

## SECOND SEMESTER

Course No.	Title of Course	Credit Hours
HND	Macronutrients in Human Nutrition	3(3-0) FC
Eng	English-II	3(3-0) CC
SSH	Islamic Studies/Ethics	2(2-0) CC
Anatomy	Human Anatomy	3(2-1) FC
Physio	Human Physiology-I	3(2-1) FC
Sociology	Fundamentals of Sociology	3(3-0) GC
		17 (14-3)

### **HND MACRONUTRIENTS IN HUMAN NUTRITION 3(3-0)**

#### **Learning Outcomes:**

- To abreast knowledge about the normal nutrient metabolism in healthy human
- To understand interactions between the intake, absorption, transport, processing, storage, catabolism and excretion of nutrients and the regulation of metabolic homeostasis in the intact organism

#### **Theory:**

Carbohydrates: nature, structures; Classification and functions of carbohydrates: monosaccharaides, disaccharides, oligosaccharides, polysaccharaides; Digestion and absorption of carbohydrates: glycolitic pathway, glycolysis, glycogenesis, glycogen catabolism, tricarboxylic acid cycle and pentose phosphate pathway; Biosynthesis of carbohydrates: gluconeogenesis; Regulation of carbohydrate metabolism pathways; CHO metabolism in diabetes; Proteins: structural features, characteristics, functions; Amino acids: biosynthesis and degradation, food sources (on the basis of their functions in human body);. Digestion and absorption; Metabolic fates of amino acids: deamination, transamination, Urea cycle, Ketogenic amino acids, Glucogenic amino acids, Protein metabolism in liver and kidney diseases, Protein energy malnutrition; Lipids – nature, classification; Fatty acids: saturated, unsaturated, polysaturated, glycerol, cholesterol, sterol; Lipoprotein systems (blood lipids); Fats biosynthesis: lipids, phospholipids and sphingolipids; Lipid biosynthesis: cholesterol, sterol; Lipid oxidation; Essential fatty acids: sources, health benefits; Adipose tissues; Digestion, absorption, metabolism and transportation of lipids; Oxidation of fatty acids (beta oxidation); Ketone bodies.

#### **Suggested Readings:**

1. Berdanier, C.D. and J. Zempleni. 2009. Advances Nutrition: Macronutrients, micronutrients and Metabolism. CRC Press, Taylor & Francis Group, Boca Raton, FL, USA.
2. Byrd-Bredbenner, C., G. Moe, D. Beshgetoor and J. Berning. 2015. Wardlaw's Perspectives in Nutrition, 10<sup>th</sup> ed. McGraw-Hill Education, Columbus, OH, USA.

3. David L.N., A.L. Lehninger and M.M. Cox. 2013. Lehninger Principles of Biochemistry, 6<sup>th</sup> ed. W.H. Freeman and Company, New York.
4. Gropper, S.S. and J.L. Smith JL. 2013. Advanced Nutrition and Human Metabolism, 6<sup>th</sup> ed. Cengage Learning, Belmont, CA, USA.

## **English II (Communication Skills)**

**Credit Hrs. 3(3-0)**

### **Objectives:**

Enable the students to meet their real life communication needs.

### **Course Contents:**

#### **Paragraph writing**

Practice in writing a good, unified and coherent paragraph

#### **Essay writing**

Introduction

#### **CV and job application**

Translation skills

Urdu to English

#### **Study skills**

Skimming and scanning, intensive and extensive, and speed reading, summary and précis writing and comprehension

#### **Academic skills**

Letter/memo writing, minutes of meetings, use of library and internet

#### **Presentation skills**

Personality development (emphasis on content, style and pronunciation)

*Note: documentaries to be shown for discussion and review*

### **Recommended Books:**

#### **Communication Skills:**

- a) Grammar
  1. Practical English Grammar by A.J. Thomson and A.V. Martinet. Exercises 2. Third edition. Oxford University Press 1986. ISBN 0 19 431350 6.
- b) Writing
  1. Writing. Intermediate by Marie-Christine Boutin, Suzanne Brinand and Françoise Grellet. Oxford Supplementary Skills. Fourth Impression 1993. ISBN 019 435405 7 Pages 45-53 (note taking).
  2. Writing. Upper-Intermediate by Rob Nolasco. Oxford Supplementary Skills. Fourth Impression 1992. ISBN 0 19 435406 5 (particularly good for writing memos, introduction to presentations, descriptive and argumentative writing).
- c) Reading
  1. Reading. Advanced. Brian Tomlinson and Rod Ellis. Oxford Supplementary Skills. Third Impression 1991. ISBN 0 19 453403 0.

2. Reading and Study Skills by John Langan
3. Study Skills by Riachard Yorcky.

**SSH                    ISLAMIC STUDIES/ETHICS                    Credit hours 2 (2-0)**  
**(Compulsory)**

**Objectives:**

This course is aimed at:

- 1 To provide Basic information about Islamic Studies
- 2 To enhance understanding of the students regarding Islamic Civilization
- 3 To improve Students skill to perform prayers and other worships
- 4 To enhance the skill of the students for understanding of issues related to faith and religious life.

**Detail of Courses:**

**Introduction to Quranic Studies**

- 1) Basic Concepts of Quran
- 2) History of Quran
- 3) Uloom-ul -Quran

**Study of Selected Text of Holly Quran**

- 1) Verses of Surah Al-Baqra Related to Faith(Verse No-284-286)
- 2) Verses of Surah Al-Hujrat Related to Adab Al-Nabi (Verse No-1-18)
- 3) Verses of Surah Al-Mumanoon Related to Characteristics of faithful (Verse No-1-11)
- 4) Verses of Surah al-Furqan Related to Social Ethics (Verse No.63-77)
- 5) Verses of Surah Al-Inam Related to Ihkam(Verse No-152-154)

**Study of Selected Text of Holly Quran**

- 1) Verses of Surah Al-Ihzab Related to Adab al-Nabi (Verse No.6,21,40,56,57,58.)
- 2) Verses of Surah Al-Hashar (18,19,20) Related to thinking, Day of Judgment
- 3) Verses of Surah Al-Saf Related to Tafakar,Tadabar (Verse No-1,14)

**Seerat of Holy Prophet (S.A.W) I**

- 1) Life of Muhammad Bin Abdullah ( Before Prophet Hood)
- 2) Life of Holy Prophet (S.A.W) in Makkah
- 3) Important Lessons Derived from the life of Holy Prophet in Makkah

**Seerat of Holy Prophet (S.A.W) II**

- 1) Life of Holy Prophet (S.A.W) in Madina
- 2) Important Events of Life Holy Prophet in Madina
- 3) Important Lessons Derived from the life of Holy Prophet in Madina

**Introduction to Sunnah**

- 1) Basic Concepts of Hadith
- 2) History of Hadith

- 3) Kinds of Hadith
- 4) Uloom –ul-Hadith
- 5) Sunnah & Hadith
- 6) Legal Position of Sunnah

### **Selected Study from Text of Hadith**

#### **Introduction to Islamic Law & Jurisprudence**

- 1) Basic Concepts of Islamic Law & Jurisprudence
- 2) History & Importance of Islamic Law & Jurisprudence
- 3) Sources of Islamic Law & Jurisprudence
- 4) Nature of Differences in Islamic Law
- 5) Islam and Sectarianism

#### **Islamic Culture & Civilization**

- 1) Basic Concepts of Islamic Culture & Civilization
- 2) Historical Development of Islamic Culture & Civilization
- 3) Characteristics of Islamic Culture & Civilization
- 4) Islamic Culture & Civilization and Contemporary Issues

#### **Islam & Science**

- 1) Basic Concepts of Islam & Science
- 2) Contributions of Muslims in the Development of Science
- 3) Quran & Science

#### **Islamic Economic System**

- 1) Basic Concepts of Islamic Economic System
- 2) Means of Distribution of wealth in Islamic Economics
- 3) Islamic Concept of Riba
- 4) Islamic Ways of Trade & Commerce

#### **Political System of Islam**

- 1) Basic Concepts of Islamic Political System
- 2) Islamic Concept of Sovereignty
- 3) Basic Institutions of Govt. in Islam

#### **Islamic History**

- 1) Period of Khlaft-E-Rashida
- 2) Period of Ummayyads
- 3) Period of Abbasids

#### **Social System of Islam**

- 1) Basic Concepts of Social System of Islam
- 2) Elements of Family
- 3) Ethical Values of Islam

#### **Reference Books:**

- 1) Hameed ullah Muhammad, "Emergence of Islam" , IRI, Islamabad
- 2) Hameed ullah Muhammad, "Muslim Conduct of State"
- 3) Hameed ullah Muhammad, "Introduction to Islam"
- 4) Mulana Muhammad Yousaf Islahi,"

- 5) Hussain Hamid Hassan, "An Introduction to the Study of Islamic Law" leaf Publication Islamabad, Pakistan.
- 6) Ahmad Hasan, "Principles of Islamic Jurisprudence" Islamic Research Institute, International Islamic University, Islamabad (1993)
- 7) Mir Waliullah, "Muslim Jurisprudence and the Quranic Law of Crimes" Islamic Book Service (1982)
- 8) H.S. Bhatia, "Studies in Islamic Law, Religion and Society" Deep & Deep Publications New Delhi (1989)
- 9) Dr. Muhammad Zia-ul-Haq, "Introduction to Al Sharia Al Islamia" Allama Iqbal Open University, Islamabad (2001)

**Anatomy HUMAN ANATOMY 3 (2-1)**

**Learning Outcomes:**

- To acquaint knowledge about structural components of body
- To know about histology and blood composition for the identification of diseases

**Theory:**

Introduction: gross anatomy, histology; Terminology: bones & joints, muscles, cartilage, body structure, tissue, cell, organs; Digestive system: oral cavity, stomach, small & large intestine; Urinary system/ excretory: kidneys, ureter, bladder, urethra; Cardio-vascular system: heart and Pericardium, Arteries system, venous system/ Major arteries & veins; Respiratory system: Upper respiratory- Pharynx, Larynx, Trachea sinuses; Lower respiratory- Bronchus, Lungs, Diaphragm; Reproduction system: Male-Testis, Spermatic cord, Penis, Prostate, Bulbourethral gland/ other glands; Female: Ovaries, Fallopian tubes, Uterus, Vagina, Vulva, Breast; Endocrinology: Pituitary, Thyroid, Parathyroid, Thymus, Adrenal, Renal, super renal; Lymphatic system: Lymph, Lymph vessel, lymph node; Nervous system: Brain, Spinal cord, Cranial nerves, Brachial plexus, Sciatic nerve; Sensory organs: Eyes, Ears, Taste buds, Smell, Touch.

**Practical:**

Four primary tissues of body - Epithelium tissues: Introduction, types, epithelial glands - endocrine & exocrine, connective tissues: loose connective tissue, collagenous, elastic and reticular fiber; Te-cell of loose cartilage (fibroblast, fat cell, plasma cell, macrophages, mast cell); Blood: leukocytes, WBC, RBC & Platelets; Cartilage and its types; Muscle and its types; Histology in: GIT, respiratory, urinary systems, breast, uterus. Microscopy and preparation of histological slides.

**Suggested Readings:**

1. Agur, M.R. and F.D. Arthur. 2009. Grant's Atlas of Anatomy. Lippincott Williams and Wilkins, New York, U.S.A.
2. David, C. 2007. Anatomy of Hatha Yoga: A Manual for Students, Teachers and Practitioners. National Banarisdass Publishers (Pvt.) Ltd., New Delhi, India.

3. Gerard, J. T. and T.N. Mark. 2009. Principles of Human Anatomy. John Wiley and Sons, Inc., New York, USA.
4. Marsh, P. 1920. The Fundamentals of Human Anatomy. C.V. Mosby Publisher, St. Louis MO, USA.

**Physio      HUMAN PHYSIOLOGY–I                      3 (2-1)**

**Learning Outcomes:**

- To familiarize about the functions of different body organs
- To understand risk parameters related to assessment and prognosis of different diseases

**Theory:**

Introduction to human physiology, organization level and cell physiology; Digestive system: oral cavity, salivary glands, teeth, tongue; oesophagus, pharynx, larynx, stomach, small intestine, large intestine, accessory glands associated with GIT (liver, gallbladder and pancreas); Urinary system: introduction, functions of kidney and nephron, Glomerular filtration, tubular reabsorption, tubular secretion, urine excretion and plasma clearance, fluid and acid base balance; Cardiovascular system: functions of heart and blood vessels, electrical activity of heart, mechanical events of heart, cardiac output and its control.

**Practical:**

Blood grouping; Hb estimation; Counting of blood cells; complete blood count (CBC); Electrolyte estimation; Hydration test; Determination of coagulation time, blood pressure, pulse recording; Heart activity – electrocardiography; Test for saliva; Respiratory movement, maximum breathing capacity, pulmonary function test; Intestinal motility; Renal function tests and urine analysis.

**Suggested Readings:**

1. Gillian, P. and C.D. Richards. 2006. Human Physiology: The Basis of Medicine, 3<sup>rd</sup> ed. Oxford University Press, London.
2. Guyton A.C. and J.E. Hall. 2006. Textbook of Medical Physiology, 11<sup>th</sup> ed. J.F. Kennedy Blvd., Philadelphia, USA.
3. Rahman, Z.U., B. Aslam, J.A. Khan and T. Khaliq. 2007. Manual of Physiology-I, 2<sup>nd</sup> ed. MAS Computers, Faisalabad, Pakistan.
4. Rahman, Z.U., B. Aslam, Khan, J.A. and T. Khaliq. 2007. Manual of Physiology-II, 2<sup>nd</sup> ed. MAS Computers, Faisalabad, Pakistan.
5. Tortora, G.J. 2008. Principles of Anatomy and Physiology, 12<sup>th</sup> ed. John Wiley & Sons, Inc., New York, USA.

**Sociology      FUNDAMENTALS OF SOCIOLOGY                      3 (3-0)**

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