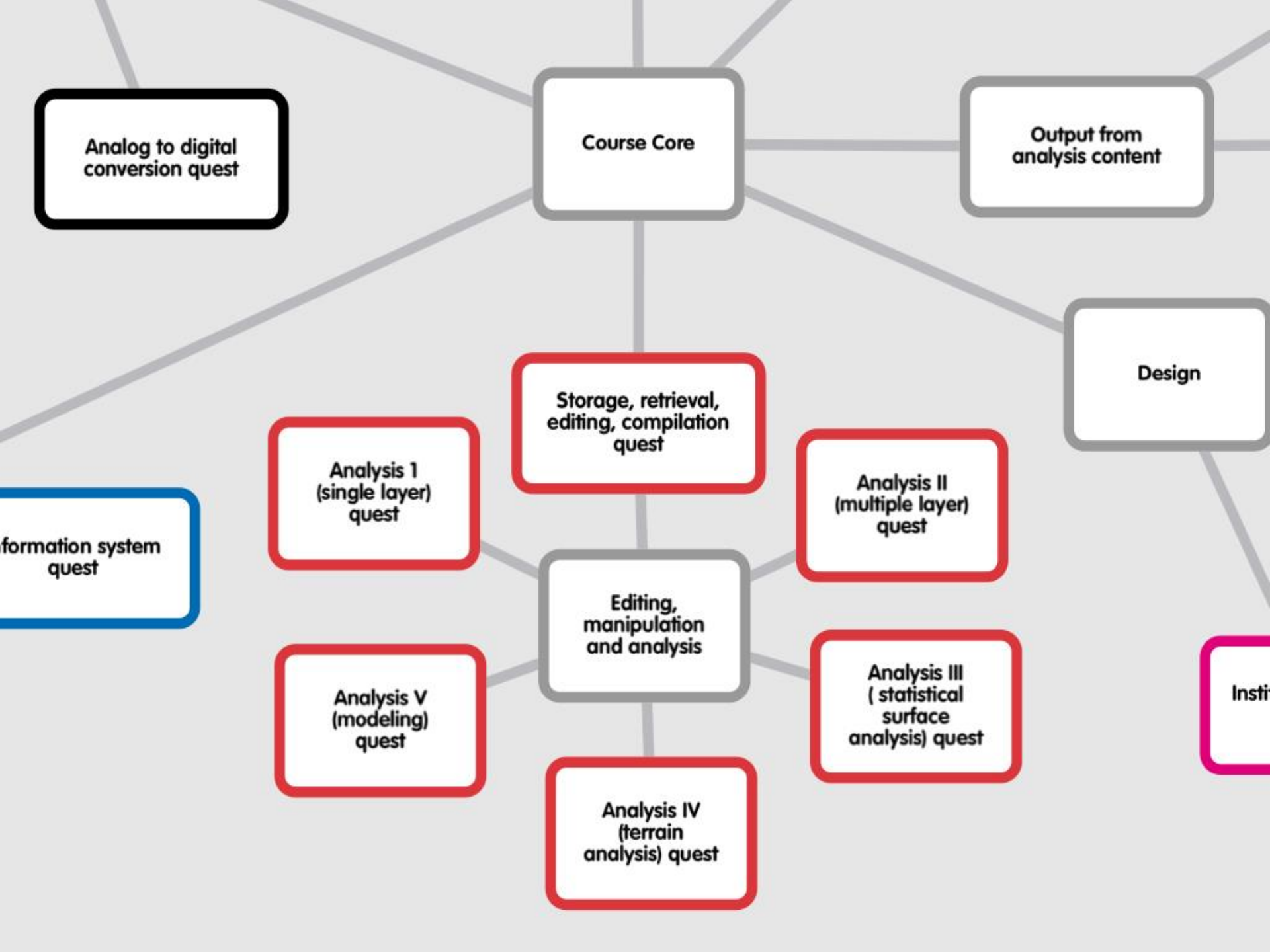
Introduction to the
course

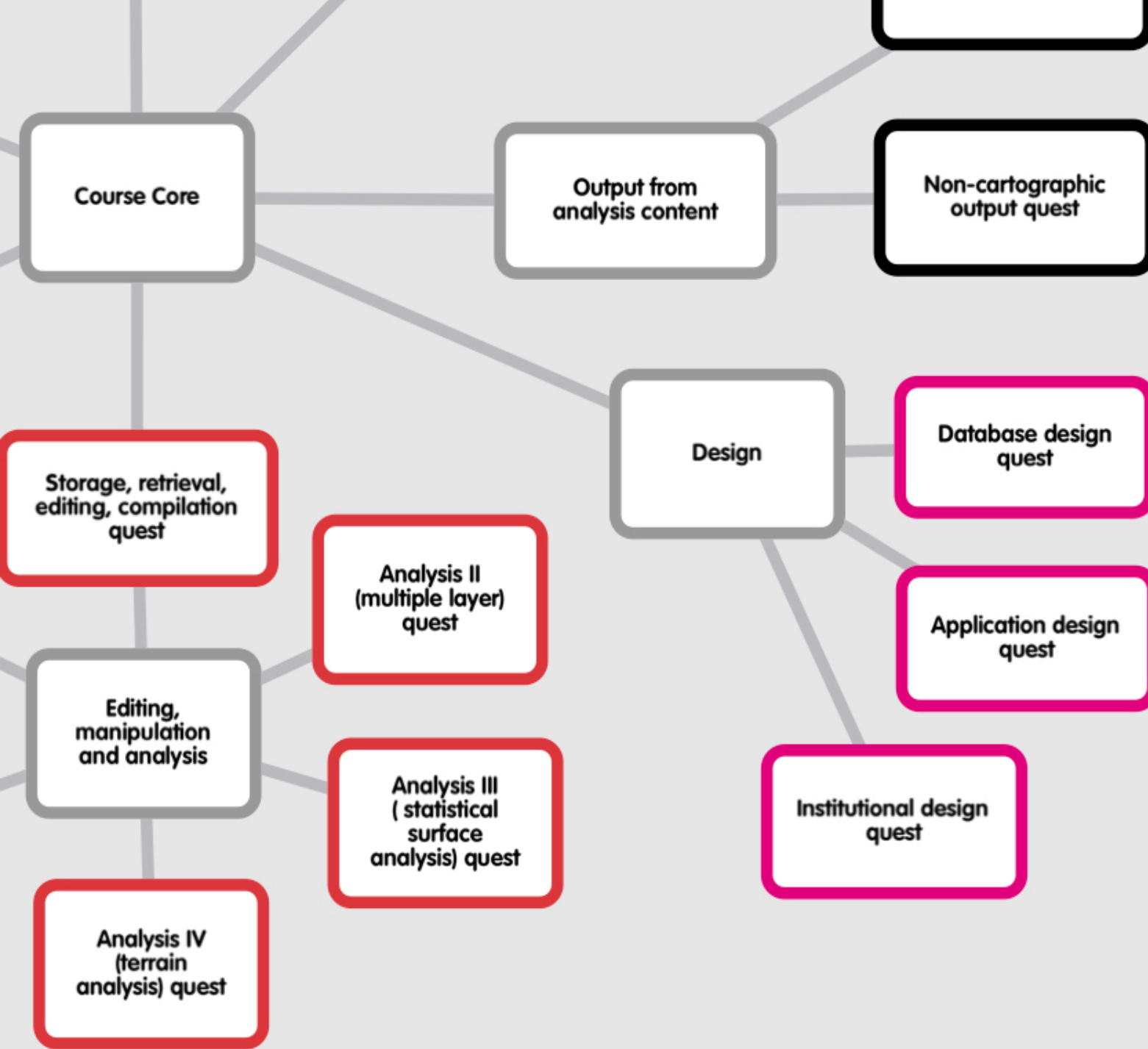
Introduction to the
topic













SUBTRACTIVE

ADDITIVE

100% (starting point) - A

0% - F

Life-long Learning

5000 points (for an A)

0 points

Traditional Grading Quest-Based Grading

expectations.

