



CHEM 342

# POLYMERS & PETROCHEMICALS

FOR BSC'S STUDENTS IN CHEMISTRY PROGRAM

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PRE-REQUISITES COURSE

CHEM 241

CREDIT HOURS 2 (2+0+0)

COURSE OBJECTIVES

Upon successful completion of this course, the student should be able to:

- Learn the polymer definitions, different classification systems,
- Learn the stereochemistry of polymers and their physical and chemical properties.
- Learn the general methods for polymer synthesis (condensation and addition polymerization).
- Learn what is the copolymerization.
- Learn the different types of polymerization techniques and industrial applications.
- Learn about oil (origin, composition, importance) and methods of petrochemicals production. Learn about composition and petrochemicals from natural gas.



## Topic **COURSE** Descriptions

- Introduction & definitions
- General Methods for Polymer Synthesis
- Condensation Polymerization
- Addition Polymerization
- Different Polymerization Techniques & Applications
- Copolymerization
- Degradation & Stabilization of Polymers
- Petroleum & Petrochemicals from Benzene
- Petroleum & Petrochemicals from Toluene
- Petroleum & Petrochemicals from Xylene
- Petrochemicals from Natural Gas

## References

- **Fundamentals of Polymerization; Broja M. Mandal. World Scientific ; 2013**
- **Polymer Chemistry, Koltzenburg, Sebastian, Maskos, Michael, Nuyken, Oskar, Springer, 2017.**
- **Textbook of Polymer Science, Fred W. Billmeyer, 3<sup>rd</sup>, 1984.**
- **كتاب الصناعات البترولية والبتروكيماوية للدكتور سالم بن سليم الذياب - ردمك 277-27-9960 ، 1423 هـ**

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