

## **BSHND 305: FUNCTIONAL FOODS AND NUTRACEUTICALS**

### **Course Learning Outcomes:**

- To find out sources of functional foods & nutraceuticals and their impact on nutrition and health
- To familiarize with the standards and regulations used globally regarding regulatory issues and usage of functional foods
- To assess international trade and marketability of functional foods.

### **Content-Theory:**

- 1. Functional foods and nutraceuticals:**
- 2. past, present, future and health claims;**
- 3. functional foods and their impact on nutrition and health obesity, diabetes, cardiovascular diseases, hypertension and cancer;**
- 4. Functional ingredients and bioactive molecules:**
  - Isoflavones, lycopene, polyphenols,
  - fiber, omega-3 & -6 fatty acids, conjugated linoleic acid, antioxidants, prebiotic and probiotic
- 5. Functional foods from different food groups**
  - Cereals, dairy, meat, fruits and vegetables;
- 6. Regulatory systems governing the production and distribution of functional food -national and international;**
- 7. Standard and regulations of various agencies:**
  - FDA, EC, FAO/WHO, Health Canada;
- 8. Guidelines for the assessment of functional foods;**
  - Marketing and regulatory issues;
  - Conventional and emerging food processing technologies for functional food production; Toxicological and safety aspects of functional foods
- 9. Asian functional foods**
  - Functional foods in international market and growth in Pakistan.

### **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. FAO (Food and Agriculture Organization of the United Nations). (2007). Report on Functional Foods. Food and Agriculture Organization of the United Nations, Rome, Italy.
2. Shi, J., Ho, C.T. & Shahidi, F. (2005). Asian Functional Foods. Marcel Dekker/CRC Press, New York, U.S.A.
3. Shi, J., Mazza, G. & Maguer, M.L. (2002). Functional Foods: Biochemical and Processing Aspects, Vol. 2. CRC Press, Traylor & Francis Group, Boca Raton, New York, USA.
4. Wildman, R.E.C. (2006). Handbook of Nutraceuticals and Functional Foods, (2nd ed.) CRC Press, Traylor & Francis Group, Boca Raton, New York, USA.

