

Lecturer Title:

- 1- Introduction: General biosynthesis pathways of secondary metabolites.
- 2- Carbohydrates.
- 3- Glycosides: Biosynthesis, physical and chemical properties; cardiac glycosides; saponin glycosides; anthraquinone glycosides; flavonoid glycosides; cyanophore glycosides.
- 4- Glycosides: Isothiocyanate glycosides; aldehyde glycosides; alcoholic glycosides; phenolic glycosides; lactone glycosides; coumarins and chromones.
- 5- Resins and resin combination; tannins.
- 6- Lipids: fixed oils and waxes.
- 7- Volatile oils: Introduction; chemistry of volatile oils; biosynthesis of volatile oils; hydrocarbons as volatile oils; alcohols as volatile oils; aldehydes as volatile oils.
- 8- Ketones as volatile oils; Phenols as volatile oils; Oxides as volatile oils; Ester as volatile oils; Phenolic ethers as volatile oils.
- 9- Non- medicinal toxic plants.
- 10- Vitamins and Amino acids.