

## **BSHND 403: RECENT ADVANCES IN CLINICAL NUTRITION**

### **Course learning outcomes**

At the end of this course and following completion of an appropriate amount of independent study, a student will be able to;

- Understand the role of macronutrients and micronutrients in normal physiological pathways.
- Identify and explain the role of specific nutrients in the metabolic pathways and in relation to major diseases.
- Identifying alternate feeding routes, their relation with the nutritional biochemistry and their application in a clinical setting.
- Design enteral and parenteral feeding regimens.

### **Content-Theory:**

- 1. Advanced study of principles of nutrition in relation to health and disease;**
  - The interrelationships of nutrition with biochemical,
  - Physiological and anatomical changes associated with acute,
  - Chronic, and terminal illness,
  - Surgery, and trauma are explored;
- 2. Formulation of medical nutrition therapy through advanced nutritional management techniques plans using the Nutrition Care Process framework by determining nutrition diagnoses;**
- 3. Macro/micronutrient and fluid/electrolyte needs;**
- 4. Routes of feeding, and implementation plans;**
  - Clinical cases are used to address metabolic
  - Nutrition status and patient applications,
  - Topics including diabetes,
  - Nutrition support;
- 5. Enteral and parenteral nutrition;**
  - Surgery and critical care,
  - Burns,

- Immunology,
- Cancer,
- Pulmonary,
- Gastrointestinal,
- Liver and renal diseases.

### **Detailed Course Outline**

1. Introduction to Nutrition Care Process
2. Factors affecting nutritional status
3. Basic Terminology
  - Nutritional assessment,
  - Monitoring and evaluation
4. Nutritional diagnosis and sample codes
5. Nutritional diagnosis
  - PES statement
6. Nutrition Intervention,
  - Monitoring and evaluation
7. Documentation
  - Chart notes using SOAP format
8. Documentation
  - Chart notes using ADMIE format
9. Nutrition support
  - Feeding routes
10. Nutrition support
  - Enteral Feeding- introduction, Location, type. Short and long term enteral access
11. Enteral nutrition
  - classification and selection of enteral formula
12. Enteral nutrition
  - administration techniques
13. Enteral nutrition
  - administration techniques and complications
14. Enteral Nutrition
  - Monitoring
15. Parenteral Nutrition Support
  - Introduction, importance
16. Parenteral Solution Compositions
  - Carbohydrates and Proteins
17. Parenteral Solution Compositions
  - Lipid formulations
18. Modes of Administration in Parenteral Nutrition

- Continuous and cyclic Infusion
- 19. Parenteral Nutrition Complications
- 20. Parenteral Nutrition Complications
- 21. Parenteral Nutrition solution calculations
- 22. Parenteral Nutrition solution calculations
- 23. PN-Monitoring
- 24. PN-Monitoring
- 25. Surgery
  - Introduction to hypermetabolic state,
  - Etiology
  - Pre and Post-operative care
- 26. Surgery
  - Clinical Manifestations, and Nutrition therapy for surgery
- 27. Surgery
  - Nutrition Care process in Surgery
- 28. Burns
  - Introduction
  - Body surface area and its relationship with burns
- 29. Burns
  - Clinical manifestations and MNT in Burns
- 30. Burns
  - NCP in Burns
- 31. Cancer
  - Introduction and stages of cancer
- 32. Cancer
  - Role of nutrition in the prevention of cancer

### **Teaching-Learning Strategies:**

Teaching will be a combination of class lectures, class discussions, and group work. Short videos/films will be shown on occasion.

### **Assignments:**

The sessional work will be a combination of written assignments, class quizzes, presentation, and class participation/attendance.

### **Assessments and Examination:**

Sessional Work: 25 marks

Midterm Exam: 35 marks

Final Exam: 40 marks

## **Recommended Readings:**

1. Mahan, L. K. & Escott-Stump, S. (2008). Krause's Food & Nutrition Therapy, Elsevier Saunders
2. Nelms, M. & Sucher, K. (2010). Nutrition Therapy and Pathophysiology, Cengage Learning.
3. Vishwanath, M. S. (2011). Introduction to Clinical Nutrition. (3<sup>rd</sup> edition). Marcel Dekker, Inc. NY, USA

