Basic and Applied Science Courses (BA)

Basic and Applied Science Courses Group

BA 118 – Chemistry

COURSE INFORMATION

Course Title:	Chemistry		
Code:	BA118.		
Hours:	Lecture – 2 Hrs.	Laboratory – 2 Hrs.	Credit –2.
Prerequisite:	none		

GRADING

Lab., Performance/Attendance:	10%
Midterm # 1/Assignments – (7th Week):	30%
Midterm # 2/Assignments – (12th Week):	20%
Final Exam:	40%

COURSE DESCRIPTION

The Science of Chemistry characterized its close relate with the other branches of sciences and with the technological applicants of these sciences and with technological applicants of these sciences, which emerge in the mineral oil, medicate, petroleum, petrochemicals, chemical textile and other industries. This course includes topics of specialized chemical engineering technology without going through details.

TEXT BOOKS& REFERENCES

Material Science and engineering Third edit William D. callister, Jr.1994.

Corrosion Engineering M.G.Fontana 1984

Corrosion and corrosion control Third Edit.H.H Uppal and R.v. Revice. 1985

Engineering Chemistry.M.M uppal. 1990

National Geographic.vol 176, No.G, 1989

Drew principhic.vol. 176, No.G, 1989

Drew principles of industrial water treatment. Third edit. Drew chemical corporat

Corrosion for science Engineering and Edit K R Trethewey 1995.

COURSE AIM

The aim of course develops for the student, bases of scientific engineering chemistry, and creative student's scale to identify the technical problems which are related to engineering chemistry.

SPECIFIC OUTCOMES OF INSTRUCTION

- The student will be provided with knowledge about the effects of the environment on the material whatever its form is indifferent purposes.
- The students will able to control dominate and protect the used materials.
- The students will be able to solve industrial problems in a scientific method.

COURSE OUTLINE

Week Number 1: Electrochemical Reactions and cells. volumetric Analysis (Practical)

Week Number 2: Principles of corrosion. Titrate Technique, Determinate of acidity (practical)

Week Number 3: Metals and corrosive Environments. Determinate of Alkalinity and chloride (practical)

Week Number 4: Forms of corrosion uniform, Galvanic and Differential aeration cell. Determination of Hardness (Practical)

Week Number 5: Pitting, stress corrosion cracking and intergranular corrosion forms. Determination of Dissolved oxygen (Practical)

Week Number 6: Atmospheric and Erosion Corrosion. Spectrophotometer Analysis (Practical)

Week Number 7: Coating and inhibitors as protection methods. Determination of nitrite and nitrate (Practical)

Week Number 8: Cathodic protection. Determination of phosphate and silica (Practical)

Week Number 9: Classification of fuel, properties of liquid fuel. Determination of some heavy Metals

(Practical)

Week Number 10: Combustion of fuel. Determination of fluorine and chlorine (Practical)

Week Number 11: Air supply and Exhaust Gases. Determination of turbidity (Practical)

Week Number 12: Classification of lubricants Advantages and disadvantages of different types. Oil Analysis Determination of Viscosity and T.B.N (Practical)

Week Number 13: Properties of lubricants and Additives. Determination of Insoluble and Saltwater (Practical)

Week Number 14: Nature of impurities in water, soft and hard water Effect of using impure water on Boilers performance. Determination of Acidity and water content (Practical)

Week Number 15: Water Treatment. Determination of PH (Practical)

Week Number 16: Air and water pollution. Determination of TDS and salinity(Practical)

COURSE COORDINATOR AND DEMAND

Course Coordinator: Dr.Samir Youssef.

Course Demand: *Required*