

## Content

| Course Code | Course Name      | Semester | Theory | Practice | Lab | Credit | ECTS |
|-------------|------------------|----------|--------|----------|-----|--------|------|
| DEN103      | Marine Chemistry | 1        | 2      | 0        | 0   | 2      | 3    |

|                        |  |
|------------------------|--|
| Prerequisites          |  |
| Admission Requirements |  |

|                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Language of Instruction | Turkish                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Course Type             | Compulsory                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Course Level            | Associate Degree                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Objective               | 1. To teach about basic concepts and basic laws,<br>2. To teach about maritime chemistry and topics related to it.                                                                                                                                                                                                                                                                                                                                        |
| Content                 | Basic concepts and basic laws. Stoichiometric calculations. Gases, liquids and solids. Structure of atom and periodic table. Chemical bonds. Nuclear reactions. Solutions. Heat energy in chemical reactions. Rate of reactions. Equilibrium. Acids and bases. Physical and chemical properties of seawater. Corrosion and corrosion control. Sea paints. Fuel and oil chemistry. Fuel and oil types and properties. Hazardous substances. Sea pollution. |
| References              |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

## Theory Topics

| Week | Weekly Contents                                                          |
|------|--------------------------------------------------------------------------|
| 1    | Basic concepts and basic laws.                                           |
| 2    | Stoichiometric calculations. Gases, liquids and solids                   |
| 3    | Structure of atom and periodic table. Chemical bonds. Nuclear reactions. |
| 4    | Solutions. Heat energy in chemical reactions.                            |
| 5    | Rate of reactions. Equilibrium. Acids and bases.                         |
| 6    | Physical and chemical properties of seawater.                            |
| 7    | Corrosion and corrosion control.                                         |
| 8    | Sea paints.                                                              |
| 9    | Fuel and oil chemistry.                                                  |
| 10   | Fuel and oil chemistry.                                                  |
| 11   | Fuel and oil types and properties.                                       |
| 12   | Fuel and oil types and properties.                                       |
| 13   | Hazardous substances. Sea pollution.                                     |
| 14   | Hazardous substances. Sea pollution.                                     |