

UNIVERSITY OF CALGARY  
FACULTY OF SCIENCE  
DEPARTMENT OF GEOSCIENCE  
COURSE OUTLINE  
WINTER 2015**1. Course:** Geology 343, 3D Geological Structures and Methods

Lecture Section:

L01: Mo We Fr, 10:00-10:50, ST 148

**Instructors:** Dr. Rudi Meyer, Office ES 110, Tel. No. 403-210-7848, e-mail address, [rmeyer@ucalgary.ca](mailto:rmeyer@ucalgary.ca).and Dr. Bernard Guest, Offices ES 524A, Tel. No. 403-220-8093, e-mail address, [bquest@ucalgary.ca](mailto:bquest@ucalgary.ca).

Instructor Office Hours: TBA

**Teaching Assistants:** Lynsey McKinnon, Dillon Newitt, Daniel Coutts, Daniel Alonso Torres, Garret Quinn, and Emma Percy.**d2L Course:** GLGY 343 L01 - (Winter 2015) - 3D Geologic Structures and MethodsGeoscience Department ES 118, 403-220-5841, [geoscience.ucalgary.ca](http://geoscience.ucalgary.ca), [geoscience@ucalgary.ca](mailto:geoscience@ucalgary.ca)**2. Prerequisites:** GLGY 201, and 202 or 203, and 381; GOPH 351 or 355; MATH 211. See section 3.5.C in the Faculty of Science section of the online Calendar ([www.ucalgary.ca/pubs/calendar/current/sc-3-5.html](http://www.ucalgary.ca/pubs/calendar/current/sc-3-5.html))**3. Grading:** The University policy on grading and related matters is described sections **F.1** and **F.2** of the online University Calendar. In determining the overall grade in the course the following will be used: 5 quizzes (no midterms), a lecture final and a lab final, and Tophat Monocle® (make sure you have an account).Five (5) Quizzes: Fridays January 30, February 13,  
March 6, March 20, and April 3                                5 x 7% each = 35%

Lecture Final Exam – Scheduled by registrar                                30%

Lab Final Exam – April 7/8/9    30%

Top Hat classroom response system participation                                5%     *[See Note below]*

- The two-hour Lecture Final Exam is cumulative.
- Lab assignments throughout the semester will be self-assessed by the students using Answer Keys that will be made available at the end of each week.
- The Top Hat® classroom response mark of 5% is based on participation only. Note that students don't have to be present for every question – a score of about 85% corresponds to a full mark. If you wish to opt-out of this mark the corresponding 5% will be added to the weight of the Final Exam.

► **To opt-out students must inform the instructor R.Meyer in writing (via email) by Friday April 10.**

Each piece of work (e.g. Quizzes, Final exams, and Top Hat® participation) submitted by the student will be assigned a percentage score. The student's average percentage score for the various components listed above will be combined with the indicated weights to produce an overall percentage for the course, which will be used to determine the course letter grade. The conversion between course percentage and letter grade is given below.

Letter Grade	Percent	Letter Grade	Percent
A+	95-100	C+	65-69
A	90-94	C	60-64
A-	85-89	C-	56-59
B+	80-84	D+	53-55
B	75-79	D	50-52
B-	70-74	F	0-49

4. **Missed Components of Term Work:** The regulations of the Faculty of Science pertaining to this matter are found in the Faculty of Science area of the Calendar in [Section 3.6](#). It is the student's responsibility to familiarize himself/herself with these regulations. See also [Section E.6](#) of the University Calendar

5. **Course Materials:**

Textbook: An Introduction to Geological Structures and Maps, by George M Bennison, Keith A Moseley, and Paul A. Olver Arnold, 2011, 8<sup>th</sup> Edition.

The course D2L site will contain Lab handouts as well as copies of the lectures, and additional useful text and graphic resource materials are also posted. However, students are advised that staying current with materials posted on D2L is not a substitute for attendance at Lectures and Labs and reading the textbook. The former provides an interactive environment that complements and provides tangible context to the subject matter treated in the textbook and in lab exercises.

6. **Examination Policy:** No network compatible electronic devices or written aids (e.g. cell phones, tablets, computers, PDAs, notes, textbooks) will be allowed during writing of any exams. Basic calculators with trig functions are permitted.

Students should also read the Calendar, [Section G](#), on Examinations.

7. **Writing across the curriculum statement:** Writing on exams should be clear and legible. Illegible writing will not be evaluated. See [Section E.2](#) of the University Calendar.

8. **OTHER IMPORTANT INFORMATION FOR STUDENTS:**

(a) **Misconduct:** Academic misconduct (cheating, plagiarism, or any other form) is a very serious offence that will be dealt with rigorously in all cases. A single offence may lead to disciplinary probation or suspension or expulsion. The Faculty of Science follows a zero tolerance policy regarding dishonesty. Please read the sections of the University Calendar under [Section K](#). Student Misconduct to inform yourself of definitions, processes and penalties.

(b) **Assembly Points:** In case of emergency during class time, be sure to FAMILIARIZE YOURSELF with the information on [assembly points](#).

(c) **Academic Accommodation Policy:** Students with documentable disabilities are referred to the following links: Students with Disabilities: <http://www.ucalgary.ca/pubs/calendar/current/b-1.html> [B.1](#) and Student Accessibility Services: <http://www.ucalgary.ca/access/>.

(d) **Safewalk:** Campus Security will escort individuals day or night (<http://www.ucalgary.ca/security/safewalk/>). Call 220-5333 for assistance. Use any campus phone, emergency phone or the yellow phones located at most parking lot pay booths.

(e) **Freedom of Information and Privacy:** This course is conducted in accordance with the Freedom of Information and Protection of Privacy Act (FOIPP). As one consequence, students should identify themselves on all written work by placing their name on the front page and their ID number on each subsequent page. For more information see also <http://www.ucalgary.ca/secretariat/privacy>.

(f) **Student Union Information:** VP Academic Phone: 220-3911 Email: [suvpaca@ucalgary.ca](mailto:suvpaca@ucalgary.ca).  
SU Faculty Rep. Phone: 220-3913 Email: [sciencerep@su.ucalgary.ca](mailto:sciencerep@su.ucalgary.ca); [Student Ombudsman](#)

(g) **Internet and Electronic Device Information:** You can assume that in all classes that you attend, your cell phone should be turned off unless instructed otherwise. Also, communication with other individuals, via laptop computers, Blackberries or other devices connectable to the Internet is not allowed in class time unless specifically permitted by the instructor. If you violate this policy you may be asked to leave the classroom. Repeated abuse may result in a charge of misconduct.

(h) **U.S.R.I.:** At the University of Calgary, feedback provided by students through the Universal Student Ratings of Instruction (USRI) survey provides valuable information to help with evaluating instruction, enhancing learning and teaching, and selecting courses ([www.ucalgary.ca/usri](http://www.ucalgary.ca/usri)). Your responses make a difference - please participate in USRI Surveys.

**Accompanying this Outline is a Schedule of Lecture and Lab topics (Course Topics Schedule\_343 W15.pdf).**

**COURSE TOPICS SCHEDULE – GLGY 343 Winter 2015** (Note that schedule is tentative and subject to slight changes)

	<b>WEEK of</b>	<b>LECTURES MWF 10–10:50 in Room ST 148</b>	<b>LABS in Room ES 149 *</b>
<b>1</b>	Jan 12	Introduction: organization, grading, objectives, expectations. Introductory concepts; horizontal and inclined strata.	LAB 1: Lines and planes, strike and dip, apparent dip, topographic profile
<b>2</b>	Jan 19	The use of structure contours to extrapolate the location of planar surfaces. Unconformities.	LAB 2: Inclined strata on maps and cross-sections
<b>3</b>	Jan 26	Unconformities <i>cont'</i> . About maps: projections, coordinates, scales. <b>Friday January 30: QUIZ 1</b>	LAB 3: Unconformity surfaces on maps and cross-sections. (maybe start Troll Flats Project)
<b>4</b>	Feb 2	Making geological maps: methods, symbols, surface & subsurface. A day in the field with a structural geologist.	LAB 4: Troll Flats Project: making cross-sections and a map – from scratch
<b>5</b>	Feb 9	Introduction to folds: nomenclature, classification, map patterns. <b>Friday February 13: QUIZ 2</b>	LAB 4 <i>continued</i>
<b>6</b>	Feb 16	<b>READING WEEK: NO LECTURES</b>	<b>READING WEEK: NO LABS</b>
<b>7</b>	Feb 23	Folds <i>cont'</i> . Introduction to the application of stereonet in structural geology.	LAB 5: Folded strata on maps and cross-sections
<b>8</b>	Mar 2	Introduction to faults: nomenclature, classification, map patterns and 3D fault problems.	LAB 6: Use of stereonet to define/derive orientations of lines and planes and corresponding angular relationships
<b>9</b>	Mar 9	Faults <i>continued</i> . Visualizing 3D of sedimentary bodies: processes and products.	LAB 7: Faulted strata on maps and cross-sections
<b>10</b>	Mar 16	3D sed bodies <i>cont'</i> . A day in the field with a sedimentologist. <b>Friday March 20: QUIZ 4</b>	LAB 8: Inclined surfaces in clastic sedimentology
<b>11</b>	Mar 23	Mapping in space and time. 3D of igneous bodies: processes and products.	LAB 8 <i>continued</i> .
<b>12</b>	Mar 30	Map patterns of cross-cutting intrusions (igneous and/or salt) <b>Friday April 3: QUIZ 5</b>	LAB 9: Igneous and/or salt intrusions on maps and cross-sections
<b>13</b>	April 6	Mapping and interpretation of more complex terrains.	<b>LAB EXAM</b>
<b>14</b>	April 13	Review. <b>Wed April 15 : LAST DAY of CLASSES</b>	

\* Lab Schedule: Tu Thurs 8:00 am, 11:00 am, 2:00 pm, 5:00 pm and Wed 11:00 am, 5:00 pm.