**Course Description Form**

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| 1. Course Name:
 |
| Electro chemistry  |
| 1. Course Code:
 |
| **307CHEC** |
| 1. Semester / Year:
 |
|  **second semester /Third year** |
| 1. Description Preparation Date:
 |
|  **2025** |
| 1. Available Attendance Forms:
 |
| mandatory |
| 1. Number of Credit Hours (Total) / Number of Units (Total)
 |
| **45h – 4 units** |
| 1. Course administrator's name (mention all, if more than one name)
 |
| **Name: Amir .F. Dawood** **Email:** **dr.amer960@uodiyala.edu.iq****Name: Ahmed Ismail Kareim****Email:** **ahmed\_kandory@uodiyala.edu.iq** |
| 1. Course Objectives
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| **Course Objectives** |  **The objective of this course is for students to gain a firm understanding of the mathematical and physical aspects of the behavior of chemical systems, chemical kinetics, and the properties of matter, electrochemistry and photochemistry.** |
| 1. Teaching and Learning Strategies
 |
| **Strategy** | **Engage, Explore, Explain, Elaborate, and Evaluate** |
| 1. Course Structure
 |
| **Week**  | **Hours**  | **Required Learning Outcomes**  | **Unit or subject name**  | **Learning method**  | **Evaluation method**  |
| **1** | **3** |  | **Photo sensitivity** | **Lecture, , Tutorials** | **The evaluation is done through class activities answer a set of questions, and then the students are asked to solve a homework assignment related to the lesson** |
| **2** | **3** |  | **Quantum yield** | **Lecture, , Tutorials** | **The evaluation is done through class activities answer a set of questions, and then the students are asked to solve a homework assignment related to the lesson** |
| **3** | **3** | **students get the knowledge****of chemical reactions.** | **Chemical kinetics** | **Lecture, , Tutorials** | **The evaluation is done through class activities answer a set of questions, and then the students are asked to solve a homework assignment related to the lesson** |
| **4** | **3** | **Make the students to be** **able to determine the rate****of reaction** | **Rate of reactions** | **Lecture, , Tutorials** | **The evaluation is done through class activities answer a set of questions, and then the students are asked to solve a homework assignment related to the lesson** |
| **5** | **3** |  | **Order of reaction and molecularity** | **Lecture, , Tutorials** | **The evaluation is done through class activities answer a set of questions, and then the students are asked to solve a homework assignment related to the lesson** |
| **6** | **3** |  | **Integrated rate** **equations** | **Lecture, , Tutorials** | **The evaluation is done through class activities answer a set of questions, and then the students are asked to solve a homework assignment related to the lesson** |
| **7** | **3** |  | **Half-life** | **Lecture, , Tutorials** | **The evaluation is done through class activities answer a set of questions, and then the students are asked to solve a homework assignment related to the lesson** |
| **8** | **3** |  | **Exam** | **Lecture, , Tutorials** | **The evaluation is done through class activities answer a set of questions, and then the students are asked to solve a homework assignment related to the lesson** |
| **9** | **3** | **Have a good knowledge****About the mechanism** **Of reaction** | **Collision theory,** **activated-complex theory** | **Lecture, , Tutorials** | **The evaluation is done through class activities answer a set of questions, and then the students are asked to solve a homework assignment related to the lesson** |
| **10** | **3** | **Students get familiar with****electrochemistry** | **Electrical conductance of solutions** | **Lecture, , Tutorials** | **The evaluation is done through class activities answer a set of questions, and then the students are asked to solve a homework assignment related to the lesson** |
| **11** | **3** |  | **Dissociation constant****Of electrolytes** | **Lecture, , Tutorials** | **The evaluation is done through class activities answer a set of questions, and then the students are asked to solve a homework assignment related to the lesson** |
| **12** | **3** | **Students get to learn****Various types of cells** | **Electrochemical cells** | **Lecture, , Tutorials** | **The evaluation is done through class activities answer a set of questions, and then the students are asked to solve a homework assignment related to the lesson** |
| **13** | **3** |  | **Redox potential** | **Lecture, , Tutorials** | **The evaluation is done through class activities answer a set of questions, and then the students are asked to solve a homework assignment related to the lesson** |
| **14** | **3** | **students are taught****fundamental aspects of surface chemistry** | **Surface chemistry** | **Lecture, , Tutorials** | **The evaluation is done through class activities answer a set of questions, and then the students are asked to solve a homework assignment related to the lesson** |
| **15** |  | Exam |  |  |  |
| 1. Course Evaluation
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| **Assignments and Report 10%, Quizzes 10%, Midterm Exam 30%, and Final Exam 50% Then the total is 100%** |
| 1. Learning and Teaching Resources
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| Required textbooks (curricular books, if any) | **Thermodynamic and photochemistry By** **Dr. Jalal Mohamed Saleh** |
| Main references (sources) | **Physical chemistry by Atkins** |
| Recommended books and references (scientific journals, reports...) |  |
| Electronic References, Websites | **Physical chemistry:Books-Amazon.com** |