



CHEM 342

POLYMERS & PETROCHEMICALS

FOR BSC'S STUDENTS IN CHEMISTRY PROGRAM

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 Scienitific ; 2013
- *Polymer Chemistry*, Koltzenburg, Sebastian, Maskos, Michael, Nuyken, Oskar, Springer, 2017.
- *Textbook of Polymer Science*, Fred W. Billmeyer, 3rd, 1984.
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