|  |  |
| --- | --- |
| **Course Title:** | ***GENERAL GEOLOGY*** |
| **Course Code:** | ***GEO 100*** |
| **Program:** | ***Geology B.Sc.*** |
| **Department:** | ***Geology and Geophysics Department*** |
| **College:** | ***College of Science*** |
| **Institution:** | ***King Saud University*** |

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# A. Course Identification

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **1. Credit hours:** | | | | **4** | | | | | | | | | | | | |
| **2. Course type** | | | | | | | | | | | | | | | | |
| **a.** | University | |  | | College | | |  | Department | | | | **X** | Others |  |  |
| **b.** | | Required | | | | **X** | Elective | | |  |  | | | | | |
| **3. Level/year at which this course is offered:** | | | | | | | | | | | | **3rd Level** | | | | |
| **4. Pre-requisites for this course** (if any)**: None** | | | | | | | | | | | | | | | | |
| **5. Co-requisites for this course** (if any)**: None** | | | | | | | | | | | | | | | | |
|  | | | | | | | | | | | | | | | | |

## 6. Mode of Instruction (mark all that apply)

| **No** | **Mode of Instruction** | **Contact Hours** | **Percentage** |
| --- | --- | --- | --- |
| **1** | **Traditional classroom** | **75** | **100%** |
| **2** | **Blended** |  |  |
| **3** | **E-learning** |  |  |
| **4** | **Correspondence** |  |  |
| **5** | **Other** |  |  |

**7. Actual Learning Hours** (based on academic semester)

|  |  |  |
| --- | --- | --- |
| **No** | **Activity** | **Learning Hours** |
| **Contact Hours** | | |
| **1** | **Lecture** | **45** |
| **2** | **Laboratory/Studio** | **30** |
| **3** | **Tutorial** | **-** |
| **4** | **Others** (specify) | **-** |
|  | **Total** | **75** |
| **Other Learning Hours\*** | | |
| **1** | **Study** | **30** |
| **2** | **Assignments** | **10** |
| **3** | **Library** | **10** |
| **4** | **Projects/Research Essays/Theses** | **20** |
| **5** | **Others** (specify) | **-** |
|  | **Total** | **70** |

**\*** The length of time that a learner takes to complete learning activities that lead to achievement of course learning outcomes, such as study time, homework assignments, projects, preparing presentations, library times

# B. Course Objectives and Learning Outcomes

|  |
| --- |
| 1. Course Description Introduction to physical geology and minerals – volcanism and intrusive igneous rocks – weathering, soil, sediments and sedimentary rocks – metamorphism and metamorphic rocks – water courses and groundwater – glaciers and glaciations – deserts and coasts – geological structures – earthquakes – plate tectonics – mountain belts and continental growth – earth resources. |
|  |
| 2. Course Main Objective |
| 1. This course addresses the general education outcome relating to communications as follows:           a. Students develop their reading comprehension skills by reading the textbook, handout materials, and/or web materials.          b. Students develop their writing skills through a variety of homework assignments, tests, and quizzes.          c. Students develop their speaking/communications skills through class discussions, by asking questions in class verbally or through electronic media as well as interactions with their peers in and out of class.   1. This course addresses the general education outcomes of recognition and application of scientific inquiry as follows:           a. Students must apply the geological principles to explain various observed natural phenomena that occur on the Earth's surface as well as in the interior of the Earth.          b. Students will develop their observation skills to be able to recognize the various geological features and materials the Earth is constructed from.          c. Students will develop the skills of inquiry by use of the scientific method to experience, evaluate, and synthesize data as applied to various geological problems.   1. This course addresses the general education outcomes of developing effective individual, and at times, group problem-solving and critical thinking skills as applied to geology.   a. Students will develop their ability to solve problems and think critically by applying their acquired knowledge of geology to various problems that deal with geological issues as well as geological hazards. |

## 3. Course Learning Outcomes

| **CLOs** | | **Aligned****PLOs** |
| --- | --- | --- |
| 1 | **Knowledge:** |  |
| 1.1 | Describe origin of Earth | Acquire knowledge about origin of Earth and different types of rocks and minerals |
| 1.2 | Outline how different rock types and minerals are formed |
| 1.3 |  |
| 1... |  |  |
| **2** | **Skills :** |  |
| 2.1 | Compare between various geologic features and materials | Acquire skills about geologic features internally and externally |
| 2.2 | Explain various observed natural phenomena that occur on the Earth's surface as well as in its interior |
| 2.3 | Work independently and as part of a team |
| 2.4 |  |
| **3** | **Competence:** |  |
| 3.1 | Scientific writing | Communicate appropriately, oral and written as individual as well as in team-work or groups. |
| 3.2 | Working in teams |
| 3.3 | Communicate results of work with others |
| 3.4 |  |

# C. Course Content

|  |  |  |
| --- | --- | --- |
| **No** | **List of Topics** | **Contact Hours** |
| 1 | An Introduction to Geology | 3 |
| 2 | Matter and Minerals | 6 |
| 3 | Igneous Rocks and Volcanoes | 9 |
| 4 | Sedimentary Rocks | 3 |
| 5 | Metamorphic Rocks | 3 |
| 6 | Geologic Structures | 3 |
| 7 | Weathering and Soil | 3 |
| 8 | Earthquakes | 3 |
| 9 | Geologic time | 6 |
| 10 | Plate tectonics | 6 |
| **Total** | | 45 |

# D. Teaching and Assessment

## 1. Alignment of Course Learning Outcomes with Teaching Strategies and Assessment Methods

| **Code** | **Course Learning Outcomes** | **Teaching Strategies** | | **Assessment Methods** |
| --- | --- | --- | --- | --- |
| **1.0** | **Knowledge** | | | |
| 1.1 | Describe origin of the Earth | In-class lecturing | | Major and final exams |
| 1.2 | Outline how different rock types and minerals are formed | Laboratory practice | | Evaluation of lab reports |
| … |  |  | |  |
| **2.0** | **Skills** | | | |
| 2.1 | Compare between various geologic features and materials | Homework assignments | Quizzes | |
| 2.2 | Explain various observed natural phenomena that occur on the Earth's surface as well as in its interior | Problem solving in the tutorial | Checking the problems solved in the homework assignments | |
| 2.3 | Work independently and as part of a team | Writing group reports | Assessment of the laboratory reports | |
| 2.4 | Communicate results of work to others | Solving problems in groups during tutorial | Grading homework assignments | |
|  |  |  |  | |
|  |  |  |  | |
| **3.0** | **Competence** | | | |
| 3.1 | Scientific writing | Writing laboratory reports | | Evaluating the laboratory written reports |
| 3.2 | Working in teams | Incorporating the use and utilization of computer in the course requirements | | Evaluating the laboratory written reports |
| 3.3 |  |  | |  |
| 3.4 |  |  | |  |

## 2. Assessment Tasks for Students

| **#** | **Assessment task\*** | **Week Due** | **Percentage of Total Assessment Score** |
| --- | --- | --- | --- |
| **1** | Assignments (class quizzes, scientific reports, field trip) | weekly | 10% |
| **2** | First mid-term exam | 6th | 10% |
| **3** | Second mid-term exam | 11th | 10% |
| **4** | Practical exam | 12th | 30% |
| **5** | Final exam | 16th | 40% |
| **6** |  |  |  |
| **7** |  |  |  |
| **8** |  |  |  |

**\*Assessment task** (i.e., written test, oral test, oral presentation, group project, essay, etc.)

# E. Student Academic Counseling and Support

|  |
| --- |
| **Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice :** |
| * **Faculty is required to be available in his office to devote at least 4 hrs/week for students’ consultation and academic advice.** |

# F. Learning Resources and Facilities

## 1.Learning Resources

|  |  |
| --- | --- |
| **Required Textbooks** | Tarbuck, E.J. and Lutgens, F.K., 2002, ***The Earth***, Ninth Edition, Prentice Hall, New Jersey, 670 p. with accompanying GEODe III CD-ROM bound into book inside back cover**.** |
| **Essential References Materials** | Selected handouts and reference materials on physical geology those have been provided as part of course materials. |
| **Electronic Materials** | * <https://geology.com/teacher/> * [http://www.ucl.ac.uk/GeolSci/micropal/welcome.html](http://vcourseware.calstatela.edu/VirtualDating) * [http://ead.univ-angers.fr/~geologie/atlas/Taxo.htm](http://pubs.usgs.gov/gip/geotime/radiometric.html)   Websites on the internet that are relevant to the topics of the course |
| **Other Learning Materials** | Multimedia associated with the text book and the relevant websites |

## 2. Facilities Required

| **Item** | **Resources** |
| --- | --- |
| **Accommodation**  (Classrooms, laboratories, demonstration rooms/labs, etc.) | * **Lecture room equipped with a black board, overhead projector, computer and internet connection.** * **The laboratory will have a blackboard, overhead projector with computer connection and seating arrangement for the students.** |
| **Technology Resources**  (AV, data show, Smart Board, software, etc.) | * **Classroom with PC connected to Data show and Smart board.** |
| **Other Resources**  (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list) | * **Software related to physical geology subjects should be provided.** |

# G. Course Quality Evaluation

| **Evaluation**  **Areas/Issues** | **Evaluators** | **Evaluation Methods** |
| --- | --- | --- |
| Student course evaluation | Students | Direct |
| Peer-to-peer review | Faculty member | Direct |
| Periodic self- assessment of the program | Program coordinator | Direct |
| Faculty assessment of the course and effectiveness of teaching delivery | Instructor | Direct |
|  |  |  |

**Evaluation areas** (e.g., Effectiveness of teaching and assessment, Extent of achievement of course learning outcomes, Quality of learning resources, etc.)

**Evaluators** (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify)

**Assessment Methods** (Direct, Indirect)

# H. Specification Approval Data

|  |  |
| --- | --- |
| **Council / Committee** | **Department of Geology and Geophysics** |
| **Reference No.** |  |
| **Date** | **23rd October 2019** |