MMC 202-P Archaea - Ecology, Physiology, Biochemistry, Genetics [P]
Course Credit: 1
Contact Hours: 30

1. Isolation and culturing of archaea.
2. Identification of isolate:
2.1 Biochemical tests for archaea.
2.2 Extraction of archaeal pigment and characterization using UV-Vis spectroscopy.
2.3 Cellular lipids - Extraction and chromatographic resolution of lipids.
3. Screening for hydrolytic enzymes.

References (Composite list for theory and practicals):

1. Woese, C. R., Fox, G. E., (1977) Phylogenetic structure of the prokaryotic domain: the primary kingdoms. Proc Natl Acad Sci USA. 74: 5088–5090.
2. Blum, P., Archaea: New Models for Prokaryotic Biology, Academic Press.
3. Cavicchioli, R., Archaea**:** Molecular and Cellular Biology, ASM Press.
4. Garrett, R. A. and Hans-Peter, K., Archaea: Evolution, Physiology and Molecular Biology John Wiley and Sons.
5. Howland, J. L., The Surprising Archaea: Discovering Another Domain of Life, Oxford University Press.
6. Barker, D. M., Archaea: Salt-lovers, Methane-makers, Thermophiles and Other Archaeans, Crabtree Publishing Company.
7. Munn, C., Marine Microbiology: Ecology and Applications, Garland Science, Taylor and Francis Group, N.Y.
8. Boone, D. R. and Castenholz, R. W., Bergey's Manual of Systematic Bacteriology: The Archaea and The Deeply Branching and Phototrophic Bacteria, Springer Science and Business Media.
9. Corcelli, A. and Lobasso, S., (2006) Characterization of Lipids of Halophilic Archaea. Methods in Microbiology, 35: 585-613.
10. Rothe, O. and Thomm, M., (2000) A simplified method for the cultivation of extreme anaerobic archaea based on the use of sodium sulfite as reducing agent, Extremophiles. 4:247-252.