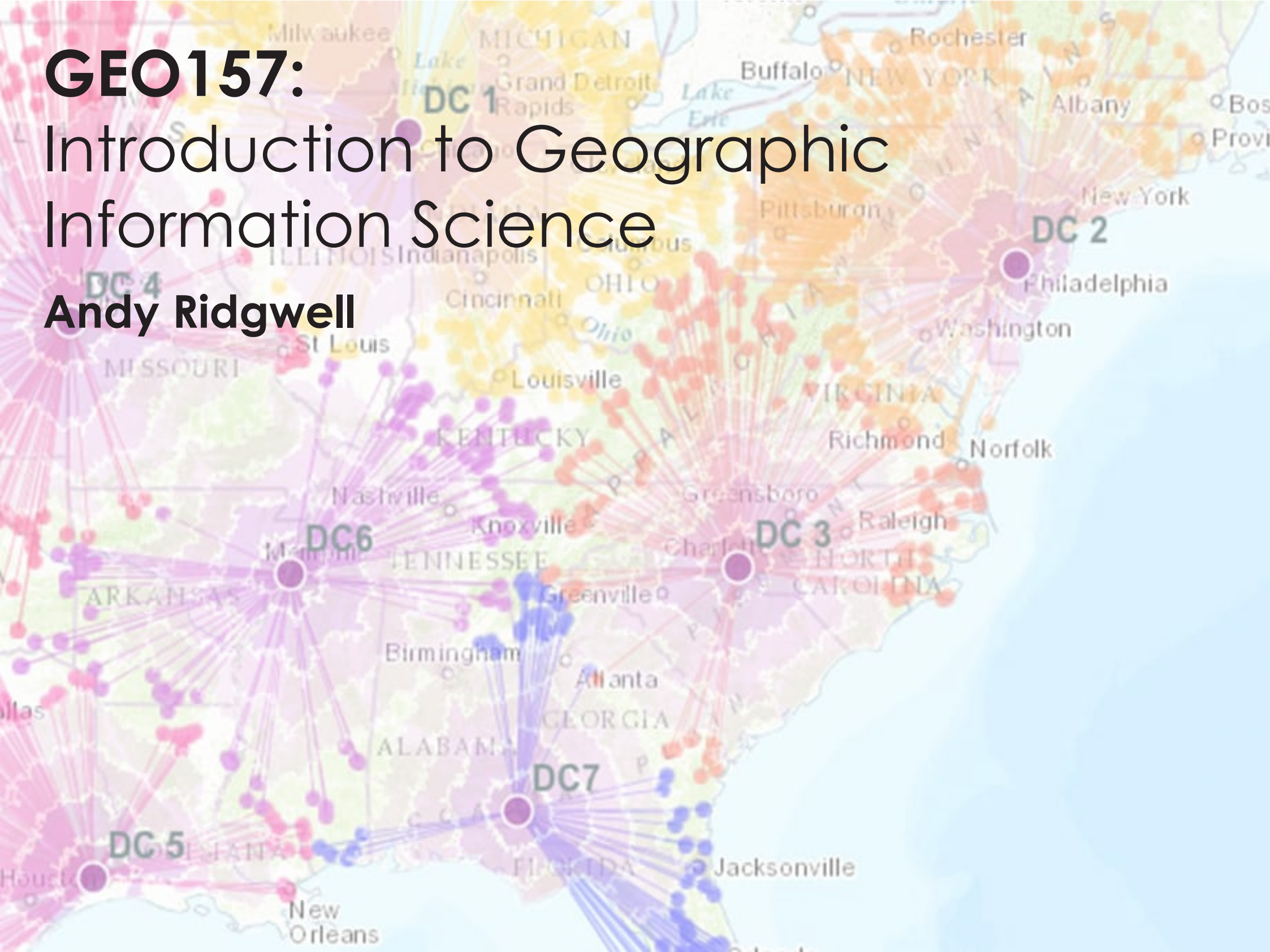# GEO157:
Introduction to Geographic Information Science

Andy Ridgwell

GEO157: aims

"This course will introduce you to the fundamentals of Geographical Information Systems, the Science behind them, and their practical applications. We will review and analyze geographic information systems, data structures, databases, and coordinate systems. The lectures emphasizes the concepts and design of GIS and the labs will give you hands-on training with a commonly used GIS software package: ArcGIS. The goal of the course is to provide you with a good base of GIS knowledge so that you will realize the potential of GIS and hopefully use it in your own research in the future. This course, more so than any other course offered at UCR, will give you the necessary skills to pursue a career as a GIS Analyst, which is a high demand position across a variety of fields."

As a result ... GEO157 has a focus on practical skills gained in computer lab work (and guided projects), and at the expense of 'theory' and lectures.
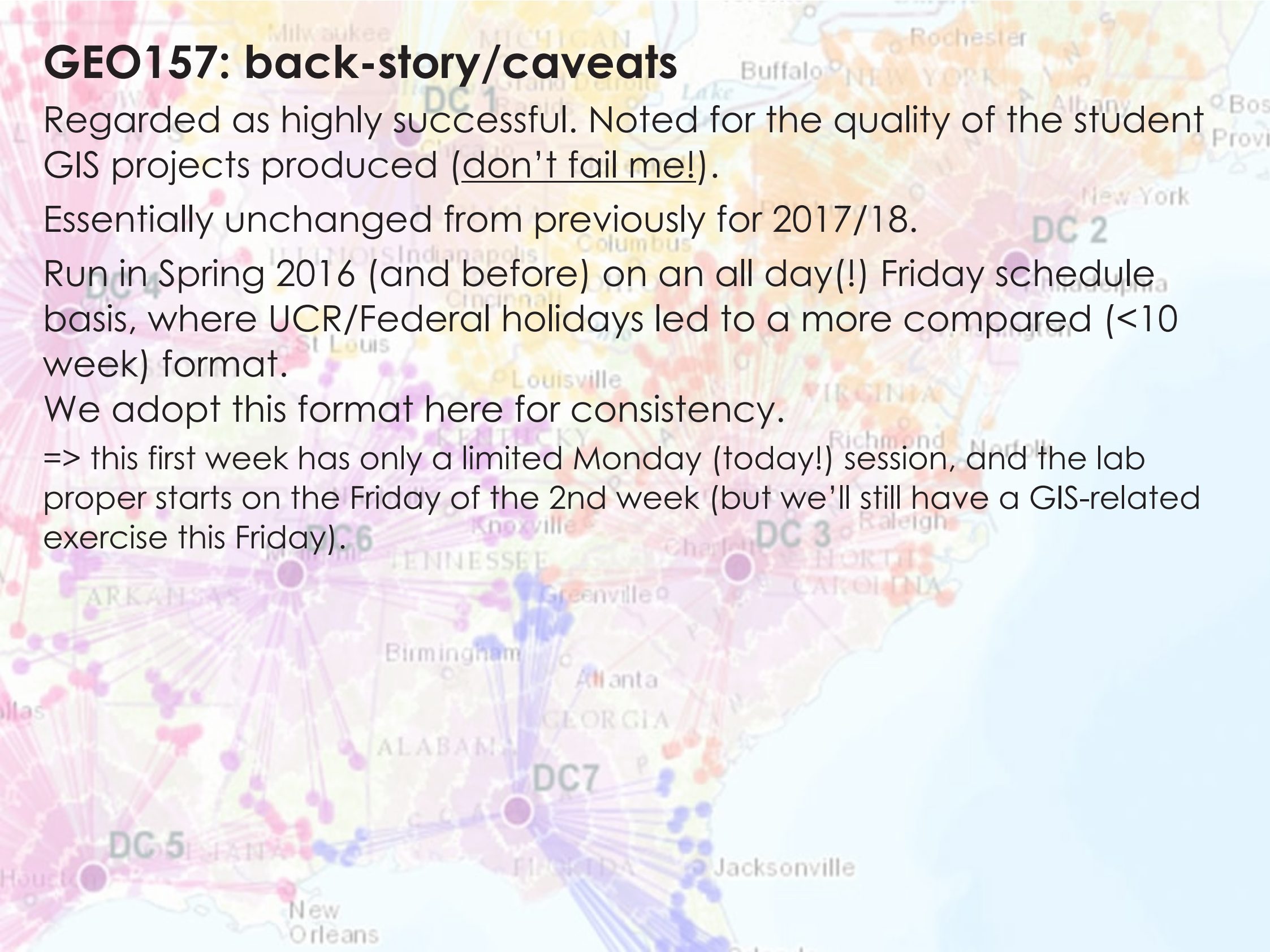
GEO157: back-story/caveats

Regarded as highly successful. Noted for the quality of the student GIS projects produced (don't fail me!).

Essentially unchanged from previously for 2017/18.

Run in Spring 2016 (and before) on an all day(!) Friday schedule basis, where UCR/Federal holidays led to a more compared (<10 week) format.

We adopt this format here for consistency.

=> this first week has only a limited Monday (today!) session, and the lab proper starts on the Friday of the 2nd week (but we'll still have a GIS-related exercise this Friday).
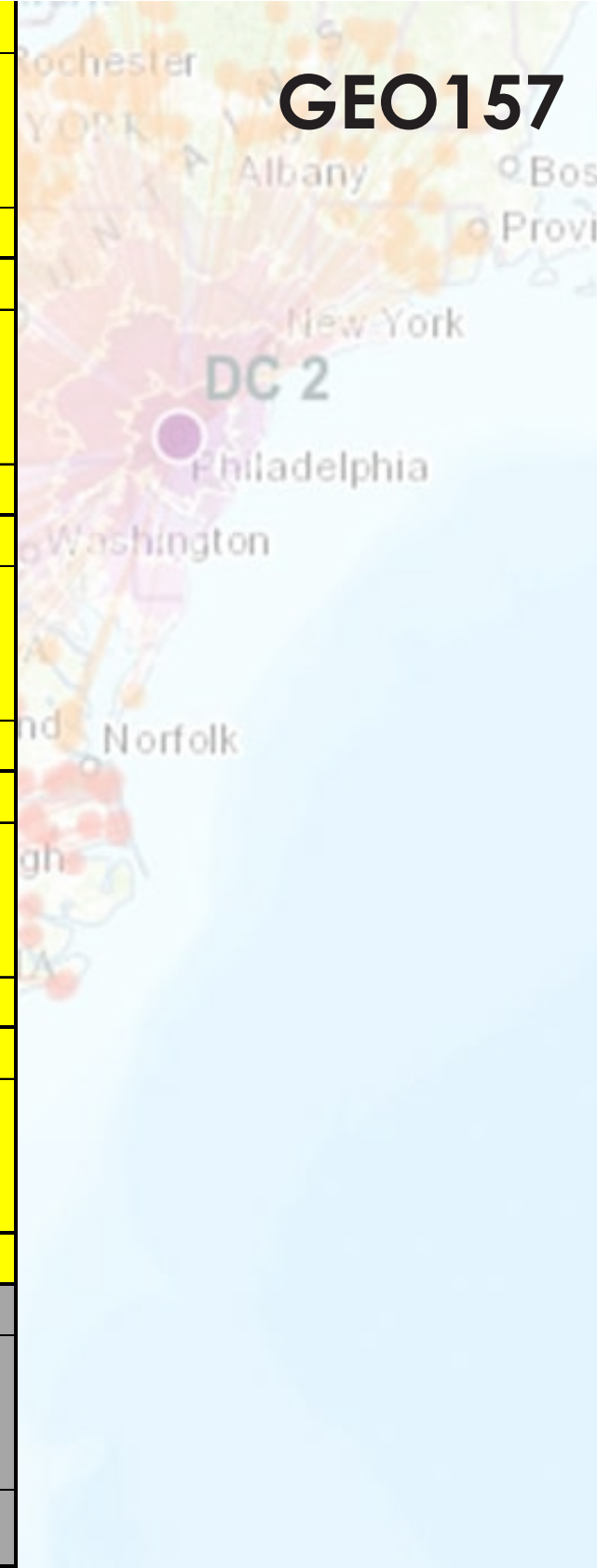
GEO157

WEEK	Monday am (1) Lecture A 09:10-10:30 Sproul 2225	Monday am (2) Lecture B 10:40-12:00 Sproul 2225	Monday Office Hours: 12-2 pm	Friday am LAB 09:10-12:00 Sproul 2225	Friday Exrta lab hours: 12-2 pm
(#1) 2nd / 6th April	**Course introduction** Course introduction and logistics. Laptop software installation.			**fake 'fieldwork' fun** Paper-based and web-based GIS-like problems.	
(#2) 9th / 13th April	**Lecture 1, Discussion** Chapter 1: What is GIS?	**Lecture 2** Chapter 2: Spatial data ___ Problem Set 1 (Ch. 1)		**Lab 1** Digitizing	
(#3) 16th / 20th April	**Worked problems** ___ Problem Set 1 due	**Lecture 3** Chapter 3: Spatial data modelling ___ Problem Set 2 (Ch. 2+3)		**Lab 2** GPS, Georeferencing, and Geocoding ___ Lab 1 due	
(#4) 23rd / 27th April	**Worked problems** ___ Problem Set 2 due	**Lecture 4** Chapter 4: Database management		**Lab 3** Interpolating weather ___ Lab 2 due	
(#5) 30th / 4th May	**Worked problems** ___ Oral presentations set	**Lecture 5** Chapter 5: Data input and editing ___ Problem Set 3 (Ch. 4+5)		**Lab 4** Vector analysis using earthquake data ___ Lab 3 due	

(#6) 7th / 11th May	**Midterm Exam** (Covers Lectures 1-5)	**Lecture 6** Chapter 6: Data analysis		**Lab 5** Raster analysis using vegetation data	
	Problem Set 3 due	Problem Set 4 (Ch. 6)		Lab 4 due	
(#7) 14th / 18th May	**Worked problems**	**Lecture 7** Chapter 7: Analytical modelling in GIS		**(LAB)** Oral Presentation work	
	Problem Set 4 due	Problem Set 5 (Ch. 7)		Lab 5 due	
(#8) 21st / 25th May	**Oral Presentations**	**Oral Presentations**		**(LAB)** PROJECT WORK	
	Problem Set 5 due			Projects set	
(#9) 28th / 1st June	*Memorial Day*	*Memorial Day*		**(LAB)** PROJECT WORK	
	Project Part 1 due				
(#10) 4th / 8th June	**Final Project Presentations**	**Final Project Presentations**		**(LAB)** PROJECT WORK	
	Project Part 2 due				
finals 4th / 8th June	*Finals Week*	*Finals Week*		*Finals Week*	
	Final Project due in @ 9.00 am				

GEO157

GEO157: course details

TA: Konstantin Choumiline
<konstantin.choumiline@email.ucr.edu>

me: Andy Ridgwell
<andy@seao2.org>

Academic Background

Department of Earth Sciences, University of California Riverside

Prof. Timothy Lyons Biogeochemistry Group (NASA Astrobiology Institute)
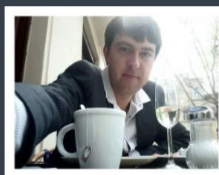
KONSTANTIN CHOUMILINE

Ph.D. Candidate, Department of Earth Sciences, University of California Riverside

News
Academic Background
Ongoing Research
Publications and Events
Skills and Techniques
Field Work Photos
Other Photos
Contact Info

🎓 Education

Doctoral Degree in Geological Sciences (currently pursuing) at University of California Riverside. Advisor: Timothy Lyons

Master's Degree with Honors in Marine Resource Management at Centro Interdisciplinario de Ciencias Marinas – Instituto Politécnico Nacional (La Paz, Baja California Sur, Mexico) with the thesis titled: "Geochemistry of settling particulate matter and recent sediments of Alfonso Basin, La Paz Bay", defended on 12/15/11 [PDF]

Bachelor's Degree in Geology at Universidad Autónoma de Baja California Sur (La Paz, Baja California Sur, Mexico) with the thesis titled: "Application of multivariate statistical methods in determining sediment contribution sources. Case study of La Paz Lagoon, B.C.S., Mexico", defended on 11/17/09 [PDF]

Download Curriculum Vitae

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🏆 Awards

GEO157: course details

Based on a course text-book:

***An Introduction to Geographical Information Systems***

by: Ian Heywood, Sarah Cornelius, University of Aberdeen; Steve Carver, University of Leeds

This book is a <u>required text</u>. Find/obtain it:

(1) UCR bookstore (new or 2nd hand)

(2) Library …

… it may be possible for me to obtain some copies to 'lend' -- if you cannot obtain a copy by thsi lunchtime – <u>contact me</u>.

An Introduction to
GEOGRAPHICAL
INFORMATION
SYSTEMS

Ian Heywood
Sarah Cornelius
Steve Carver

Fourth edition
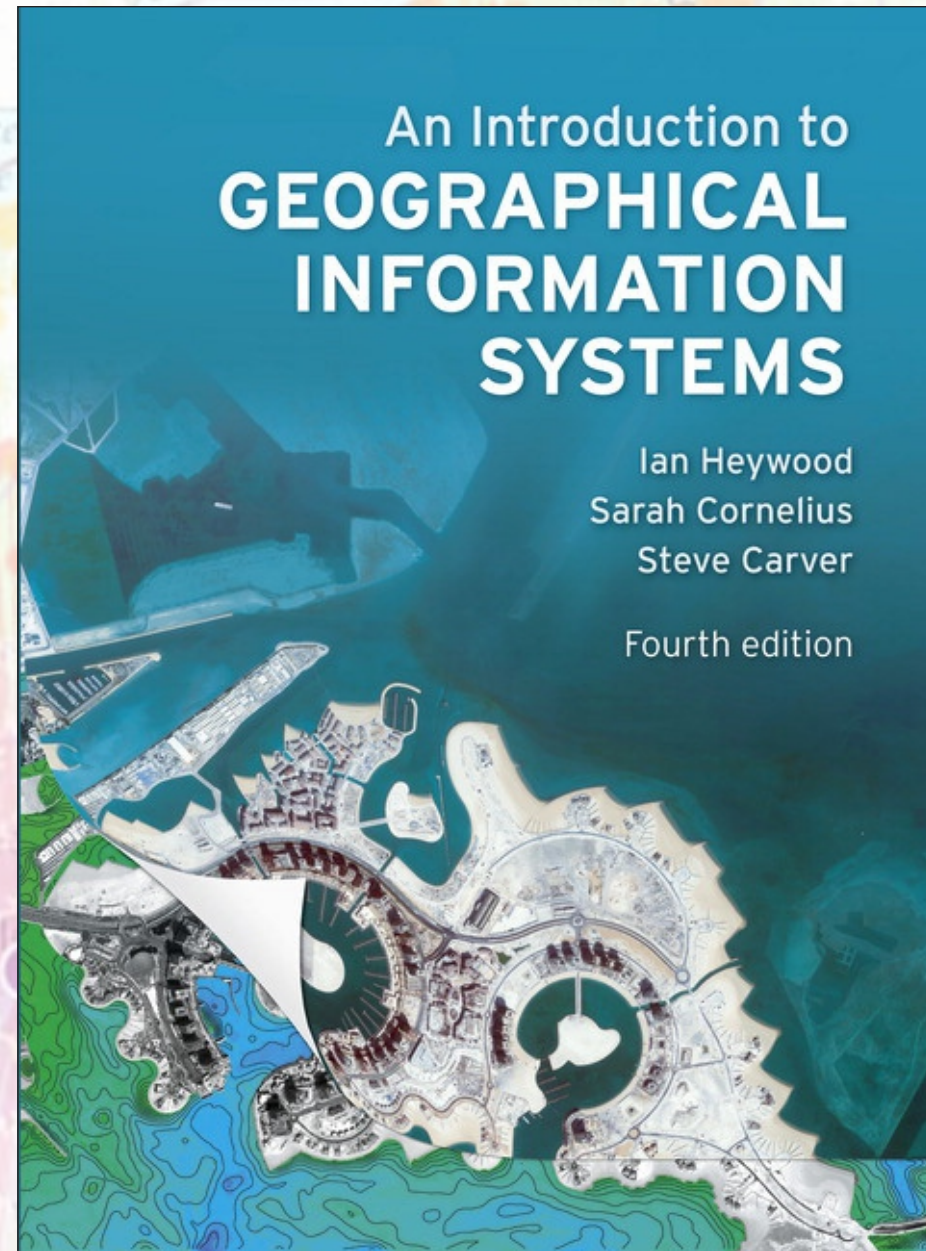
GEO157: software

ArcGIS

(1) Provided on lab desktop computers.

(2) Can be installed on your personal laptop and obtained from MySoftware.ucr.edu:

"ESRI provides ArcGIS Desktop Student Trial, a one year trial. Students will need an EVA authorization code and create an account with ESRI in order to obtain their software."

If you wish ot instal it on your laptop, please try and complete this, this week (week #1).

You will need to provide/bring a USB storage ('thumb') drive to the kabs with you for saving work.

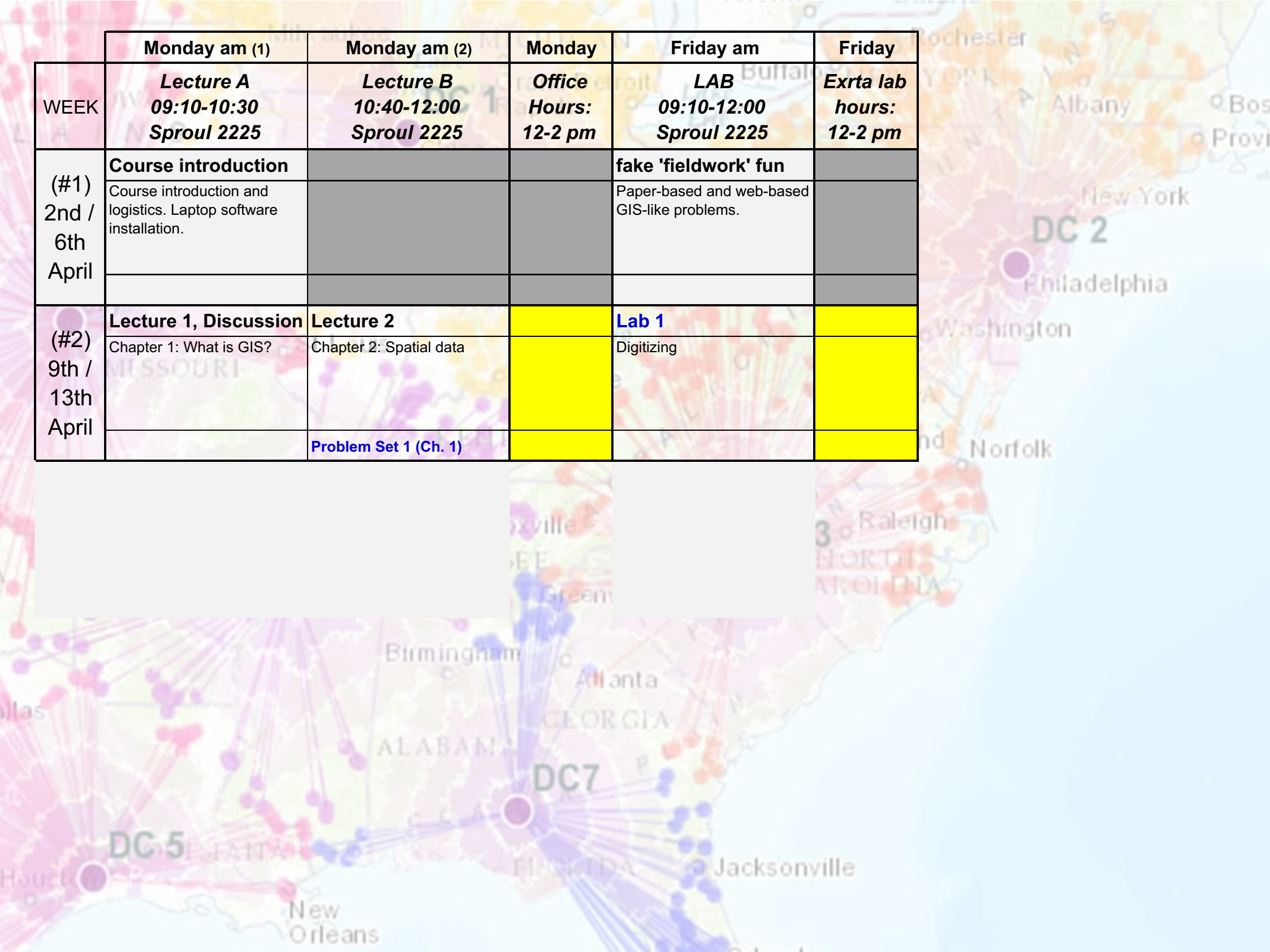| WEEK	Monday am (1)	Monday am (2)	Monday	Friday am	Friday
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GEO157: next class

Friday 6th April at 9 am (same place).

Some GIS-related exercises will be set (that you can do in class, or take away). To be handed in before class starts (9 am) on Monday 9th.

Also remember before then:

(1) course text book aquestition
(2) ArcGIS software install

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GEO157: questions?