



**MANGALORE UNIVERSITY**

**DEPARTMENT OF BIOSCIENCES**

**MSc Food Science & Nutrition**

**FNH 451 - VITAMINS IN HUMAN NUTRITION**

**52 Hr (13× 4 units)**

**Course outcome:**

- Describe the importance of vitamins in human metabolisms and its contribution.
- Classify the vitamins upon its solubility in food and human system.
- Write down the chemical properties of both fat and water soluble vitamins.
- Write down the source, digestion, absorption and functions of both fat and water soluble vitamins.
- Describe the effect of dietary deficiency and its complications of each vitamin.
- Describe how certain vitamins interact with some drugs.

**Unit I:** Fat soluble vitamins: Classifications of vitamins, History, chemistry, toxicity, fat soluble vitamin- A, D, E & K, Physiological action, transport and utilization, Storage, dietary sources, losses during preparation and handling, conversion of beta carotene into vitamin A

**Unit II:** Water soluble vitamins: Thiamine, riboflavin, niacin, vitamin B12 – functions, digestion, absorption, utilization, deficiency and sources.

**Unit III:** Water soluble vitamins: Folic acid, pyridoxine, pantothenic acid, biotin, ascorbic acid- functions, digestion, absorption, utilization, losses in preparation and handling, deficiency and sources.

**Unit IV:**Vitamin like compounds and Pseudo vitamins: Choline, carotene, inositol, taurine, flavanoid, pangamate, Vitamin drug interaction.

## **REFERENCES**

- Nutrition Science, B. Srilakshmi
- Clinical Nutrition.Gibney M J, Elia M, Ljungqvist&DowsettJ (2005) The nutrition Society Textbook Series, Blackwell publishing Company
- Basic Nutrition and Diet Therapy 11<sup>th</sup> ed. Williams, S R (2001), Times Mirror Mosby College Publishing
- Krause's Food and Nutrition Therapy 12<sup>th</sup> ed.,Mahan, L K and Escott StumpS. (2008)., Saunders Elsevier

