



# MARMARA UNIVERSITY Faculty of Arts and Sciences

## Chemistry Department

### SYLLABUS

2015-2016 Spring

Course level: Lisans (First Cycle)

| Course Code | Course Name              | Course Type | Course Pool (if exists) | Weekly Course |   | Local Credit | ECTS Credit | Semester |
|-------------|--------------------------|-------------|-------------------------|---------------|---|--------------|-------------|----------|
|             |                          |             |                         | T             | A |              |             |          |
| CHEM4552    | ORGANIC ELECTROCHEMISTRY | Seçimlik    |                         | 2             | 0 | 3            | 3           | 8        |

| Prerequisite<br>(Ders Kodu ve Adı, Min Harfli Başarı Notu)  | Prerequisite to<br>(Ders Kodu ve Adı, Min Harfli Başarı Notu)  | Weekly Time & Classroom Schedule<br>(Gün, Saat Aralığı, Derslik) |
|---|--|--|
| <Bu dersi bağlayan önceki derslerin kodu, adı, min hb> {Her bir dersi birbirinden noktalı virgülle ayırınız.} | <Bu dersin bağladığı sonraki derslerin kodu, adı, min hb> {Her bir dersi birbirinden noktalı virgülle ayırınız.} |  |

|                      |  |                      |                      |
|----------------------|--|----------------------|----------------------|
| Course Lecturer      | Dr. Melek Şirin Çelik  | Teaching Assistants  | <Unvan, Adı, Soyadı> |
| Office/Room No       | C-416  | Office/Room No       |                      |
| Phone+extension      | 02163451186-1237   | Phone+extension      |                      |
| E-mail               | <a href="mailto:msbaymak@marmara.edu.tr">msbaymak@marmara.edu.tr</a> | E-mail               |                      |
| Web                  |  | Web                  |                      |
| Office hour schedule | Monday 10.00-12.00   | Office hour schedule |                      |

|                   |  |
|-------------------|--|
| Course Objectives | The objective of the course is to introduce the use of electrochemical techniques in investigation of the behavior of organic substances and their analysis. |
|-------------------|--|

| Textbooks and or References | Course Web page: |
|-----------------------------|------------------|
|                             |                  |
|                             |                  |
|                             |                  |
|                             |                  |

|                          |    |  |
|--------------------------|----|--|
| Course Learning Outcomes | 1. | Learn the most commonly used electrochemical techniques                                |
|                          | 2. | Learn the classification and functional groups of organic compounds                    |
|                          | 3. | Understand the use of electrochemical techniques in investigation of organic compounds |
|                          | 4. | Define the common applications of electrochemistry                                     |
|                          | 5. | Learn about multidisciplinary working ethics   |

| Program Outcomes x Course Learning Outcomes Matrix | Program Outcomes |     |     |     |     |     |     |     |     |      |      |      |      |      |      | 1:Weak; 2:Medium; 3:Strong   |
|--|------------------|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------------------------------|
|  | PK1              | PK2 | PK3 | PK4 | PK5 | PK6 | PK7 | PK8 | PK9 | PK10 | PK11 | PK12 | PK13 | PK14 | PK15 | Course Learning Outcomes     |
|  | 3                |     | 2   |     |     |     |     |     |     |      |      |      |      |      |      | DK1. Learn the most commo... |
|  | 2                |     |     |     |     |     | 2   |     |     |      |      |      |      |      |      | DK2. Learn the classifica... |
|  | 2                |     |     |     |     |     | 3   |     |     |      |      |      |      |      |      | DK3. Understand the use o... |
|  | 2                |     |     |     |     |     | 2   |     |     |      |      |      |      |      |      | DK4. Define the common ap... |
|  |                  |     |     |     |     |     | 3   |     |     |      |      |      |      |      |      | DK5. Learn about multidis... |
|  | 2                | 0   | 2   | 0   | 0   | 0   | 3   | 0   | 0   | 0    | 0    | 0    | 0    | 0    | 0    | TOTAL EFFECT                 |

| Course Code                                 | Course Name                                     | Course Type  | Course Pool (if exists)                          | Weekly Course                        |                             | Local Credit  | ECTS Credit        | Semester                   |
|---|---|--|--|--------------------------------------|-----------------------------|---|--------------------|----------------------------|
|   |   |  |  | T                                    | A                           |   |                    |                            |
| <b>CHEM4552</b>                             | ORGANIC ELECTROCHEMISTRY                        | Seçimlik   |  | 2                                    | 0                           | 3   | 3                  | 8                          |
| <b>Language of Instruction</b>              | <b>Learning Activities and Teaching Methods</b> |  |  | <b>Course Presentation Form</b>      |                             |   |                    |                            |
| İngilizce                                   | Discussion and lecture notes                    |  |  | blackboard, power-point presentation |                             |   |                    |                            |
| <b>Week</b>                                 | <b>Date</b>                                     | <b>Weekly Course Content</b>   |  |                                      |                             | <b>Reference No - Section</b>                                     |                    |                            |
| 1. Week                                     |   | Introduction   |  |                                      |                             |   |                    |                            |
| 2. Week                                     |   | Potentiometry  |  |                                      |                             |   |                    |                            |
| 3. Week                                     |   | Most commonly used types of electrodes   |  |                                      |                             |   |                    |                            |
| 4. Week                                     |   | Introduction to voltammetry  |  |                                      |                             |   |                    |                            |
| 5. Week                                     |   | Pulse voltammetric techniques  |  |                                      |                             |   |                    |                            |
| 6. Week                                     |   | Other voltammetry techniques   |  |                                      |                             |   |                    |                            |
| 7. Week                                     |   | Overview of the chapters before the Midterm exam   |  |                                      |                             |   |                    |                            |
| 8. Week                                     |   | Midterm Exam   |  |                                      |                             |   |                    |                            |
| 9. Week                                     |   | Electrochemical classification of organic compounds  |  |                                      |                             |   |                    |                            |
| 10. Week                                    |   | Behavior of organic compounds in aqueous media   |  |                                      |                             |   |                    |                            |
| 11. Week                                    |   | Techniques used in investigating the reduction and oxidation mechanisms of organic compounds |  |                                      |                             |   |                    |                            |
| 12. Week                                    |   | Importance of electrochemistry in chemical analysis  |  |                                      |                             |   |                    |                            |
| 13. Week                                    |   | The applications of electrochemistry: Investigating basic problems                           |  |                                      |                             |   |                    |                            |
| 14. Week                                    |   | The applications of electrochemistry: Pharmacy   |  |                                      |                             |   |                    |                            |
| 15. Week                                    |   | The applications of electrochemistry: Environment  |  |                                      |                             |   |                    |                            |
| 16. Week                                    |   | Study Week   |  |                                      |                             |   |                    |                            |
| 17. Week                                    |   | Final Exam   |  |                                      |                             |   |                    |                            |
| <b>Evaluation Tool</b>                      |   | <b>YSSL (BDS)</b>  | <b>BNAL (BDS)</b>                                | <b>BDKL (BDS)</b>                    | <b>Calculation of Grade</b> |   |                    |                            |
|   |   |  |  |                                      |                             |   |                    |                            |
| <b>Evaluation Tools and Weight %</b>        | <b>Evaluation Tools</b>                         |  | <b>Quantity</b>                                  | <b>Date</b>                          | <b>Weight in Total (%)</b>  | <b>Weight in Semester Evaluation (%)</b>                          |                    |                            |
|   | Final Exam                                      |  |  |                                      | 60,00                       | 0,00  |                    |                            |
|   | Final-Make up Exam (if exists)                  |  |  |                                      | 60,00                       | 0,00  |                    |                            |
|   | <b>Semester Evaluation Tools</b>                |  |  |                                      | 40,00                       | 100,00  |                    |                            |
|   | Midterm Exam(s)                                 |  |  |                                      | 40,00                       | 100,00  |                    |                            |
|   | Quiz(es)  |  |  |                                      |                             |   |                    |                            |
|   | Project   |  |  |                                      |                             |   |                    |                            |
|   | Homework  |  |  |                                      |                             |   |                    |                            |
|   | Laboratory/Atelier                              |  |  |                                      |                             |   |                    |                            |
|   | Presentation / Seminar / Demo                   |  |  |                                      |                             |   |                    |                            |
|   | Research / Report / Other                       |  |  |                                      |                             |   |                    |                            |
|   | Attendance                                      |  |  |                                      |                             |   |                    |                            |
| <b>Student Workload Calculation</b>         |   |  |  |                                      |                             |   |                    |                            |
| <b>Tool</b>                                 | <b>Weekly Avr. Hour</b>                         | <b>Semester Total Hour</b>   | <b>Tool</b>                                      | <b>Weekly Avr. Hour</b>              | <b>Semester Total Hour</b>  | <b>Tool</b>   | <b>Weekly Avr.</b> | <b>Semester Total hour</b> |
| Theoretical Hours                           | 2,00  | 28   | Midterm Exam and Preparation                     |                                      |                             | Atelier and Preparation   |                    |                            |
| Applied Hours                               | 0,00  | 0  | Quiz and Preparation                             |                                      |                             | Presentation/Seminar/Demo and Preparation                         |                    |                            |
| Pre-class Self Study                        |   |  | Project and Preparation                          |                                      |                             | Research/ Report/ Other and Preparation                           |                    |                            |
| Pre-application/Post-application Self Study |   |  | Homework and Preparation                         |                                      |                             | Final Exam and Preparation  |                    |                            |
| <b>Total Student Workload Hours:</b>        |   | 28   | <b>1 ECTS Credit = 25 Student Workload Hours</b> |                                      |                             | <b>Workload Hesap Yanlısı: [28/25]=1. Calculation: Doğrusu=3.</b> |                    |                            |