



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 ( $^1\text{H}$  and  $^{13}\text{C}$ )
- ▶ 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>

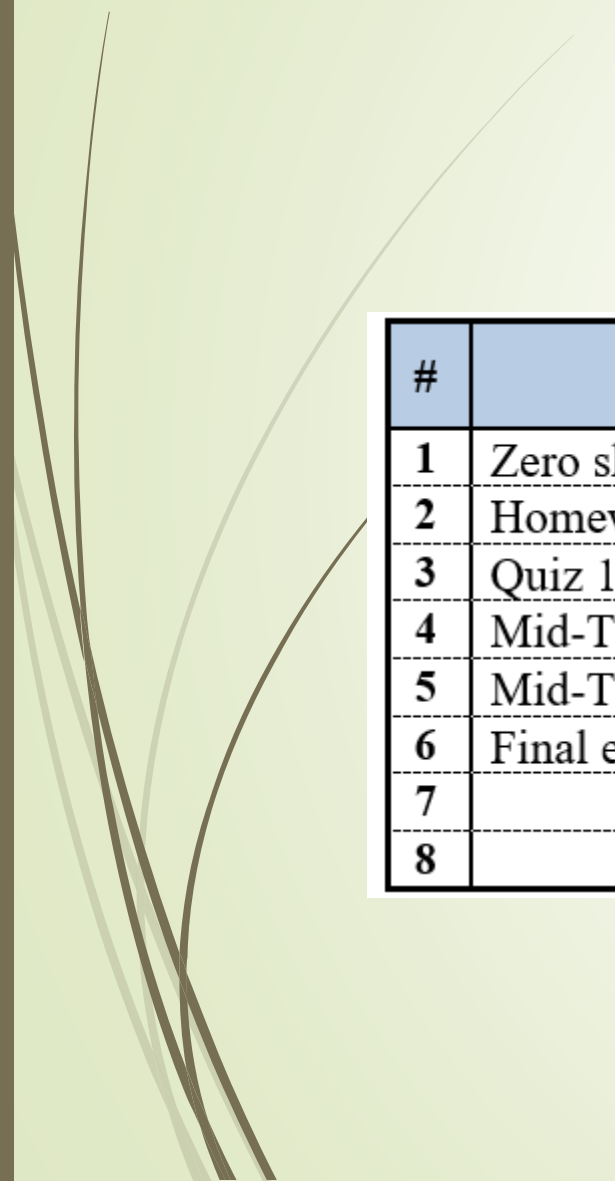

# Course Content

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	$^1\text{H}$ -NMR	6
6	$^{13}\text{C}$ -NMR	4
7	Mass Spectrometry	4
8	Applications and problem solving	4
<b>Total</b>		<b>30</b>



# 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			