441 CHEM

Organic Compounds Spectroscopy

Course Description

- Type of molecular transitions that correspond. [UV-VIS, valence electronic; infrared, IR, bond vibrations; microwave, bond rotation; radio wave, nuclear magnetic resonance.
- NMR (1H and 13C)
- Infra-red (FT-IR) and Ultraviolet (UV)
- Mass spectroscopy (MS)

References

- Organic spectroscopy, by Alhazimi and Alshowiman
- Spectroscopic identification of organic compounds, by Silverstein and others.
- https://www.amazon.com/Spectroscopy-Organic-Compounds

Course Content

No	List of Topics	Contact Hours
1	Introduction	2
2	UV-Vis	4
3	IR	4
4	Applications of UV-Vis and IR	2
5	^{1}H-NMR	6
6	^{13}C-NMR	4
7	Mass Spectrometry	4
8	Applications and problem solving	4
Total		30

Course Learning Outcomes

- Recognize the principles of spectroscopy and their types
- Describe differences between spectral techniques
- Outline and recognize the principles of spectral analysis
- List areas of application of different spectroscopic techniques.
- Compare and summarize differences between spectral techniques
- To apply different spectral techniques in solving spectral problems.
- To design major product follow up

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Zero sheet	1	0%
2	Homework-1	4	5%
3	Quiz 1	5	5%
4	Mid-Term exam -1	8	25%
5	Mid-Term exam -2	14	25%
6	Final exam	16	40%
7			
8			