Six Years of SEI in Earth Ocean and Atmospheric Sciences

Sara Harris, Francis Jones and Brett Gilley

Conceived, researched, then developed two take home exercises involving the Beaty Museum of Biodioversity for eosc270.

Rebuilt most of the lab exercises for 329 with Josh's help, and based on his own experiences as a TA in earlier year

Course Development and developing workshops for teaching Contributed to adjusting labs (no designs from scratch), and subsequently became sessional for eosc421, advanced seds)

Build an MS-Access relational database for test questions. Learned about, then taught us (via a comprehensive report) about

Developed concept inventories, coordinated and analyzed group work and concept inventory data, and analyzed SAESS data

Worked at compiling and analyzing CIQ (Critical Incidence Questionnaire), questions database and group qui

Worked on CIO data from envr200.

Prepared, conducted, and analyzed results of interviews done at Roundup 2010. see https://circle.ubc.ca/

Rewrote several labs, reformated all labs, developed learning goals, helped develop lecture activities Built rubrics for four design projects, developed (with FJ's help) an introduction to design projects and a peer assessment step in one. Then took full responsibility for the initial implementation of both new components. Finally, recorded grading and feedback in the terms both before and after introducing these.

Contributed to adjusting labs, then took on new labs in eosc425 (advanced paleontology)

Carried out interviews of students and faculty about curriculum issues. See

Several graduate and undergraduate students have been involved in EOSSEI over the years.

rewrote all the mineral and rock labs, reworked all other labs, created TA copies and lab exams

Transformations

In the first four years of EOSSEI we worked in a "transformation mode." STLFs worked with individual faculty on specific courses for at least 2 iterations of the course.

Course N	lo. of Ins	t term	Name	N students: # sections	Core (14) Service(4) Both(5)	STLF		
EOSC114	6	1,2,3	Natural Disasters	1200: 4	S	FJ/BG		
EOSC111	1		Introduction to Earth Science Processes (1 credit lab)	200: 10	C,S	BG		
EOSC221	3	2	Introductory Petrology	80	С	BG		
EOSC112	2	1,2	The Fluid Earth - Atmosphere and Oceans	330: 2	C,S	EL		
EOSC220	2	1	Introductory Mineralogy	80	С	BK/EL/JC/BG		
EOSC212	1	1	Topics in Earth & Planetary Sciences	30	С	FJ		
EOSC210	2	1	Earth Science for Engineers	220	С	BG		
EOSC332	1	2	Tectonic Evolution of North America	50	С	BG		
EOSC322	1	2	Metamorphic Petrology	50	С	EL		
EOSC355	1		The Planets	80	S	FJ		
EOSC211	2	1	Computer Methods in Earth, Ocgy & Atmos. Sci.	60	С	JC		
EOSC372	3	1	Introductory Oceanography: Circulation and Plankton	250	C,S	EL		
EOSC373	3		Introductory Oceanography: Climate and Ecosystems	150	C,S	EL		
EOSC252	1	-	Geophysical properties of materials	20	С	FJ		
EOSC472	1		Introduction to Marine Chemistry and Geochemistry	30	С	JC		
EOSC321	1	1	Igneous Petrology	50	С	BG		
EOSC331	2	1	Intro. Mineral Deposits and Exploration Geology	50	С	BG		
EOSC326	1	1	Earth and Life Through Time	150	S	FJ		
EOSC329	1		Groundwater Hydrology	150	C,S	JC/FJ		
EOSC222	1	2	Geological Time	60	С	FJ		
EOSC350	1	1	Intro applied geophysics for geoscientists	50	С	FJ		
EOSC340	2	1, 2	Global Climate Change	300: 2	S	SH		
EOSC333	1	2	Geochemistry	50	С	BG		

Other classes modified with SEI help (i.e. some consulting):											
ATSC201	1		Meteorlgy storms	120	С	Just in Time teaching					
ENVR200	2		Intr envrmnt sci	100: 2	С	highly engaged; no lecture					
ENVR300	2		Int res ENVRsci	50	С	highly engaged; no lecture					
ENVR400	1		Rsrc prj env sci	50	С	highly engaged; no lecture					
EOSC110	2		The solid earth	400:2	C,S	capstone course					
EOSC116	2		Mesozoic earth	250	S	clickers					
EOSC270	1		Marine ecosystem	80	C,S	clickers					
EOSC328	5		Field geology	60		the senior field mapping course.					
EOSC420	1		Volcanology	40	С	jigsaw projects					
EOSC450	1		Potential fields geophys	20	С	refined use of projects					

	Fall 2007	Spr 2008	Sum 2008	Fall 2008	Spr 2009	Sum 2009	Fall 2009	Spr 2010	Sum 2010	Fall 2010	Spr 2011	Sum 2011	Fall 2011	Spr 2012
P2&T1	P38	T2	P3	T3	T4									
P2&T1	P38	T2	Р3	Т3	T4									
P1	T)		P2	P2	T2	P3	P3	T3						
	P:		P1		P3&T2	P3	T3	T4						
	P:		P1	T1	P2	P2	T2	P3	P3	T3				
	P:		P1	T1	P2	P2	T2	P3	P3	T3				
	P:	1	P1	T1	P2	P2	T2	P3	P3	T3				
		_		P1	T1	P2	P2	T2	P3	P3	T3			
	_	_		P1	T1	P2	P2	T2	P3	T3				
	_	_		P1	T1	P2	P2	T2	P3	T3				
	_	_			P1	P1	T1	P2	P2	T2	Р3	P3	T3	
					P1	P1	T1	P2	P2	T2	Р3	Р3	T3	
							P1	T1	P2	P2	T2	P3	Р3	
							P1	T1	P2					
							P1	T1	P2	P2	T2	P3	Р3	
P = planning term								P1	P1	T1	P2	P2	T2	
T = teaching term								P1	P1	T1	P2	P2	T2	
								P1	P1	T1	P2	P2	T2	
								P1	P1	T1	P2	P2	T2	
									P1	P1	T1	P2	P2	T2
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Undergoing acc											_			

The EOSSEI Times is a monthly newsletter we produce for the department, see a sample below

http://www.eos.ubc.ca/research/cwsei/eosseitimes.html

Sustainability

hiring practices groups 111, 2010, 2011, SH, FJ

SAESS concent 2012

summer 2009 SH hiring practices Jan-10 FJ a few hours for Jan-10 FJ

Fall 2012 BG, FJ

Students in SEI

14 333

22 326, 425

23 372, 373

24 372, 373

Funded? STLF or instr

Redesigned the biodiversity lab Redesigned the biodiversity lab

Reorganized labs samples and lab materials

Course Development and developing workshops for teaching Course Development and developing workshops for teaching Course Development and developing workshops for teaching Course Development and developing workshops for teaching

helped develop online homework questions and labs

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item response theory. Subsequent work done by FJ

Helped with interviews at Roundup 2010.

Completed the questions database for eosc114.

contributing towards publication

BK (BG.EL.JC) Rewrote many of the labs.

At this point the EOSSEI has worked closely with most of the faculty in the department. We have been very pleased with the numbers who participate but also with those who have brought the new methods to other courses they teach.

5 STLFS over the project - Francis Jones, Brett Gilley, Ben Kennedy, Erin Lane, Joshua Caulkins										
of Faculty	# still using new methods	# who applied to new courses	# who discuss teaching with STLFs frequently							
31	30	20	22							

Those of us in the EOSSEI would like to thank all of the faculty and students who have made this project such a great success!

Consulting

In the past two years the initiative has moved towards a consulting mode During 2011-12 STLFs conducted 78 consultations. This year we have continued the consulting model, but over the summer also offered faculty the chance to redevelop labs or lecture activities in a more substantial way. Six projects started this summer. Teaching Assistants who understood the labs and problems well were hired to achieve as much as possible with limited resources.

course	Term	Core	course revisited	Instructor	1st support for inst'r	start	end	STLF	TA	TA-ship supported	what done	docs?
eosc110	2	×		Grimm	×	Jun-12	Nov-12			Partial	pictures and mind maps	none
eosc210	1	x	x	Eberhardt		May-12	Nov-12	BG	Christine Miller	rewrote 6 labs + TA versions, Lab exams + some Partial sample organization		
eosc220	1	x	x	Scoates		May-12	Dec-12	BG & RM	Lauren Greenlaw	Partial	sample organizing, some lab rewriting	
eosc333	2	x		Weis	×	May-12	Dec-12	BG	Lauren Harrison		LGs, activities, formatting labs for common look and feel, lecture activity	
eosc270	2			Maldonado / Pakhomov	~	Sep-12	Jan-13	FJ	Jade Schiller	full		two exercises - stu. and TA versions'
eosc433	1	x		Eberhardt		Jun-12	Nov-12	FJ	Geidy Baldeon		Rubrics for projects, two new exercises: 1) design project process support 2) peer review of work	