



MARMARA UNIVERSITY Faculty of Arts and Sciences

Chemistry Department

SYLLABUS

2015-2016 Fall

Course level: Lisans (First Cycle)

| Course Code | Course Name | Course Type | Course Pool (if exists) | Weekly Course | | Local Credit | ECTS Credit | Semester |
|-----------------|-------------|-------------|-------------------------|---------------|---|--------------|-------------|----------|
| | | | | T | A | | | |
| CHEM4525 | Biopolymers | Seçimlik | | 2 | 0 | 3 | 3 | 1 |

| Prerequisite (Ders Kodu ve Adı, Min Harfli Başarı Notu) | Prerequisite to (Ders Kodu ve Adı, Min Harfli Başarı Notu) | Weekly Time & Classroom Schedule (Gün, Saat Aralığı, Derslik) |
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|-----------------------------|-------------------------------|-----------------------------|----------------------|
| Course Lecturer | Doç.Dr. Suzan Abdurrahmanoğlu | Teaching Assistants | <Unvan, Adı, Soyadı> |
| Office/Room No | C-426 | Office/Room No | |
| Phone+extension | 02163451186-1492 | Phone+extension | |
| E-mail | suzana@marmara.edu.tr | E-mail | |
| Web | | Web | |
| Office hour schedule | Monday 10.00-12.00 | Office hour schedule | |

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|--------------------------|--|
| Course Objectives | The aim of this course to provide detailed knowledge of the structure, function, properties and use of biopolymers |
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|------------------------------------|-------------------------|--|
| Textbooks and or References | Course Web page: | |
| | 1. | lecture notes |
| | 2. | Biopolymers, Biomedical and Environmental Applications, Kalia S, Averous L., Wiley |
| | | |

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|---------------------------------|----|---|
| Course Learning Outcomes | 1. | Explain and evaluate biopolymers properties based on their structure |
| | 2. | Know the structure and properties of important polysaccharides in biotechnology |
| | 3. | Describe the process and explain the material properties and environmental effects on biodegradation |
| | 4. | Understand and discuss the importance of biopolymer properties: biocompatibility and biodegradability |
| | | |
| | | |

| 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 | | | | 3 | | | | | | | 3 | | DK1. Explain and evaluate... |
| | 3 | | 2 | | | | 3 | | | | | | | 3 | | DK2. Know the structure a... |
| | 2 | | 2 | | | | 3 | | | | | | | 3 | | DK3. Describe the process... |
| | 3 | | 2 | | | | 3 | | | | | | | 3 | | DK4. Understand and discu... |
| | | | | | | | | | | | | | | | | |
| | 3 | 0 | 2 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | TOTAL EFFECT |

| | | |
|--------------------------------|---|---------------------------------|
| Language of Instruction | Learning Activities and Teaching Methods | Course Presentation Form |
|--------------------------------|---|---------------------------------|

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|---|--|---|--|------------------|----------------------|---|-------------|---------------------|
| | | | | T | A | | | |
| CHEM4525 | Biopolymers | Seçimlik | | 2 | 0 | 3 | 3 | 1 |
| İngilizce | Anlatım/sunum, soru-cevap, tartışma, örnek olay, proje, ödev | | Yüzyüze, power point sunumu, soru-cevap, karatahta, örnek olay | | | | | |
| Week | Date | Weekly Course Content | | | | Reference No - Section | | |
| 1. Week | | Introduction, definition of terms | | | | 1.2 | | |
| 2. Week | | Classification of biopolymers | | | | 1.2 | | |
| 3. Week | | Types and chemistry of biopolymers | | | | 1.2 | | |
| 4. Week | | Polysaccharides; cellulose, starch | | | | 1.2 | | |
| 5. Week | | Polysaccharides; chitin, hyaluronic acid, dextran | | | | 1.2 | | |
| 6. Week | | Bioplastics and biocomposites | | | | 1.2 | | |
| 7. Week | | Gluten, natural rubber | | | | 1.2 | | |
| 8. Week | | Midterm Exam | | | | | | |
| 9. Week | | Intrinsic properties of biopolymers | | | | 1.2 | | |
| 10. Week | | Electronic structure and conducting properties of biopolymers | | | | 1.2 | | |
| 11. Week | | Biopolymers for specific applications | | | | 1.2 | | |
| 12. Week | | Source of biopolymers | | | | 1.2 | | |
| 13. Week | | Modified cellulose fibres as biosorbent | | | | 1.2 | | |
| 14. Week | | Biopolymers in pharmacology | | | | 1.2 | | |
| 15. Week | | Biopolymers used in drug delivery | | | | 1.2 | | |
| 16. Week | | Study Week | | | | | | |
| 17. Week | | Final Exam | | | | | | |
| Evaluation Tool | | YSSL (BDS) | BNAL (BDS) | BDKL (BDS) | Calculation of Grade | | | |
| | | | | | | | | |
| Evaluation Tools and Weight % | Evaluation Tools | | Quantity | Date | Weight in Total (%) | Weight in Semester Evaluation (%) | | |
| | Final Exam | | | | 60.00 | 0.00 | | |
| | Final-Make up Exam (if exists) | | | | 60.00 | 0.00 | | |
| | Semester Evaluation Tools | | | | 100.00 | 100.00 | | |
| | Midterm Exam(s) | | | | 30.00 | 30.00 | | |
| | Quiz(es) | | | | | | | |
| | Project | | | | | | | |
| | Homework | | | | 10.00 | 10.00 | | |
| | Laboratory/Atelier | | | | | | | |
| | Presentation / Seminar / Demo | | | | | | | |
| | Research / Report / Other | | | | | | | |
| | Attendance | | | | | | | |
| Student Workload Calculation | | | | | | | | |
| Tool | Weekly Avr. Hour | Semester Total Hour | Tool | Weekly Avr. Hour | Semester Total Hour | Tool | Weekly Avr. | Semester Total hour |
| Theoretical Hours | 2.00 | 28 | Midterm Exam and Preparation | 1.00 | 14 | Atelier and Preparation | | |
| Applied Hours | 0.00 | 0 | Quiz and Preparation | | | Presentation/Seminar/Demo and Preparation | | |
| Pre-class Self Study | 1.00 | 14 | Project and Preparation | | | Research/ Report/ Other and Preparation | | |
| Pre-application/Post-application Self Study | | | Homework and Preparation | | | Final Exam and Preparation | 1.00 | 14 |
| Total Student Workload Hours: | | 70 | 1 ECTS Credit = 25 Student Workload Hours | | | Workload Calculation: | Hesap Doğru | |