

BS IN GEOLOGY (GENERAL GEOLOGY)

In Workflow

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Approval Path

1. Tue, 15 Oct 2019 23:03:56 GMT
Brian Hausback (hausback): Approved for GEOL Committee Chair
2. Tue, 15 Oct 2019 23:07:20 GMT
Kevin Cornwell (cornwell): Approved for GEOL Chair
3. Mon, 21 Oct 2019 22:22:42 GMT
Thomas Krabacher (tsk): Approved for NSM College Committee Chair
4. Wed, 23 Oct 2019 18:00:42 GMT
Shannon Datwyler (datwyler): Approved for NSM Dean

History

1. May 2, 2018 by clmig-jwehrheim
2. Aug 13, 2018 by 212408496
3. Oct 2, 2018 by 212408496

Date Submitted: Tue, 15 Oct 2019 22:27:11 GMT

Viewing: BS in Geology (General Geology)

Last approved: Tue, 02 Oct 2018 20:20:14 GMT

Last edit: Tue, 29 Oct 2019 16:37:35 GMT

Changes proposed by: Amy Wagner (216313696)

Academic Group: (College)

Natural Sciences & Mathematics

Academic Organization: (Department)

Geology

Catalog Year Effective:

2020-2021 Catalog

Individual(s) primarily responsible for drafting the proposed degree major program:

| Name (First Last) | Email | Phone 999-999-9999 |
|-------------------|---------------------|--------------------|
| Brian Hausback | hausback@csus.edu | 916-952-5129 |
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Type of Program Proposal:

Concentration

Program Change Type:

Substantive

Title of the Program:

BS in Geology (General Geology)

Designation: (degree terminology)

Bachelor of Science

Briefly describe the program proposal (new or change) and provide a justification:

Bring the curriculum up to date with student needs in the workplace and graduate school needs. We are creating two concentrations within the current degree program: General Geology and Hydrogeology. This proposal modifies the current BS in Geology curriculum to reflect the General Geology concentration.

We have also added a few new courses to the curriculum to better prepare our students for the work force and/or graduate school.

The revised curriculum includes several new or modified classes that are being changed/updated to focus the curriculum to meet student needs. There are Form A course proposals in the workflow for the following classes:

GEOL 11 - Digital Methods in Geoscience

GEOL 100 - Earth Materials - Rocks and Minerals

GEOL 101 - Optical Mineralogy

GEOL 189 - Geology Colloquium

Additionally, the list of courses has been updated to reflect a few new Geology courses that were previously added to the list of electives for the degree.

Objectives of the degree program:

The B.S. in Geology (General Geology) has the following program learning goals:

- I. Students are prepared for professional and/or graduate study involving the geosciences
- II. Students develop a deep understanding of Earth systems: how Earth systems work and how they interact
- III. Students develop their ability to solve geologic problems through the use of the scientific method
- IV. Students develop their technical communication skills: seeking and processing technical information; and communicating technical information and conclusions in both oral and written form
- V. Students develop the quantitative reasoning skills necessary to solve geologic problems

These goals lead to the following program learning outcomes:

- a. Students will master a set of fundamental geologic concepts essential to understanding and solving geologic problems
- b. Students will be proficient in solving geologic problems
- c. Students will be proficient in using quantitative skills to solve geologic problems
- d. Students will be proficient in understanding and producing geologic maps
- e. Students will be proficient writers, skilled in the genres of scientific and technical writing
- f. Students will be proficient oral communicators, skilled in presenting scientific topics

University Learning Goals

Undergraduate Learning Goals:

Competence in the disciplines

Knowledge of human cultures and the physical and natural world

Intellectual and practical skills

Will this program be required as part of a teaching credential program, a single subject, or multiple subject waiver program (e.g., Liberal Studies, Biology) or other school personnel preparation program (e.g., School of Nursing)?

No

Please attach a Comprehensive Program Assessment Plan (required)

Geology Assessment Plan 2019 General Geology concentration.docx

Please attach a Curriculum Map Matrix (required)

BS General Geology curriculum map.doc

Please attach a five-year budget projection (required)

BS in Geology 5 year budget.docx

Do these changes impact the Smart Planner roadmap?

Yes

Please attach the Smart Planner roadmap:

2018_GEOL_Geology BS-OLD.docx

Briefly describe the change:

Adding the new required courses of:

GEOL 11 - Digital Methods in Geoscience
 GEOL 100 - Earth Materials - Rocks and Minerals
 GEOL 101 - Optical Mineralogy
 GEOL 189 - Geology Colloquium

Catalog Description:

Units required for Major: 72

Total units required for BS: 120

Program Description

The BS in Geology (General Geology) degree program is designed to prepare students for professional employment or advanced study in geology. The Geology program emphasizes a strong background in the major areas of geology including: mineralogy, petrology, stratigraphy, structural geology, field mapping, and report writing.

As defined by policy <http://www.csus.edu/umannual/acadaff/fsm00010.htm>, a change in units constitutes a substantive change to the program. If your changes constitute a substantive change, please refer back to the "Program Change Type" field above to ensure that "Substantive" is selected.

Program Requirements: (If new courses are being created as part of a new program, it will be useful to propose courses first.)

Program Requirements

| Code | Title | Units |
|---|--|-------|
| Required Lower Division Courses (26 Units) | | |
| CHEM 1A | General Chemistry I | 5 |
| GEOL 10 or GEOL 5 | Physical Geology Geology Of Mexico | 3 |
| GEOL 10L or GEOL 5 | Physical Geology Lab Geology Of Mexico | 1 |
| GEOL 11 | Course GEOL 11 Not Found(Three hour lab) | 1 |
| GEOL 12 | Historical Geology | 3 |
| GEOL 12L | Historical Geology Lab | 1 |
| MATH 30 | Calculus I ¹ | 4 |
| PHYS 5A or PHYS 11A | General Physics: Mechanics, Heat, Sound General Physics: Mechanics | 4 |
| PHYS 5B or PHYS 11B | General Physics: Light, Electricity and Magnetism, Modern Physics General Physics: Heat, Light, Sound, Modern Physics | 4 |
| Required Upper Division Courses (46 Units) | | |
| GEOL 100 | Earth Materials - Rocks and Minerals | 4 |
| GEOL 101 | Course GEOL 101 Not Found | 2 |
| GEOL 102 | Igneous and Metamorphic Petrology | 4 |
| GEOL 103 | Sedimentology/Stratigraphy | 4 |
| GEOL 110A | Structural Geology and Tectonics | 4 |
| GEOL 110B | Structural Geology Field | 1 |
| GEOL 111A | Field Geology | 2 |
| GEOL 111B | Field Techniques | 2 |
| GEOL 121 | Geology of California | 3 |
| GEOL 188 | Advanced Geologic Mapping | 6 |
| GEOL 189 | Course GEOL 189 Not Found(1 unit class must be taken twice for a total of 2 units) | 2 |
| Select at least 12 units from the following: | | 12 |
| GEOL 105 | Paleontology | |
| GEOL 112 | Geophysics For Geologists | |
| GEOL 114 | Volcanology | |
| GEOL 120 | Surficial Processes | |
| GEOL 123 | Geochemistry | |
| GEOL 125 | Metallic Ore Deposits | |
| GEOL 126 | Environmental Field Methods | |
| GEOL 127 | Hydrogeology | |
| GEOL 132 | Marine Geology | |
| GEOL 150 | Computer Mapping in Geology | |

| | |
|-----------|--|
| GEOL 171 | Petroleum Geology |
| GEOL 190A | Geology and Tectonic Development of California Seminar |
| GEOL 193C | Engineering Geology |
| GEOL 198A | Senior Research Preparation |
| GEOL 198B | Senior Research Project |

Total Units 72

¹ Course also satisfies General Education (GE)/Graduation Requirement.

General Education Requirements ¹

| Code | Title | Units |
|---|--|-------|
| Area A: Basic Subjects (9 Units) | | |
| A1 | Oral Communication | 3 |
| A2 | Written Communication | 3 |
| A3 | Critical Thinking | 3 |
| Area B: Physical Universe and Its Life Forms (6 Units) | | |
| B1 | Physical Science ² | 0 |
| B2 | Life Forms | 3 |
| B3 | Lab (Note: Lab experience to be taken with one of the following: B1, B2 or B5) ² | 0 |
| B4 | Math Concepts ² | 0 |
| B5 | Additional Course (Any B to reach 12 units) - Take upper-division course to complete Area & upper division requirements. | 3 |
| Area C: Arts and Humanities (12 Units) | | |
| C1 | Arts | 3 |
| C2 | Humanities | 3 |
| C1/C2 | Area C Course | 3 |
| C1/C2 | Area C Course - Take upper-division course to complete Area & upper division requirements. | 3 |
| Area D: The Individual and Society (12 Units) | | |
| | Area D Course | 3 |
| | Area D Course | 3 |
| | Area D Course | 3 |
| | Area D Course - Take upper-division course to complete Area & upper division requirements. | 3 |
| Area E: Understanding Personal Development (3 Units) | | |
| | Area E Course | 3 |
| Total Units | | 42 |

¹ To help you complete your degree in a timely manner and not take more units than absolutely necessary, there are ways to use single courses to meet more than one requirement (overlap). For further information, please visit the General Education page (<http://catalog.csus.edu/colleges/academic-affairs/general-education/>).

Note: There is no way to list all possible overlaps so please consult with a professional advisor. The Academic Advising Center can be visited online (<http://www.csus.edu/acad/>), by phone (916) 278-1000, or email (advising@csus.edu).

² Required in Major; also satisfies GE.

Graduation Requirements ¹

| Code | Title | Units |
|--|--|-------|
| Graduation Requirements (required by CSU) (9 Units) | | |
| | American Institutions: U.S. History | 3 |
| | American Institutions: U.S. Constitution & CA Government | 3 |
| | Writing Intensive (WI) | 3 |
| Graduation Requirements (required by Sacramento State) (12 Units) | | |
| | English Composition II | 3 |
| | Race and Ethnicity in American Society (RE) | 3 |
| | Foreign Language Proficiency Requirement ² | 6 |

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² If not satisfied before entering Sacramento State, it may be satisfied in General Education Area C2 (Humanities). "C- or better required." The alternative methods for satisfying the Foreign Language Proficiency Requirement are described here: <https://www.csus.edu/wll/flgr/>

Fiscal Impact to Change an Existing Program

Indicate programmatic or fiscal impact which this change will have on other academic units' programs, and describe the consultation that has occurred with affected units:

There is no fiscal or academic impact on other academic units' programs since all the changes in required courses are within the Geology Department.

Provide a fiscal analysis of the proposed changes:

N/A

How will the above changes be accommodated within the department/College existing fiscal resources?

N/A

Will the proposed changes require additional resources?

No

What additional space, equipment, operating expenses, library, computer, or media resources, clerical/technical support, or other resources will be needed?

N/A

Key: 212