

## COURSE SPECIFICATIONS

### Form

Course Title: **Research Methods and Seminar.**

Course Code: **4026831-3**



Date: 24-10-2018

Institution: Umm Al-Qura University.

College: Faculty of Applied Science

Department: Department of Chemistry

### A. Course Identification and General Information

1. Course title and code: **Research Methods and Seminar /4026831-3**

2. Credit hours: 3

3. Program(s) in which the course is offered. **M. Sc. in Chemistry**

(If general elective available in many programs indicate this rather than list programs)

4. Name of faculty member responsible for the course. **Dr. Ahmed Fawzy**

5. Level/year at which this course is offered: **3<sup>rd</sup> / 2<sup>nd</sup>**

6. Pre-requisites for this course (if any): --

7. Co-requisites for this course (if any): --

8. Location if not on main campus: **El-Abedyah, El-Azizya, and El-Zaher**

9. Mode of Instruction (mark all that apply):

a. Traditional classroom

percentage?

50

b. Blended (traditional and online)

percentage?

10

c. E-learning

percentage?

20

d. Correspondence

percentage?

f. Other

percentage?

20

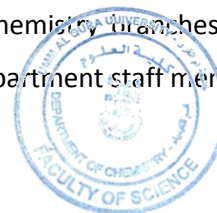
Comments:

## B Objectives

### 1. The main objective of this course

By the end of this course the students will be able to:

- Carry out a theoretical or experimental search in one of the chemistry branches (inorganic, physical, organic or analytical) under supervision of one of the department staff members.
- Present a full report about his seminar topic.
- Give a seminar with discussion about his obtained results.



### 2. Describe briefly any plans for developing and improving the course that are being implemented. (e.g. increased use of the IT or online reference material, changes in content as a result of new research in the field)

- Increased use of IT or web based reference material.
- Encourage students to carry out research reports in modern topics in chemistry using the library, data base services, and/or websites.

## C. Course Description (Note: General description in the form used in the program's bulletin or handbook)

### Course Description:

### 1. Topics to be Covered

| List of Topics   | No. of Weeks | Contact hours |
|--|--------------|---------------|
| Student will carry out a theoretical or experimental search in one of the chemistry branches (inorganic, physical, organic or analytical) under supervision of one of the department staff members. After finishing his search, he should present a full report and give a seminar with discussion about his obtained results. | 13           | 39            |



### 2. Course components (total contact and credit hours per semester):

|               |         | Lecture | Tutorial | Laboratory/<br>Studio | Practical | Other | Total |
|---------------|---------|---------|----------|-----------------------|-----------|-------|-------|
| Contact Hours | Planned | 39      | -        | -                     | -         | -     | 39    |
|               | Actual  | 39      | -        | -                     | -         | -     | 39    |
| Credit        | Planned | 3       | -        | -                     | -         | -     | 3     |
|               | Actual  | 3       | -        | -                     | -         | -     | 3     |

**3. Individual study/learning hours expected for students per week.**

**2 hours**

**4. Course Learning Outcomes in NQF Domains of Learning and Alignment with Assessment Methods and Teaching Strategies**

On the table below are the five NQF Learning Domains, numbered in the left column.

**First**, insert the suitable and measurable course learning outcomes required in the appropriate learning domains (see suggestions below the table). **Second**, insert supporting teaching strategies that fit and align with the assessment methods and targeted learning outcomes. **Third**, insert appropriate assessment methods that accurately measure and evaluate the learning outcome. Each course learning outcomes, assessment method, and teaching strategy should fit in together with the rest to form an integrated learning and teaching process. (Courses are not required to include learning outcomes from each domain.)

**Curriculum Map**

| Code #     | NQF Learning Domains And Course Learning Outcomes   | Course Teaching Strategies  | Course Assessment Methods  |
|------------|---|---|--|
| <b>1.0</b> | <b>Knowledge</b>  |   |  |
| 1.1        | Describe the selected techniques applied in chemistry field.  | <ul style="list-style-type: none"> <li>• Use of the internet to carry out some reports.</li> <li>• Scientific discussion.</li> <li>• Use the library to work duties and a small search.</li> </ul>      | <ul style="list-style-type: none"> <li>• Long and short essays.</li> <li>• Final presentation and exam.</li> </ul>                     |
| 1.2        | Remember the role of modern applications of chemistry in our life.                                  |   |  |
| 1.3        | Write on some selected topics in different branches of chemistry.                                   |   |  |
| 1.4        | Determine the mechanism of some selected new chemical reactions.                                    |   |  |
| 1.5        | Clarify some selected subjects in chemistry.  |   |  |
| <b>2.0</b> | <b>Cognitive Skills</b>   |   |  |
| 2.1        | Report the properties and structure of some new chemical compounds.                                 | <ul style="list-style-type: none"> <li>• Web-based study.</li> <li>• Scientific discussion</li> <li>• Library visits.</li> </ul>  | <ul style="list-style-type: none"> <li>• Measuring the response to the assignments.</li> <li>• Final presentation and exam.</li> </ul> |
| 2.2        | Estimate the properties of newly prepared compounds.  |   |  |
|            | Apply the modern analytical and spectral techniques in chemistry.                                   |   |  |
|            | Predict the distinctive features of new investigated compounds.                                     |   |  |
|            | Design new compounds for special applications.  |   |  |
| <b>3.0</b> | <b>Interpersonal Skills &amp; Responsibility</b>  |   |  |
| 3.1        | Manage resources, time and collaborate with members of the group                                    | <ul style="list-style-type: none"> <li>• Teamwork groups for cooperative work making.</li> <li>• Solving problems in groups during lecture.</li> <li>• Open discussion about recent topic of</li> </ul> | <ul style="list-style-type: none"> <li>• Oral presentations</li> <li>• Group discussion</li> <li>• Reports</li> </ul>                  |
| 3.2        | Use university library and web search engines for collecting information and search about different |   |  |

|            | topics  | the course  |   |
|------------|---|---|---|
| <b>4.0</b> | <b>Communication, Information Technology, Numerical</b>                           |   |   |
| 4.1        | Work effectively both in a team, and independently on solving chemistry problems. | <ul style="list-style-type: none"> <li>• Use digital libraries for literature survey</li> <li>• Use E-Learning Systems for the communication with lecturer through the course work</li> </ul> | <ul style="list-style-type: none"> <li>• Web-based student performance systems.</li> <li>• Individual and group presentations.</li> <li>• Evaluating the activities of the students through the semester .</li> </ul> |
| 4.2        | Communicate effectively with his lecturer and colleagues                          |   |   |
| 4.3        | Use information and communication technologies                                    |   |   |
| <b>5.0</b> | <b>Psychomotor(if any)</b>  |   |   |
| 5.1        | Not applicable  |   |   |

#### 5. Assessment Task Schedule for Students During the Semester

|   | Assessment task (i.e., essay, test, quizzes, group project, examination, speech, oral presentation, etc.) | Week Due | Proportion of Total Assessment |
|---|---|----------|--------------------------------|
| 1 | Assignments and activities.   | weekly   | 40%                            |
| 2 | Final presentation and exam.  | 16       | 60%                            |

#### D. Student Academic Counseling and Support

1. Arrangements for availability of faculty and teaching staff for individual student consultations and academic counseling. (include the time teaching staff are expected to be available per week)

- Availability of Staff members to provide counselling and advice.
- Office hours: During the working hours weekly.
- Academic advising for students.

#### E Learning Resources

##### 1. List Required Textbooks

- Chan K.Seng, Understanding Basic Chemistry Through Problem Solving: The Learner'S Approach, 1<sup>st</sup> ed., WS EDUCATION, 2018.
- Reza K. Haghi, Modern Physical Chemistry: Engineering Models, Materials, and Methods with Applications, 1<sup>st</sup> ed., Taylor and Francis, 2018.

##### 2. List Essential References Materials (Journals, Reports, etc.)

- Journal of Physical Chemistry A.
- Journal of the American Chemical Society.
- Journal of Materials Chemistry.

##### 3. List Electronic Materials, Web Sites, Facebook, Twitter, etc.

- <http://en.wikipedia.org/wiki/>
- <http://www.chemweb.com/>
- Websites on the internet relevant to the topics of the course

**4. Other learning material such as computer-based programs/CD, professional standards or regulations and software.**

- No others.

## F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (i.e. number of seats in classrooms and laboratories, extent of computer access, etc.)

**1. Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)**

- Appropriate teaching class including white board and data show.

**2. Technology resources (AV, data show, Smart Board, software, etc.)**

- Computer halls access for the students will be helpful in doing their tasks during the course.

**3. Other resources (specify, e.g. if specific laboratory equipment is required, list requirements or attach list) :** - No other requirements.

## G Course Evaluation and Improvement Procedures

**1. Strategies for Obtaining Student's Feedback on Effectiveness of Teaching**

- Student discussion with the instructor allow for continuous feedback through the course progress.
- Evaluation of student questionnaires.

**2. Other Strategies for Evaluation of Teaching by the Instructor or the Department**

- Discussions within the group of faculty teaching the course.
- Peer consultation on teaching strategies and its effectiveness.

**3. Procedures for Teaching Development**

- Workshops given by experts on new teaching and learning methodologies will be attended.
- Improving of the teaching strategies by monitoring the evaluation of the students progress through the semester

**4. Procedures for Verifying Standards of Student's Achievement (e.g. check marking by an independent member teaching staff of a sample of student's work, periodic exchange and remarking of tests or a sample of assignments with staff members at another institution)**

- Peer reviewing of random samples including periodic and final exams of the students will be done.

**5. Describe the planning arrangements for periodically reviewing course effectiveness and planning for developing it.**

- The specification will be evaluated periodically after each semester based on the results of the students and the report presented by the teaching staff that will be discussed with the course coordinator to improve the course.

**Name of Course Instructor: Dr. Ahmed Fawzy**

Signature:



Date Completed: 24 – 10 - 2018

Program Coordinator: **Dr. Ismail Ibrahim Althagafi**

Signature:



Date Received: 25/10/2018

