MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

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| **Module Information****معلومات المادة الدراسية** |
| **Module Title** | Structural Geology  | **Module Delivery** |
| **Module Type** | Core | * **☒ Theory**
* **☐ Lecture**
* **☒ Lab**
* **☒ Tutorial**
* **☒ Practical**
* **☒ Seminar**
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| **Module Code** | RGC2215 |
| **ECTS Credits**  | 5 |
| **SWL (hr/sem)** | 125 |
| **Module Level** | UGI | **Semester of Delivery** | Five |
| **Administering Department** | Remote Sensing |  **College** | Remote Sensing & Geophysics College |
| **Module Leader** | Ahmed Abbas Hasan  |  **e-mail** | ahmad.a.h@kus.edu.iq  |
| **Module Leader’s Acad. Title** | Assistant Professor | **Module Leader’s Qualification** |  |
| **Module Tutor** |  |  **e-mail** |  |
| **Peer Reviewer Name** |  |  **e-mail** |  |
| **Scientific Committee Approval Date** | 01/06/2023 | **Version Number** | 1.0 |

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| **Relation with other Modules****العلاقة مع المواد الدراسية الأخرى** |
| **Prerequisite module** | None | **Semester** |  |
| **Co-requisites module** | None | **Semester** |  |

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| **Module Aims, Learning Outcomes and Indicative Contents****أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية** |
|  **Module Aims****أهداف المادة الدراسية** | The course aims to study geological structures through:1- The student learns about the forces, stresses and factors that control the behavior of rock materials.2- The student describes the folds, classifies them and applies them in the field3- The student describes, classifies, and studies the faults in the field.4- The student classifies commas and studies their applied aspects.5- The student analyzes and explains plate tectonics and plate motion6- The student analyzes and interprets the stereographic projections of folds, cracks, and joints practically7- The student analyzes and explains the earth's magnetic field.8- The student understands the concept of the theory of continental drift.9- The student analyzes the reasons for the expansion of the ocean floor.10- The student will know the reasons for the wandering of the earth magnetic pole.11- The student studies the link between structural geology and other branches of geology.12- The student recognizes the engineering properties of rocks13- The student understands the changes in subsurface geological structures14- The student estimates the extent of the economic value of synthetic fisheries in the presence of oil15- The student applies the structural information in the field16- The student distinguishes between the existing structures of the oceanic crust and the continental crust17- The student distinguishes between the different types of continental shields18- The student learns the applications of geological structures used in water resources studies19- The student learns the applications of geological structures used in geomorphological studies20- The student designs some proposed solutions and treatments to study rock fractures |
| **Module Learning Outcomes****مخرجات التعلم للمادة الدراسية** | 1- Adopting the principle of streamlining the solution of research problems through logical rules.2- Students adopting the flow of scientific research steps through engineering systems.3- The ability to convince researchers to adopt different computer applications. 4- The ability to market the results of digital analysis of satellite images to beneficiaries by the simplest means. |
| **Indicative Contents****المحتويات الإرشادية** | Structural geology is one of the branches of earth science that deals with the study of geological structures, when and how they were formed. |

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| **Learning and Teaching Strategies****استراتيجيات التعلم والتعليم** |
| **Strategies** | Structural geology is one of the branches of earth science that deals with the study of geological structures, when and how they were formed.1- Using the method of direct application by the teacher on the blackboard2- Involve the student to solve some of the applications related to the paragraph.3- On the practical side, the exercises are re-executed by the teacher and teaching assistant.4- The student is asked to carry out the exercise under the direct supervision of the teacher and teaching assistant5- The student's work is evaluated and detailed notes are placed on his work so that he can avoid it in the future. |

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| **Student Workload (SWL)****الحمل الدراسي للطالب** |
| **Structured SWL (h/sem)****الحمل الدراسي المنتظم للطالب خلال الفصل** | 114 | **Structured SWL (h/w)****الحمل الدراسي المنتظم للطالب أسبوعيا** |  |
| **Unstructured SWL (h/sem)****الحمل الدراسي غير المنتظم للطالب خلال الفصل** | 11 | **Unstructured SWL (h/w)****الحمل الدراسي غير المنتظم للطالب أسبوعيا** |  |
| **Total SWL (h/sem)****الحمل الدراسي الكلي للطالب خلال الفصل** | 125 |

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| **Module Evaluation****تقييم المادة الدراسية** |
| **As** | **Time/Number** | **Weight (Marks)** | **Week Due** | **Relevant Learning Outcome** |
| **Formative assessment** | **Quizzes** | 2 | 10% (10) |  |  |
| **Assignments** | 2 | 10% (10) |  |  |
| **Projects / Lab.** | 1 | 10% (10) |  |  |
| **Report** | 1 | 10% (10) |  |  |
| **Summative assessment** | **Midterm Exam** | 2hr | 10% (10) |  |  |
| **Final Exam** | 2hr | 50% (50) |  |  |
| **Total assessment** | 100% (100 Marks) |  |  |

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| **Delivery Plan (Weekly Syllabus)****المنهاج الاسبوعي النظري** |
| **Week**  | **Material Covered** |
| **Week 1** | Course vocabulary or content:Vocabulary of the theoretical material to be completed-Introduction: Definition, Objectives, and Scope of Structural Geology. |
| **Week 2** | The relationship of structural geology to other branches of geology- Description of folds, parts of folds- Naming and classifying folds |
| **Week 3** | - Folds or folds: layering |
| **Week 4** | Mechanical principles: trapping pressure or rock pressure |
| **Week 5** | Different forces acting on bodies- Effort- stress |
| **Week 6** | -Factors controlling the behavior of materials |
| **Week 7** | **Mid-term Exam**  |
| **Week 8** | - Re-folding- Field study of folds |
| **Week 9** | Commas: Description and classification of commas- Field study of commas |
| **Week 10** | -Geotectonic |
| **Week 11** | -Fractures: the origin and mechanics of fracture formation |
| **Week 12** | -Description and general classification of fractures |
| **Week 13** | -The theory of continental drift and ocean floor expansion |
| **Week 14** | - The earth's magnetic field, the inversion of the earth's magnetic field, the wandering of the earth's magnetic pole |
| **Week 15** | -The theory of plate tectonics and plate movement, general characteristics of the tectonics of the Arabian Peninsula, the Middle East |
| **Week 16** | **Preparatory week before the final Exam** |

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| **Delivery Plan (Weekly Lab. Syllabus)****المنهاج الاسبوعي للمختبر** |
| **Week**  | **Material Covered** |
| **Week 1** | Horizontal layer mapsInclined layer maps |
| **Week 2** | Non-submersible fold mapsSubmersible fold mapsApplied aspects of separators |
| **Week 3** | Classification of FaultsField evidence (evidence) of the existence of faults |
| **Week 4** | Normal Fault: the mechanics of their formation. |
| **Week 5** | Size, position, and pattern of regular faults |
| **Week 6** | Reverse and impulsive faults: the engineering description has the mechanics of their formation |
| **Week 7** | Fault maps |

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| **Learning and Teaching Resources****مصادر التعلم والتدريس** |
|  | **Text** | **Available in the Library?** |
| **Required Texts** | 1- Fossen 2010 , Haakon , Structural Geology . | Yes  |
| **Recommended Texts** | 2- Pluijm and Marshak , 2003,Earth Structure: An Introduction to Structural Geology and Tectonics (Second Edition) .3- Ragan 2009 , Donal , Structural Geology: An Introduction to Geometrical Techniques. | No  |
| **Websites** |  |

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|  **Grading Scheme****مخطط الدرجات** |
| **Group** | **Grade** | التقدير | **Marks (%)** | **Definition** |
| **Success Group****(50 - 100)** | **A –** Excellent | **امتياز** | 90 - 100 | Outstanding Performance |
| **B -** Very Good | **جيد جدا**  | 80 - 89 | Above average with some errors |
| **C –** Good | **جيد** | 70 - 79 | Sound work with notable errors |
| **D –** Satisfactory | **متوسط**  | 60 - 69 | Fair but with major shortcomings |
| **E –** Sufficient | **مقبول**  | 50 - 59 | Work meets minimum criteria |
| **Fail Group****(0 – 49)** | **FX –** Fail | **راسب (قيد المعالجة)** | (45-49) | More work required but credit awarded |
| **F –** Fail | **راسب** | (0-44) | Considerable amount of work required |
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| **Note:** Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above. |