



MANGALORE UNIVERSITY

DEPARTMENT OF BIOSCIENCES

MSc Food Science & Nutrition

FNH 452 - MINERALS IN HUMAN NUTRITION

52 Hr (13× 4 units)

Course outcome:

- Describe the importance of minerals in human metabolisms and its contribution.
- Classify the minerals depending on its requirement in human body.
- Write down the chemical properties of major minerals.
- Write down the source, digestion, absorption and functions of major, minor and trace minerals.
- Describe the effect of dietary deficiency and its complications of each mineral.
- Describe how certain minerals produces toxicity and interact with some drugs.

Unit I: Macro minerals: Calcium, phosphorus: Calcium in skeleton and other tissues, bone mass and effect of diet, calcium absorption and utilization, calcium balance, requirement, sources, deficiency and toxicity. Phosphorus: concentration in the body, calcium and phosphorus ratio, absorption and utilization, deficiency and toxicity

Unit II: Macro minerals: Sodium, Potassium, magnesium and Sulphur: Metabolism and electrolyte balance, absorption, utilization, role in human nutrition, deficiency, toxicity, sources

Unit III: Micro minerals: Iron, iodine, zinc, copper, cobalt; metabolism, role in human nutrition, deficiency, toxicity, role of prevention for the deficiency

Unit IV: Ultra trace minerals: Cobalt, Nickel, Cadmium. Manganese, molybdenum, chlorine, selenium, fluorine: Metabolism, role in human nutrition, deficiency, toxicity, sources, Minerals and drug interaction

REFERENCES

□ Nutrition Science, B. Srilakshmi

□ Clinical Nutrition. Gibney M J, Elia M, Ljungqvist & Dowsett J (2005) The nutrition Society Textbook Series, Blackwell publishing Company

□ Basic Nutrition and Diet Therapy 11th ed. Williams, S R (2001), Times Mirror Mosby College Publishing

Krause's Food and Nutrition Therapy 12th ed., Mahan, L K and Escott Stump S. (2008)., Saunders Elsevier

