## Course Revision Form

### 1. Will this course revision affect a current program?
- Yes [□] No [x]
If "yes", has a Program Revision Form been submitted concurrently?
- Yes [□] No [x]

### 2. Teaching Department:
- Earth and Planetary Sciences

### 3. Administering Faculty/Unit:
- Science

### 4. Campus
- Downtown, Macdonald, Off Campus, Distance Ed, Other – specify

### 5. Effective Term of Implementation
- Ex. Sept. 2004 = 200409
- Term: 200909
- Retirement

### 6. Responsible Instructor:
- Don R. Baker

### 8. Course Number(s)
- Indicate course number & the number of terms spanned:
- Subject/course number:
  - EPSC 547
- Course(s) Span:
  - 1 term
  - 2 consecutive terms (D1, D2)
  - 2 non-consecutive terms (N1, N2)
  - 3 consecutive terms (J1, J2, J3)

### 9. Number Change From:
- N/A

### 10. Consolidation of Courses:
- N/A

### 11. Split of Multi-Term Course:
- N/A

### 12. Course Title (Limit 30 char.) - required for all courses.
- Modeling Geochemical Processes

### 13. Course Title to Appear in the Calendar (Optional)
- (Limit 59 characters):
- Modeling Geochemical Processes

### 14. Rationale for revised course

During the past decade the material covered in this course has evolved from a presentation of thermodynamic constraints on high-temperature geological systems to applying those concepts together with kinetic models to interpret geochemical processes at various temperatures. Thus, the change in name and description of this course better reflects the reality of what is taught and will better inform prospective students who may be interested in taking this course. The chemistry prerequisites for this course (CHEM 203, 204 or 213) have been replaced by a math prerequisite (MATH 222) and a geochemistry course prerequisite (EPSC 220) because they are more appropriate preparation for this course as it is taught now than the chemistry courses.

### 15. New Course Description
- Advanced thermodynamics and kinetics will be applied to construct models that quantitatively investigate geochemical processes. Topics include, but are not restricted to: activity-composition relationships in solids, liquids and fluids, crystallization and melting, precipitation and dissolution, rates of geochemical processes, interaction of geological liquids and fluids with rocks and minerals.

### 16. Old Course Description
- (as it will appear in the Calendar [maximum 50 words]):
- (N.B. Faculty of Medicine must append complete course outline)
- The application of thermodynamic principles to igneous and metamorphic petrology and economic geology. Topics include but are not restricted to: solid solutions in minerals, behaviour of geological fluids, phase equilibria, flow processes, estimation of thermodynamic data.

(3) (Fall) (2 hours lectures, 3 hours laboratory) (Prerequisites: CHEM 203, CHEM 204 or CHEM 213, or equivalents, or permission of instructor.) The application of thermodynamic principles to igneous and metamorphic petrology and economic geology. Topics include but are not restricted to: solid solutions in minerals, behaviour of geological fluids, phase equilibria, flow processes, estimation of thermodynamic data.
17. Supplementary information to appear in the Calendar in addition to the course description.  
Such as: equivalent course(s), contact hours, enrolment limitations, language of instruction etc. 
Please enter the information as it should appear in the calendar notes.

(3 hours lectures) (Prerequisites: EPSC 220, MATH 222, or permission of instructor)

18. Schedule Types(s):  
(Enter all that apply – see course guidelines for a complete list.)

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<thead>
<tr>
<th>Lecture</th>
<th>Hours per Week</th>
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<tbody>
<tr>
<td></td>
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</table>

Total Hours per Week: 3

Total Number of Weeks: 

19. Projected Enrolment:

10

20. Revised Prerequisite(s) (Courses or Tests) (in full)  
Specify course number(s) or name(s) of test(s):

EPSC 220, MATH 222, or permission of instructor

If the student does not have a prerequisite should web registration be blocked?

Yes [x] No

If “Yes” complete A and B:

A. Indicate minimum grade or test score(s) the student must attain in prerequisite course(s) or test(s):

B. Can the prerequisite course(s) or test(s) be taken in the same term as this course?

Yes [x] No

21. Revised Corequisite(s) Course Number(s) (in full):  
Specify course number(s):

None

If the student does not register for the corequisite in the same term should web registration be blocked?

Yes [x] No

Old corequisite(s) course numbers (if applicable):

22. Revised Restriction(s):

None

Old Restriction(s):

None

23. Additional Course Charges (must be approved by the Fee Policy Committee)  
Description of Fee  
(e.g. screening fee)  

<table>
<thead>
<tr>
<th>Description of Fee</th>
<th>Amount</th>
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<tbody>
<tr>
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</table>

24. Requires Teaching, Physical, or Financial Resources  
Not Currently Available (attach explanation)

Yes [x] No

25. Consultation Reports Attached

Yes [x] N/A
**INFORMATION FOR ADMISSIONS, RECRUITMENT & REGISTRAR’S OFFICE**

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<th>To be completed by ARR</th>
<th>For Continuing Education Use</th>
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<tbody>
<tr>
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<td>Thesis Component:</td>
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<tr>
<td>Routing Sequence</td>
<td>Departmental Meeting</td>
<td>Departmental Chair</td>
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<tr>
<td></td>
<td>Other Faculty</td>
<td>Curric/Academic Committee</td>
</tr>
<tr>
<td>Name</td>
<td>Don Baker</td>
<td>John Stix</td>
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<tr>
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<td>Date</td>
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<td>Departmental Contact Person</td>
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