



**1<sup>st</sup> Semester (1<sup>st</sup> Year)**

Papers	Course Code	Subject	Credit Hours	
			Theory	Practical
1	RT01	Anatomy-I	3	1
2	RT02	Physiology-I	1	1
3	RT03	Pharmacology-I	1	1
4	RT04	Islamic Education	3	0
5	RT05	Biochemistry-I	1	1
6	RT06	Computer Skills-I	1	1
<b>TOTAL</b>			<b>23</b>	

**2<sup>nd</sup> Semester (1<sup>st</sup> Year)**

Papers	Course Code	Subject	Credit Hours	
			Theory	Practical
1	RT07	Anatomy-II	3	1
2	RT08	Physiology-II	3	1
3	RT09	Pharmacology-II	3	1
4	RT10	Pak Study	3	0
5	RT11	Biochemistry-II	3	1
6	RT12	Computer Skills-II	3	1
<b>TOTAL</b>			<b>23</b>	

**3<sup>rd</sup> Semester (2<sup>nd</sup> Year)**

Papers	Course Code	Subject	Credit Hours	
			Theory	Practical
1	RT13	Radiological physics I & clinical practice	3	1
2	RT14	Radiological anatomy I & clinical practice	3	1
3	RT15	Basic Epidemiology-I	3	1
4	RT16	Sociology –I	3	0
5	RT17	Bio-Statics-I	3	0
<b>TOTAL</b>			<b>18</b>	

**4<sup>th</sup> Semester (2<sup>nd</sup> Year)**

Papers	Course Code	Subject	Credit Hours	
			Theory	Practical
1	RT18	Radiological procedures I and clinical practice	3	1
2	RT19	Radiological positioning and clinical practice	3	1
3	RT20	Basic Epidemiology-II	3	1
4	RT21	Sociology –II	3	0
5	RT22	Bio-Statics-II	3	0
<b>TOTAL</b>			<b>18</b>	

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**5<sup>th</sup> Semester (3<sup>rd</sup> Year)**

Papers	Course Code	Subject	Credit Hours	
			Theory	Practical
1	RT23	Radiological physics II and clinical practice	3	1
2	RT24	Radiological anatomy II, conventional radiography & clinical practice	3	1
3	RT25	Pathology-I	3	1
4	RT26	Basic Communication Skills-I	3	0
<b>TOTAL</b>			<b>15</b>	

**6<sup>th</sup> Semester (3<sup>rd</sup> Year)**

Papers	Course Code	Subject	Credit Hours	
			Theory	Practical
1	RT27	Radiological procedures II and clinical practice	3	1
2	RT28	Radiographic positioning II and clinical practice	3	1
3	RT29	Pathology-II	3	1
4	RT30	Basic Communication Skills-II	3	0
<b>TOTAL</b>			<b>15</b>	

**7<sup>th</sup> Semester (4<sup>th</sup> Year)**

Papers	Course Code	Subject	Credit Hours	
			Theory	Practical
1	RT31	Radiological physics and clinical practice	3	1
2	RT32	Radiological anatomy and clinical practice	3	1
3	RT33	Radiological Pathology and clinical	3	1
4	RT34	Public Health-I	3	1
5	RT35	Research Methodology-I	3	0
6	RT36	Ethics & Management-I	3	0
<b>TOTAL</b>			<b>22</b>	

**8<sup>th</sup> Semester (4<sup>th</sup> Year)**

Papers	Course Code	Subject	Credit Hours	
			Theory	Practical
1	RT37	Radiological procedures, conventional radiography and clinical practice	3	1
2	RT38	Radiographic positioning, conventional radiography and clinical practice	3	1
3	RT39	Radiological Crossectional Anatomy and clinical	3	1
4	RT40	Public Health-II	3	1
5	RT41	Research Methodology-II	3	0
6	RT42	Ethics & Management-II	3	0
<b>TOTAL</b>			<b>22</b>	

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**1<sup>st</sup> SEMESTER****PAPER-I: ANATOMY-I (1<sup>st</sup> SEMESTER)****CREDIT HOURS: 3+1****MARKS 100****INTERNAL MARKS 40****EXTERNAL MARKS 60****TIME: 3 HRS****OBJECTIVE:**

To introduce the students the significance of the subject of anatomy in medical science regarding its knowledge its applications and day-to-day developments in the subject

**COURSE CONTENT:**

- I. **General Anatomy**  
Anatomical terms and positions  
Description of tissue
- II. **Systemic Anatomy**  
Systemic Anatomy includes
  - a. Muscular skeletal system
  - b. Gastrointestinal system
  - c. Respiratory system
  - d. Cardiovascular system

**RECOMMENDED BOOKS:**

Snell's clinical Anatomy (Text Book) by Snell 7thg Edition 2000 published by Churchill Living Stone

Gray's anatomy (Reference Book) by Roger Warwick Petter L. Williams 1973 published by Langman group limited.

**Prepared By:****Hafeez Institute of Medical Sciences Peshawar**





**PAPER-4: ISLAMIC EDUCATION (1<sup>st</sup> SEMESTER)**

**CREDIT HOURS: 3**  
**INTERNAL MARKS 40**

**EXTERNAL MARKS 60**

**MARKS 100**  
**TIME: 3 HRS**

**OBJECTIVE:**

- To educate students regarding basic concept of Islam
- To educate students regarding Islamic influence in the world
- To educate the students regarding Islamic Medical Ethics & Contribution of the Muslims in Medicine, Science & Technologies.

**COURSE CONTENT:**

**Holy Quran and Sunnah**

**1.1 Holy Quran**

- Introduction
- Importance and characteristics
- Sura-e-Hujarat with translation
- Sura-e-Al-Furqan: Verses 63-77 with translation and explanation

**1.2 Sunnah**

- Importance of Sunnah
- Twenty selected Hadith with translation  
(Mention in Islamiyat Compulsory for degree classes,

Published by:

(Allama Iqbal Open University)

**Fundamental Doctrine of Islam**

- a. Islam with reference to Holy Quran & Hadith
- b. Tawheed (Oneness of Allah)
- c. Prophethood
- d. The day of judgment (Akhirat)
- e. Salat & nimaz (Abadaat)
- f. Saum (Fasting)
- g. Zakat
- h. Hajj
- i. Jihad

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### **Life of Holy Prophet**

- 3.1 study of the life of the Holy Prophet & Seerat
- 3.2 life of the Holy Prophet at Maka from birth to Hijra (Migration to Madina)
- 3.3 Method of Preaching & difficulties
- 3.4 Life of Holy Prophet at Madina
- 3.5 Amicable Accords (Mowkhat)
- 3.6 Treaty of Madina (Misaq-e-Mukarama)
- 3.7 Conquest of (Maka Al-Mukarama)
- 3.8 Hajat-ul-wida

### **The Ethical View of Islam & Characteristics Islamic Cultural**

- 4.1 Character Building
- 4.2 The Concept of Ethics
- 4.3 The Moral Values: Truthfulness, Tawakal, Taqwa, Fulfillment of Promises, Simplicity, the steam of Parents and Guardians, Behaviorism Y & Broadness,
- 4.4 Islamic Society: Kisab-e-Halal, Human Dignity, Social Justice Adle-e- Shoora

### **Influence of the Islamic Civilization**

- 4.4 Panacea of our Problems  
Our Future, Unity, Political Stability

### **Islamic Medical Ethics**

Contribution of the Muslims in Medicine, Science and Technology

**NOTE:** While keeping the Islamic values and basic Characteristics of Islamic Society the Proper guideline may be provided in such a way that should be applicable in business and trade.

### **RECOMMENDED BOOKS:**

Islamiyat Compulsory, Islamabad, Allama Iqbal Open University, Islamabad  
M.D Zaffar, Islamic Education (Compulsory) Lahore Aziz Book Dept. Urdu Bazaar.

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**PAPER-5: BIOCHEMISTRY -I (1<sup>st</sup> SEMESTER)****CREDIT HOURS: 3+1****MARKS 100****INTERNAL MARKS 40****EXTERNAL MARKS 60****TIME: 3 HRS****OBJECTIVE:**

The introduction of knowledge subject of biochemistry to student regarding its importance in understanding the other domains of medical science and regarding the applications of the subject and to know about the recent developments in the field of biochemistry.

**COURSE CONTENT:**

1. Introduction
2. Carbohydrate
3. Proteins
4. Lipids
5. Enzyme
6. Vitamins

**RECOMMENDED BOOKS:**

Harper's text book of Biochemistry (Text Book) by Bertram Katzung 1992 published by Appleton Lange.

Biochemistry for Paramedics by Dr. Khalid Mehmood 2005 published by UB agency Peshawar.

**Prepared By:****Hafeez Institute of Medical Sciences Peshawar**

**PAPER-6: COMPUTER SKILLS-I (1<sup>st</sup> SEMESTER)**

<b>CREDIT HOURS:</b>	<b>3+1</b>	<b>MARKS</b>	<b>100</b>
<b>INTERNAL MARKS</b>	<b>40</b>	<b>EXTERNAL MARKS</b>	<b>60</b>
		<b>TIME:</b>	<b>3 HRS</b>

**OBJECTIVE:**

To introduce the students the significance of the subject of computer definitions, history, types and component, hardware and software application.

**COURSE CONTENT:**

**Introduction:**

1. Definition of computer
2. History of computer
3. Classification of computer
4. Components of computer

**Hardware and Software**

1. Physical components of computer
2. Logical component of computer
3. System software
4. Application software

**Storage devices**

1. Magnetic storage devices
2. Optical storage devices
3. Memories

**RECOMMENDED BOOKS:**

Fundamental of I.T concept by Nayyar Kanwal by CECOSE University Teacher's notes

**Prepared By:**

**Hafeez Institute of Medical Sciences Peshawar**

**2<sup>nd</sup> SEMESTER****PAPER-I: ANATOMY-II (2<sup>nd</sup> SEMESTER)****CREDIT HOURS: 3+1****MARKS 100****INTERNAL MARKS 40****EXTERNAL MARKS 60****TIME: 3 HRS****COURSE CONTENT:**

- a. Lymphatic system
- b. Head and Neck
- c. Nervous System
- d. Urinary System
- e. Reproductive System
- f. Endocrine System
- g. Special Senses

**RECOMMENDED BOOKS:**

Snell's clinical Anatomy (Text Book) by Snell 7thg Edition 2000 published by Churchill Living Stone

Gray's anatomy (Reference Book) by Roger Warwick Petter L. Williams 1973 published by Langman group limited.

**Prepared By:**  
**Hafeez Institute of Medical Sciences Peshawar**

**PAPER-2: PHYSIOLOGY-II (2<sup>nd</sup> SEMESTER)**

**CREDIT HOURS: 3+1**

**MARKS 100**

**INTERNAL MARKS 40**

**EXTERNAL MARKS 60**

**TIME: 3 HRS**

**COURSE CONTENT:**

1. Nerves System
2. Urinary System
3. Endocrine System
4. Special Senses

**RECOMMENDED BOOKS:**

Guyton test book of Physiology (Text Book) by Guyton 1991 published by W.B Saunders company

Ganong review of Physiology (Reference Book) by Ganong 20<sup>th</sup> Edition 2000 published by Land Medical book.



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**PAPER-4: PAKSTUDY (2<sup>nd</sup> SEMESTER)**

**CREDIT HOURS: 3**  
**INTERNAL MARKS 40**

**MARKS 100**  
**EXTERNAL MARKS 60**

**OBJECTIVE:**

To introduce to the student the significant of Pak Study B.Sc level course

**COURSE CONTENT:**

- I. **Chapter One**  
Ideology of Pakistan
- II. **Chapter Two**  
Background of ideology of Pakistan
  - a. Reformation movement
  - b. Educational movement
  - c. Political movement
- III. **Chapter Three**  
Movement of Pakistan (Since Allama Iqbal Address at Ala Bad 1930 till 4<sup>th</sup> August 1947)
- IV. **Chapter Four**  
Establishment of Pakistan (Political, Social Financial Problems)
- V. **Chapter Five**  
Constitutional and Political Developments in Pakistan
- VI. **Chapter Five**  
Geographical condition of Pakistan
- VII. **Chapter Seven**  
Pakistan and Muslim world

**RECOMMENDED BOOKS:**

Pakistan Studies Compulsory for Degree Courses by Dr. Noshaad Khan

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**PAPER-6: COMPUTER SKILLS-II (2<sup>nd</sup> SEMESTER)**

<b>CREDIT HOURS:</b>	<b>3+1</b>	<b>MARKS</b>	<b>100</b>
<b>INTERNAL MARKS</b>	<b>40</b>	<b>EXTERNAL MARKS</b>	<b>60</b>
		<b>TIME:</b>	<b>3 HRS</b>

**OBJECTIVE:**

To introduce the students the significance of the subject of computer definitions, history, types and component, hardware and software application.

**COURSE CONTENT:**

**Application software**

Microsoft word

Microsoft power point

Microsoft excel

Microsoft Definition of computer

5. History of computer
6. Classification of computer
7. Components of computer

**Hardware and Software**

5. Physical components of computer
6. Logical component of computer
7. System software
8. Application software

**Storage devices**

4. Magnetic storage devices
5. Optical storage devices
6. Memories

**RECOMMENDED BOOKS:**

Fundamental of I.T concept by Nayyar Kanwal by CECOSE University Teacher's notes

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**3<sup>rd</sup> SEMESTER****PAPER – 1 :- PRADIOLOGICAL PHYSICS I AND CLINICAL PRACTICE****CREDIT HOURS: 3+1****MARKS 100****INTERNAL MARKS 40****EXTERNAL MARKS 60****TIME: 3 HRS****COURSE OBJECTIVES:**

To study the fundamentals of physics related to radiology, atom, concept of radiation and the basic principles of electricity and magnetism, what is x-ray machine, how x-rays are produced and what are its sources and how they interact with matter.

**COURSE CONTENT:**

Concepts of radations:

Nature of our surrounding  
Sources of ionizing radiation  
Discovery of x-rays  
Developments of modern radiology  
Radiation injury  
Radiation protection

Fundamentals of physics:

Review of mathematics  
Units of measurement  
Mechanics  
Heat

The atom:

Discovery combination of atoms  
Fundamental particles  
Atomic structure  
Radioactivity  
Lionizing radiation

Electricity radiation:

Photon  
Electromagnetic spectrum

Electricity and magnetism:

Electrostatics, current, electricity  
Electrodynamics  
Magnetism

Electromagnetism:

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Electromagnetic effect  
 Electromagnetic induction  
 Electric generators and motors  
 Transformers  
 Rectification

The x-ray machine:

x-ray tube  
 operating console  
 high voltage section

x-ray production:

electron target interaction  
 x-ray emission spectrum  
 factors affecting x-ray emission spectrum

x-ray emission:

x-ray quantity  
 x-ray quality

x-ray interaction with matter:

five basic interactions  
 differential absorption  
 contrast examinations

#### RECOMMENDED BOOKS:

Radiological science for technologists by Stewart C. Bushong 7<sup>th</sup> edition in 2001 published by Mosby, Inc: A Harcourt health company

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**PAPER - 2:- RADIOLOGICAL ANATOMY I AND CLINICAL  
PRACTICE**

**CREDIT HOURS: 3+1**

**MARKS 100**

**INTERNAL MARKS 40**

**EXTERNAL MARKS 60**

**TIME: 3 HRS**

**COURSE OBJECTIVES:**

To study the anatomy that is important from the radiological point of view

**COURSE CONTENTS:**

Shoulder joint

Hip joint

Pelvic

Upper limbs

Lower limbs

Receiving of patient in X-ray department

Preparation of patient for X-ray, and Ultrasound

Maintenance of department

Maintenance of department and patient record

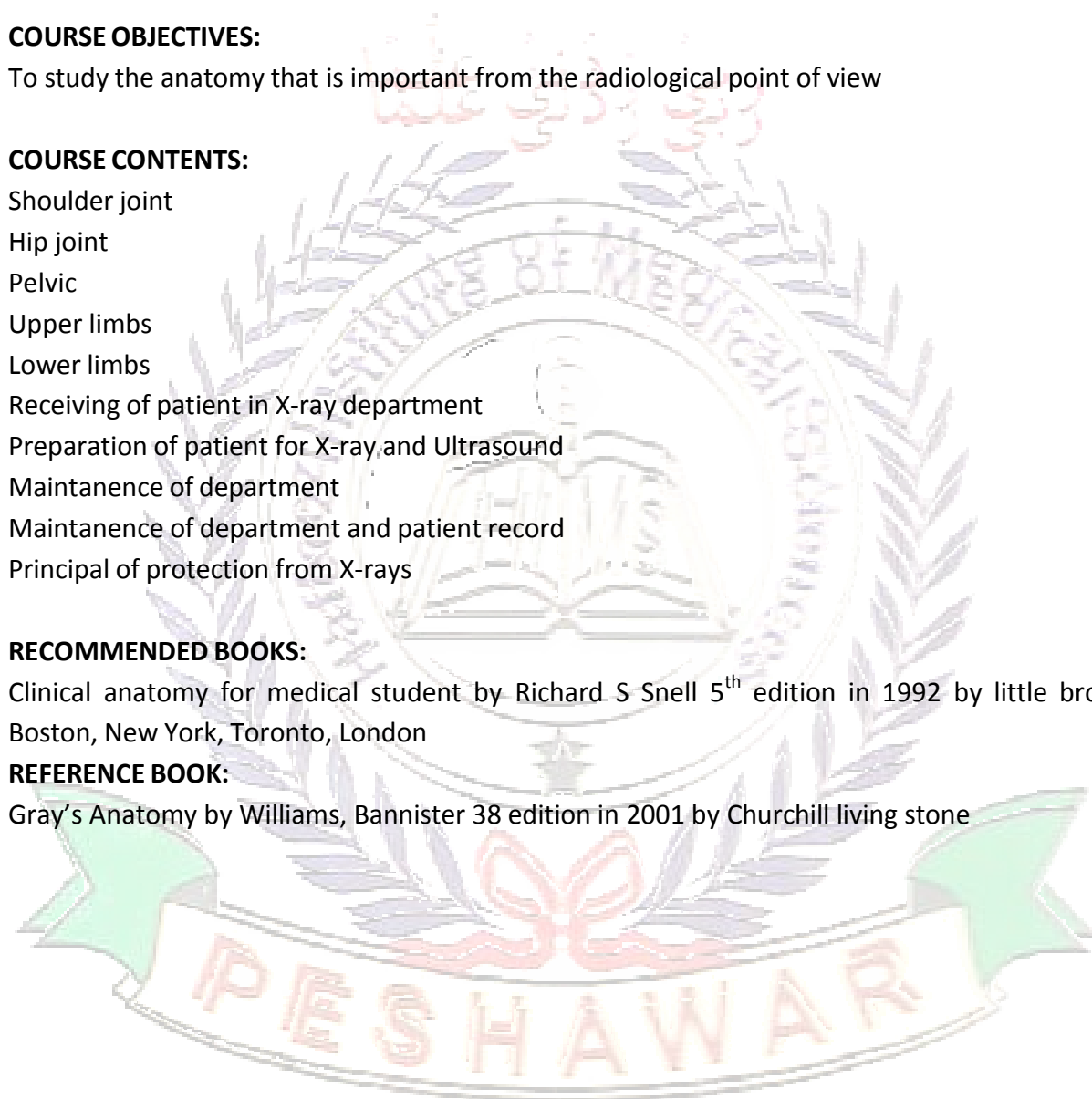
Principal of protection from X-rays

**RECOMMENDED BOOKS:**

Clinical anatomy for medical student by Richard S Snell 5<sup>th</sup> edition in 1992 by little brown Boston, New York, Toronto, London

**REFERENCE BOOK:**

Gray's Anatomy by Williams, Bannister 38 edition in 2001 by Churchill living stone



**Prepared By:**

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**PAPER-3: BASIC EPIDEMIOLOGY -I (3<sup>rd</sup> SEMESTER)**

**CREDIT HOURS: 3+1**

**MARKS 100**

**INTERNAL MARKS 40**

**EXTERNAL MARKS 60**

**TIME: 3 HRS**

**COURSE OBJECTIVE:**

To introduce to the students the know-how of the subject of epidemiology in order to apply the knowledge of the subject regarding the community and community relate disease.

**COURSE CONTENTS:**

1. Introduction to epidemiology
2. Determinants
  - Primary
  - Secondary
3. Clinical Epidemiology

**Recommended Books**

Public Health by Illyas Ansari

Public Health by J Park



**Prepared By:**

**Hafeez Institute of Medical Sciences Peshawar**

**PAPER-4: SOCIOLOGY -I (3<sup>rd</sup> SEMESTER)**

**CREDIT HOURS: 3**  
**INTERNAL MARKS 40**

**MARKS 100**  
**EXTERNAL MARKS 60**

**COURSE OBJECTIVE:**

To produce to the students the significance of definition and scope of sociology as a science, their relation with other sciences.

**COURSE CONTENTS:**

1. **General**  
Definition and scope of sociology, sociology is a science, Islamic Sociology
2. **Medical Sociology**  
Introduction contribution of sociology to medicine
3. **Health and Disease**  
Social definition of illness, social and emotional component of illness
4. **Patient and paramedic**  
Paramedics view of disease and patient, psychology of patient/paramedic relationship
5. **Mental illness sociological perspective**  
Definitions, social implication of mental illness
6. **Rehabilitation**  
Definition, physical, mental handicap  
Method in rehabilitation: Guidance counseling and vocational training

**Recommended Books**

Medical sociology by William C Cuckerham in 1978 printed by USA Health education by Laurina Robinson Wesley F Alles in 1994 by Times Mirror/Mosby College Publishing ST Liois Turonto

**Reference Book:**

Social psychology of health by Shirlynn Spacapan Stuart Oskanp Edition by SAGE publication New Delhi, New York, in 1987

**Prepared By:**  
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**PAPER-6: BIOSTATISTICS -I (3<sup>rd</sup> SEMESTER)**

**CREDIT HOURS: 3**  
**INTERNAL MARKS 40**

**MARKS 100**  
**EXTERNAL MARKS 60**

**COURSE OBJECTIVE:**

To introduce to the students the significance of bio-statistics their topic in univariate statistics means basic concept, describing and exploring data, normal distribution, sampling distribution and hypothesis testing, basic concept of probability and categorical data CH and application of statistics and social research.

**COURSE CONTENTS:**

Topics in univariate statistics

**A. Basic**

1. Introduction
2. Important terms
3. Senses
4. Method uses for taking senses, information collection during senses, method of estimating the population of any year
5. Measurement scale

**B. Describing and Exploring Data**

1. Measures of central tendency and variability
2. Health Statistics (Preparation, ration, rate)
3. Percentiles, quartiles and deciles

**RECOMMENDED BOOKS**

Statistical methods for psychology by Howell DC in 1992 publisher by Belmont CA Duxby press USA

A guide to research methodology, biostatistics and medical writing by college of physicians and surgeons Pakistan by WHO collaboration center

Reading understanding multivanant statistics giimm LG Yard AD PR, in 1995 publisher American Psychological association

Ilyas Ansari's community medicine (Text Book) by Ilyas and Ansari 2003 published by Medical division Urdu Bazaar Karachi.

**Prepared By:**

**Hafeez Institute of Medical Sciences Peshawar**

**4<sup>th</sup> SEMESTER****PAPER - 1:- RADIOLOGICAL POSITIONING AND CLINICAL PRACTICE****CREDIT HOURS: 3+1****MARKS 100****INTERNAL MARKS 40****EXTERNAL MARKS 60****TIME: 3 HRS****COURSE OBJECTIVES:**

To study that what's the correct position of the patient and the part that is radiographic in order to produce an accepted image. Practical work on conventional radiography and special procedures studied.

**COURSE CONTENTS:**

## Upper limbs:

Fingers  
Hand  
Wrist  
Forearm  
Humerus

## Lower limbs

Toes  
Foot  
Calcaneus  
Ankle  
Leg  
Knee  
Patella  
Femur

## Shoulder joint:

Glenoid fossa  
Acromioclavicular joints  
Bicipital groove  
Clavicle  
Scapula

## Hip joint:

Hip joint  
Acetabulum

Conventional radiography

Biliary tract, liver and pancreas procedures

Urinary tract procedures

**RECOMMENDED BOOKS:**

Clark positioning Radiography by R-a Swallow, E Naylor, EJ Roebuck,  
As Whiteley 11<sup>th</sup> edition in 1999 by Heine menu.

Atlas of radiological anatomy, Author: Weir Abrahams 2<sup>nd</sup> edition 2002 by Churchill living stone

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**PAPER - 2:- RADIOLOGICAL PROCEDURES I AND CLINICAL PRACTICE****CREDIT HOURS: 3+1****MARKS 100****THEORY: 75****PRACTICAL: 25****TIME: 3 HRS****COURSE OBJECTIVES:**

To know about the contrast media its types and the special procedures of the GIT that are performed with contrast media, how the various special procedures of the gallbladder, liver, pancreas, urinary tract, reproductive system and Practical work on conventional radiography, correct positioning of the patient and the part to be examined.

**COURSE CONTENTS:****Intravenous contrast media:**

Historical developments  
 Toxic effects of IV contrast media  
 Fetal reactions  
 Non fetal reactions  
 Prophylaxis for adverse reactions  
 Contrast agents in MRI  
 Contrast agents in Ultrasonography

**Gastrointestinal tract:**

Introduction to water soluble contrast media  
 Barium swallow  
 Barium meal  
 Barium follow through  
 Small bowel enema  
 Barium enema

**Liver, biliary tract & pancreas:**

Biliary contrast media  
 Oral cholecystography  
 Intravenous cholangiography  
 E.R.C.P  
 P.T.C

**Urinary tract:**

Excretion urography  
 Micturating cystourethrography  
 Ascending urethrography  
 Retrograde pyeloureterography

**Reproductive system:**

Hysterosalpingography

**Conventional radiography:**

Correct position on the patient

**RECOMMENDED BOOKS:**

A guide to radiological procedures by Stephen Chapman & Richard Nikielny 3<sup>rd</sup> edition in 1993 by Bailliere Tindall London

**Prepared By:**

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**PAPER-3: BASIC EPIDEMIOLOGY -II (4<sup>th</sup> SEMESTER)**

**CREDIT HOURS: 3+1**

**MARKS 100**

**INTERNAL MARKS 40**

**EXTERNAL MARKS 60**

**TIME: 3 HRS**

**COURSE OBJECTIVE:**

To introduce to the students the know-how of the subject of epidemiology in order to apply the knowledge of the subject regarding the community and community relate disease.

**COURSE CONTENTS:**

1. Occupational epidemiology
2. Importance of epidemiology
3. Definitions of common term related to epidemiology
4. Health indication

**Recommended Books**

Public Health by Ilyas Ansari

Public Health by J Park



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**PAPER-5: SOCIOLOGY -II (4<sup>th</sup> SEMESTER)**

<b>CREDIT HOURS:</b>	<b>3</b>	<b>MARKS 100</b>
<b>INTERNAL MARKS</b>	<b>40</b>	<b>EXTERNAL MARKS 60</b>

**COURSE OBJECTIVE:**

To produce to the students the significance of definition and scope of sociology as a science, their relation with other sciences.

**COURSE CONTENTS:**

- 1. Social disorganization**  
The concept and factor of social organization, family, group and community disorganization
- 2. Problem of community**  
Problem of crime, method of treatment and preventative measure
- 3. Education Problems**  
Deterioration of education standard in school, college and university
- 4. Health Problems**  
Illness behavior, delivery and utilization of health services
- 5. Introduction to applied sociology**  
Definition of applied sociology, nature and causative analysis of social problem and the role of sociologist in solving social problems
- 6. Application of social research in social problems**  
Social servu and social research, nature purpose and function

**Recommended Books**

Medical sociology by William C Cuckerham in 1978 printed by USA Health education by Lurna Robinson Wesley F Alles in 1994 by Times Mirror/Mosby College Publishing ST Liois Turonto

**Reference Book:**

Social psychology of health by Shirlynn Spacapan Stuart Oskanp Edition by SAGE publication New Delhi, New York, in 1987

**Prepared By:**  
**Hafeez Institute of Medical Sciences Peshawar**

**PAPER-5: BIOSTATISTICS -II (4<sup>th</sup> SEMESTER)**

**CREDIT HOURS: 3**  
**INTERNAL MARKS 40**

**MARKS 100**  
**EXTERNAL MARKS 60**

**COURSE OBJECTIVE:**

To introduce to the students the significance of bio-statistics their topic in univariate statistics means basic concept, describing and exploring data, normal distribution, sampling distribution and hypothesis testing, basic concept of probability and categorical data CH and application of statistics and social research.

**COURSE CONTENTS:**

Topics in univariate statistics

- A. Sampling distribution and hypothesis testing
- B. Basic concepts of probability
- C. Data collection (purpose and technique)
- D. Categorical data and numerical data
  - Application of statistics in social research
  - Percentages, measure of central tendencies
- A. Means, Median and Mode
- B. Quartile, decile and percentile

**RECOMMENDED BOOKS**

Statistical methods for psychology by Howell DC in 1992 publisher by Belmont CA Duxby press USA

A guide to research methodology, biostatistics and medical writing by college of physicians and surgeons Pakistan by WHO collaboration center

Reading understanding multivariate statistics Giimm LG Yard AD PR, in 1995 publisher American Psychological association

Ilyas Ansari's community medicine (Text Book) by Ilyas and Ansari 2003 published by Medical division Urdu Bazaar Karachi.

**Prepared By:**  
**Hafeez Institute of Medical Sciences Peshawar**

**5<sup>th</sup> SEMESTER****PAPER - 1:- RADIOLOGICAL PHYSICS II AND CLINICAL PRACTICE****CREDIT HOURS: 3+1****MARKS 100****INTERNAL MARKS 40****EXTERNAL MARKS 60****TIME: 3 HRS****COURSE OBJECTIVES:**

To study that how latent image is formed, how it can be converted to a manifest image, what is radiographic film, what is scattered radiation and how they can be reduced and how a good quality radiograph can be produced

**COURSE CONTENTS:****Radiographic exposure:**

KVP,  
MA  
Exposure time  
MAS  
Image characteristics

**Select plane film procedures:**

Tomography  
Stereo radiography  
Magnification radiography

**Mammography:**

Basics for mammography  
x-ray apparatus  
image receptors  
xero radiographic process

**Fluoroscopy:**

Visual consideration  
Practical fluoroscopic technique  
Image intensification  
Fluoroscopic image monitoring

**Introduction to computer:**

History  
Anatomy of computer  
Computer software  
Processing methods

**Radiographic film:**

Film construction  
Formation of latent image  
Handling and storage of films

**Processing the latent image:**

Evolution of the film processing

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Processing chemistry  
Automatic processing  
Alternative processing methods

**Intensifying screen:**

Screen construction  
Luminescence  
Screen characteristics  
Care of screen

**The grid:**

Characteristics of grid construction  
Measuring grid performance  
Types of grid  
Grid selection

**Radiographic quality:**

Film factors  
Geometric factors  
Subject factors  
Consideration for improved radiographic quality

**RECOMMENDED BOOK:**

Radiological science for technologists by Stewart C. Bushong  
Radiological science for technologists by Stewart C. Bushong 7th edition  
In 2001 published by Mosby, Inc: A harcout health company



**Prepared By:**

**Hafeez Institute of Medical Sciences Peshawar**

**PAPER - 2 :- RADIOLOGICAL ANATOMY II, CONVENTIONAL  
RADIOGRAPHY AND CLINICAL PRACTICE**

**CREDIT HOURS: 3+1**

**MARKS 100**

**INTERNAL MARKS 40**

**EXTERNAL MARKS 60**

**TIME: 3 HRS**

**COURSE OBJECTIVES:**

To study the anatomy of the vertebral column and bones of the thorax relating to radiology, the anatomy of the skull and facial bones relating to radiology, Practical work on conventional radiography, mammography, fluoroscopy and the special procedures and clinical practice in X-ray department

**COURSE CONTENTS:**

Vertebral column  
Bones of the thorax  
Skull  
Facial bones  
Conventional radiography  
Mammography  
Fluoroscopy  
Venography  
Lmphography  
Ultrasound transducers  
Ultrasound transducers  
Ultrasonic beam  
Operation modes  
Biological effects  
Receiving of patient in X-ray department  
Preparation of patient of X-ray and Ultrasound  
Preparation of patient for CT and MRI  
Maintenance of department  
Principal of protection from X-rays

**RECOMMENDED BOOK:**

Clinical anatomy for medical student by Richard S Snell 5<sup>th</sup> edition in 1992 by little brown Boston, new York, Toronto, London

Clark positioning Radiography by R-A Swallow, E Naylor, EJ Roebock, As Whiteley 11<sup>th</sup> edition in 1999 by Heine Menu.

A guide to radiological procedure by Stephen Chap man & Richard Nakielny, 3<sup>rd</sup> edition in 1993 published by Bailiere Tindall London

**REFERENCE BOOK:**

Gray's anatomy by Williams, Bannister 38 edition in 2001 by Churchill living stone

**Prepared By:**

**Hafeez Institute of Medical Sciences Peshawar**

**PAPER-3 PATHOLOGY -I (5<sup>th</sup> SEMESTER)**

<b>CREDIT HOURS:</b>	<b>3+1</b>	<b>MARKS</b>	<b>100</b>
<b>INTERNAL MARKS</b>	<b>40</b>	<b>EXTERNAL MARKS</b>	<b>60</b>
		<b>TIME:</b>	<b>3 HRS</b>

**COURSE OBJECTIVE:-**

To introduce to the students the knowledge of the subject of Pathology regarding its needs in understanding the different domains of medical sciences and regarding the other applications of the subject and to come to know the recent advancements in the field of pathology.

**COURSE CONTENT:**

1. Introduction to Pathology
2. Cell Injury
3. Inflammation
4. Repair

**Recommended Books**

- Robin's textbook of Pathology (Text Book) by Robin Cottran Kumar 6<sup>th</sup> Edition 1998, Published by I.E. Saunders.
- Pathology illustrated (Reference Book) by AD. T Gocan 1991 published by Churchill Livingstone.

**Prepared By:**  
**Hafeez Institute of Medical Sciences Peshawar**

**PAPER-4 BASIC COMMUNICATION SKILLS -I (5<sup>th</sup> SEMESTER)**

**CREDIT HOURS: 3 MARKS 100**  
**INTERNAL MARKS 40 EXTERNAL MARKS 60**

**COURSE OBJECTIVE:-**

To introduce to the students about the basic communication skill

**COURSE CONTENT:**

1. Definition of communication
2. Communication module
3. 7C, s of Communication
4. Social marketing
5. Mode of communication

**Recommended Books**

- Effective Business Communication
- Module or Ensure Public Participation by Dr. Muhammad Ilyas

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**6<sup>th</sup> SEMESTER****PAPER - 1:- RADIOLOGICAL PROCEDURES II AND CLINICAL PRACTICE****CREDIT HOURS: 3+1****MARKS 100****INTERNAL MARKS 40****EXTERNAL MARKS 60****TIME: 3 HRS****COURSE OBJECTIVES:**

To study and know how to perform the special procedures of the Lymphatic system and venography and to know about the intravenous contrast media and gastrointestinal tract, Practical work on conventional radiography and the special procedures studied

**COURSE CONTENTS:**

Venography:

Central venography:

Orbital venography  
Internal jugular venography  
Superior venacaval venography  
Inferior venacaval venography  
Ascending lumbar venography  
Portal venography  
Transhepatic portal venous

Catheterization

Hepatic venography  
Renal venography  
Adrenal venography  
Selective retrograde venography  
Pelvis venography  
Intra osseous venography

Peripheral venography:

Limbs venography

Lymph glands &amp; lymphatics:

Lymphography

General notes

Intravenous contrast media:

Historical developments  
Toxic effects of IV contrast media  
Fetal reactions  
Non fetal reactions  
Prophylaxis for adverse reactions  
Contrast agents in MRI  
Contrast agents in Ultrasonography

Gastrointestinal tract:

Introduction to water soluble contrast media

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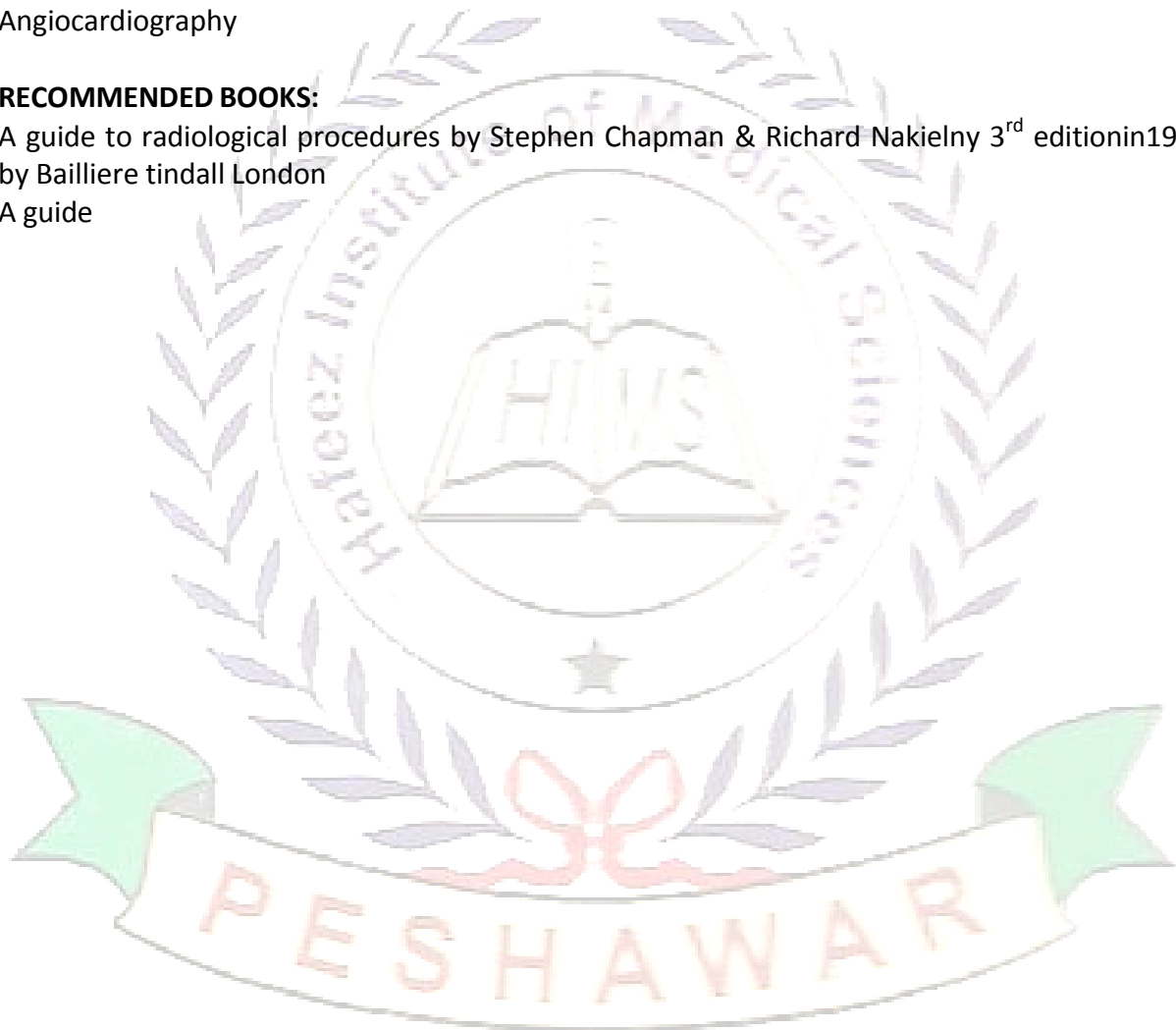
Barium swallow  
Barium meal

Barium follow through  
Small bowel enema  
Barium enema

Conventional radiography  
Respiratory system procedures  
Arteriography  
Angiocardiography

**RECOMMENDED BOOKS:**

A guide to radiological procedures by Stephen Chapman & Richard Nakielny 3<sup>rd</sup> edition in 1993  
by Bailliere Tindall London  
A guide



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**PAPER - 2:- RADIOGRAPHIC POSITIONING II AND CLINICAL PRACTICE****CREDIT HOURS: 3+1****MARKS 100****INTERNAL MARKS 40****EXTERNAL MARKS 60****TIME: 3 HRS****COURSE OBJECTIVES:**

To study and perform the various projections of the vertebral column and bones of the thorax, perform the various projections of the skull and facial bones

**COURSE CONTENTS:****Vertebral column:**

Cervical vertebrae  
Thoracic vertebrae  
Lumber vertebrae  
Sacrum  
Coccyx

**Bones of the thorax:**

Sternum  
Sternoclavicular joints  
Ribs  
Diaphragm

Introduction to Tomography

**Skull:**

Cranium  
Sella turcica  
Orbits  
Optic foramen

**Facial bones:**

Mandible  
Zygomatic arches  
Temporomandibular joints  
Nasal bone  
Petrous portion  
Mastoid portion

Introduction to stereo radiography

**RECOMMENDED BOOK:**

Clark positioning Radiography by R-A Swallow, E Naylor, EJ Roebeck

As Whiteley 11<sup>th</sup> edition in 1999 by Heine MenuAtlas of radiological anatomy, Author: Weir Abrahams 2<sup>nd</sup> edition 2002 by Churchill living stoneA guide to radiological procedure by Stephen Chapman & Richard Nakielny, 3<sup>rd</sup> edition in 1993 published by Bailliere Tindall London**Prepared By:****Hafeez Institute of Medical Sciences Peshawar**

**PAPER-3****PATHOLOGY -II (6<sup>th</sup> SEMESTER)****CREDIT HOURS: 3+1****MARKS 100****INTERNAL MARKS 40****EXTERNAL MARKS 60****TIME: 3 HRS****COURSE OBJECTIVE:-**

To introduce to the students the knowledge of the subject of Pathology regarding its needs in understanding the different domains of medical sciences and regarding the other applications of the subject and to come to know the recent advancements in the field of pathology.

**COURSE CONTENT:**

1. Homodynamic Disorders
2. Disorders of Immunity
3. Neoplasia
4. Microbiology

**Recommended Books**

- Robin's textbook of Pathology (Text Book) by Robin Cottran Kumar 6<sup>th</sup> Edition 1998, Published by I.E. Saunders.
- Pathology illustrated (Reference Book) by AD. T Gocan 1991 published by Churchill Livingstone.

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**PAPER-4 BASIC COMMUNICATION SKILLS -II (6<sup>th</sup> SEMESTER)**

**CREDIT HOURS: 3**

**MARKS 100**

**INTERNAL MARKS 40**

**EXTERNAL MARKS 60**

**COURSE OBJECTIVE:**

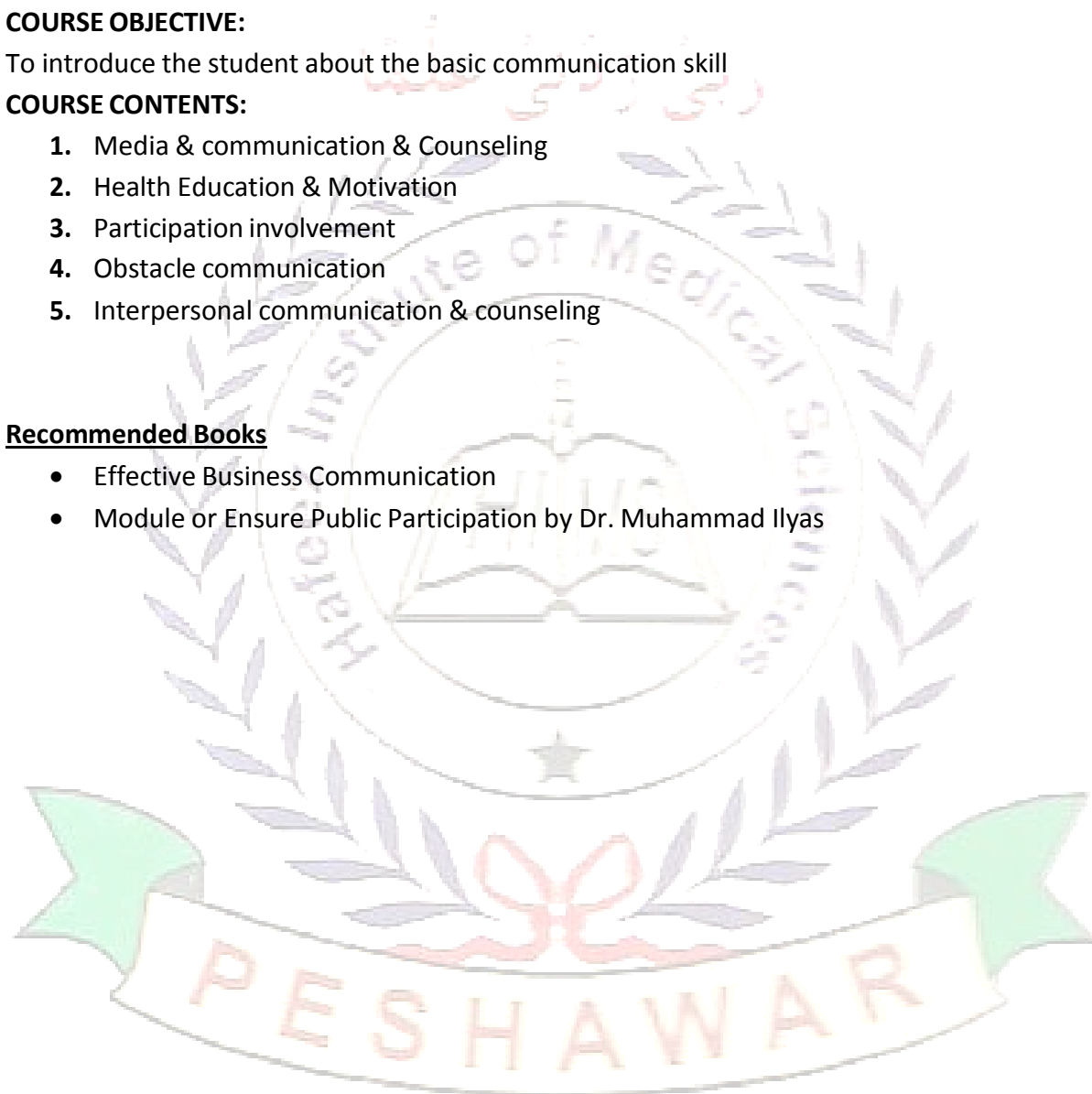
To introduce the student about the basic communication skill

**COURSE CONTENTS:**

1. Media & communication & Counseling
2. Health Education & Motivation
3. Participation involvement
4. Obstacle communication
5. Interpersonal communication & counseling

**Recommended Books**

- Effective Business Communication
- Module or Ensure Public Participation by Dr. Muhammad Ilyas



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**7<sup>th</sup> SEMESTER****PAPER - 1:- RADIOLOGICAL PHYSICS AND CLINICAL PRACTICE****CREDIT HOURS: 3+1****MARKS 100****INTERNAL MARKS 40****EXTERNAL MARKS 60****TIME: 3 HRS****COURSE OBJECTIVES:**

To study the non-ionizing radiations used in MRI and Ultrasound, computed tomography and about the quality control. To study the radiobiology, radiologic facilities and radiation protection

**COURSE CONTENTS:****Computed tomography:**

Principles of operation  
 Operation modes  
 System components  
 Image characteristics  
 Image quality

**Quality control:**

Radiographic systems  
 Special x-ray system  
 Radiographic procedures  
 Artifacts

**Physical principles of MRI:**

Why MRI  
 Fundamental concepts  
 NMR parameters  
 MRI versus CT  
 Imaging principles

**Equipments with images (MRI):**

Imaging magnets  
 Secondary coils  
 MR images  
 Biological hazards

**Physical principles of ultrasound:**

Diagnostic ultrasound  
 Acoustic intensity and power  
 Acoustic reflection  
 Acoustic absorption

**Diagnostic ultrasound:****Principles of radiobiology:**

From molecules to human  
 Human biology

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Physical factors affecting radio sensitivity  
 Biological factors affecting radio sensitivity  
 Dose response relationship

**Molecular and cellular radiobiology:**

Irradiation of macromolecules  
 Radiolysis of water  
 Cell survival kinetics  
 Target theory

**Effects of radiations:**

**Early effects:**

Acute radiation lethality  
 Local tissue damage  
 Hematological effects  
 Cytogenetic effects

**Late effects:**

Local tissue effects  
 Life span shortening  
 Risk estimation  
 Radiation induced malignancy  
 Total risk of malignancy  
 Radiation in pregnancy

**Health physics:**

Cardinal principles of radiation  
 Maximum permissible dose

**Design for radiological imaging facilities:**

Designing team  
 Department activity  
 Location of x-ray department  
 Place layout  
 Construction consideration

**Radiation protection procedures:**

Occupational exposure  
 Patient dose  
 Reduction of occupational  
 Exposure  
 Reduction of un-necessary patient dose

**RECOMMENDED BOOK:**

Radiological science for technologists by Stewart C. Bushong  
 Radiological science for technologists by Stewart C. Bushong 7<sup>th</sup> edition  
 In 2001 published by Mosby, Inc: A Harcourt health company

**Prepared By:**

**Hafeez Institute of Medical Sciences Peshawar**

<b>PAPER - 2:-</b>	<b>RADIOLOGICAL ANATOMY AND CLINICAL PRACTICE</b>		
<b>CREDIT HOURS:</b>	<b>3+1</b>		<b>MARKS 100</b>
<b>INTERNAL MARKS</b>	<b>40</b>	<b>EXTERNAL MARKS 60</b>	<b>TIME: 3 HRS</b>

**COURSE OBJECTIVES:**

To study the anatomy of the Teeth and para nasal sinuses relating to radiology, anatomy of the abdomen and pelvis relating to radiology and clinical practice on MRI, CT

**COURSE CONTENTS:**

Para-nasal sinuses

Teeth

Abdomen

Pelvis

Receiving of patient in X-ray department

Preparation of patient for X-ray and Ultrasound

Preparation of patient for CT and MRI

Maintenance of department

Maintenance of department and patient record

Principles of protection from X-rays

**RECOMMENDED BOOKS:**

Clinical anatomy for medical student by Richard S Snell 5<sup>th</sup> edition in 1992 by little brown Boston, New York, Toronto, London

**REFERENCE BOOK:**

Gray's Anatomy by Williams, Bannister 38 edition in 2001 by Churchill living stone

**Prepared By:**

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<b>PAPER - 3 :-</b>	<b>RADIOLOGICAL PATHOLOGY AND CLINICAL PRACTICE</b>		
<b>CREDIT HOURS:</b>	<b>3+1</b>		<b>MARKS 100</b>
<b>INTERNAL MARKS</b>	<b>40</b>	<b>EXTERNAL MARKS 60</b>	<b>TIME: 3 HRS</b>

**COURSE OBJECTIVE:**

To study various diseases of the whole body systems & radiological appearances of diseases in the structured form. To study radiological appearances of diseases on M.R.I. Conventional Radiography of the 10 systems based chapters mentioned below, practical work on conventional radiography, CT, Ultrasound, angiography, MRI and the special procedures

**COURSE CONTENTS:**

1. Thorax
2. C.V.S
3. G.I.T
4. Liver, Biliary System Pancrease & spleen
5. Urinary tract & testes
6. Obstetrics
7. Musculo skeletal system
8. C.NS
9. Head & Neck
10. Breast & endocrine
11. Conventional radiography
12. Arthrography
13. Central nervous system procedures
14. C.T. Techniques, protocols & images
15. Ultrasound Techniques, Protocols & images

**RECOMMENDED BOOKS:**

Imaging Atlas of human anatomy by Jaunie weir & peter Abrahams, 3<sup>rd</sup> edition 1997 reprinted in 201 by Mosby international Ltd.

Aids to radiological differential diagnosis by Stephan Champmann & Richard Nakeilny

Clinical sonography by Roger C, 3<sup>rd</sup> edition in 2003 company Wolters Kluwar

Diagnostic and CT scan by mc paint, IC Gupta 1<sup>st</sup> edition in 1995 by Japee brothers publisher ltd new Delhi

**Prepared By:**

**Hafeez Institute of Medical Sciences Peshawar**

**PAPER-4: PUBLIC HEALTH -I (7<sup>th</sup> SEMESTER)****CREDIT HOURS: 3+1****MARKS 100****INTERNAL MARKS 40****EXTERNAL MARKS 60****TIME: 3 HRS****COURSE OBJECTIVE:**

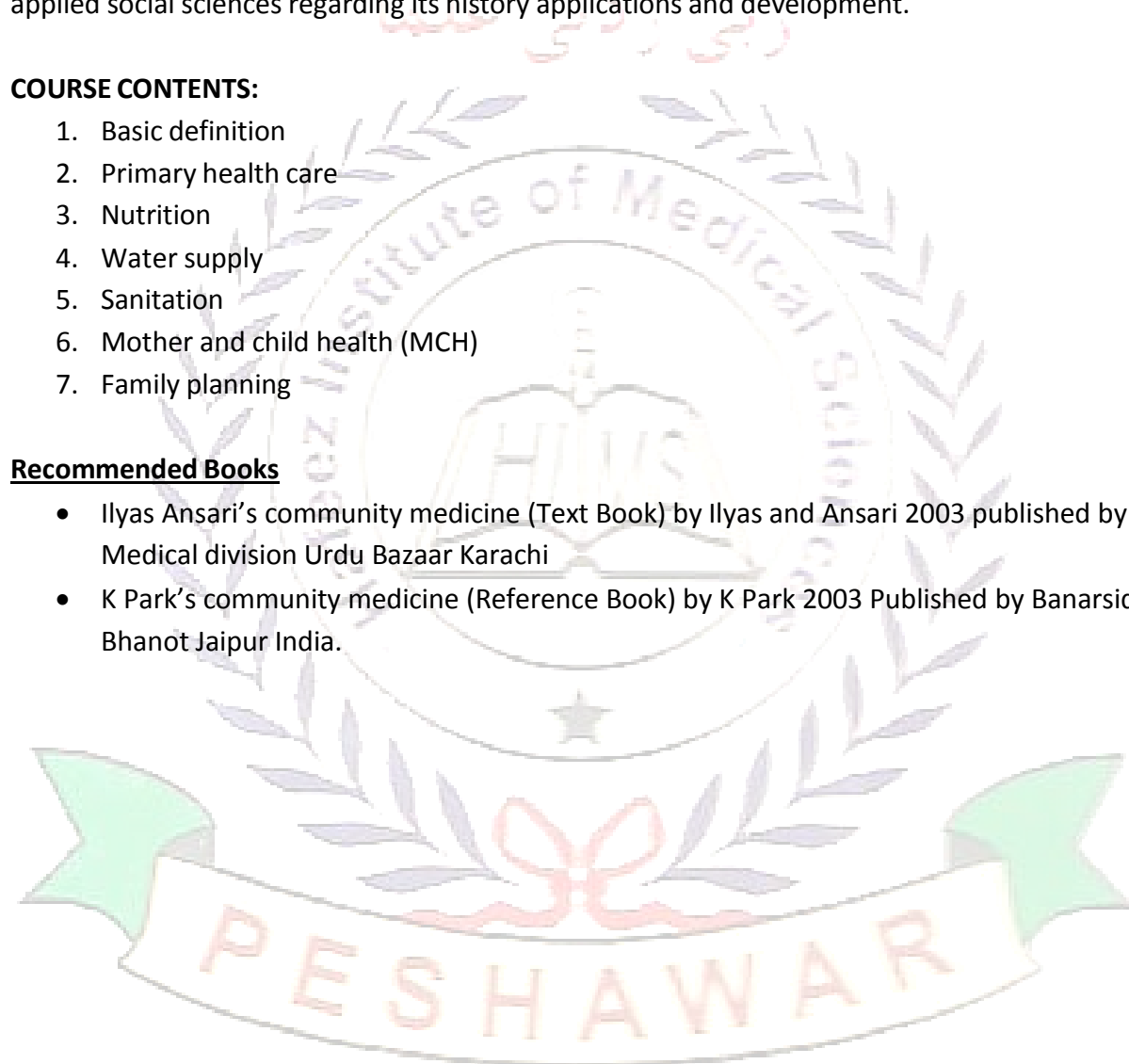
To introduce to the student the significance of the discipline of public health in medical and applied social sciences regarding its history applications and development.

**COURSE CONTENTS:**

1. Basic definition
2. Primary health care
3. Nutrition
4. Water supply
5. Sanitation
6. Mother and child health (MCH)
7. Family planning

**Recommended Books**

- Ilyas Ansari's community medicine (Text Book) by Ilyas and Ansari 2003 published by Medical division Urdu Bazaar Karachi
- K Park's community medicine (Reference Book) by K Park 2003 Published by Banarside Bhanot Jaipur India.

**Prepared By:****Hafeez Institute of Medical Sciences Peshawar**

**PAPER-5: RESEARCH METHODOLOGY -I (7<sup>th</sup> SEMESTER)**

<b>CREDIT HOURS:</b>	<b>3</b>	<b>MARKS</b>	<b>100</b>
<b>INTERNAL MARKS</b>	<b>40</b>	<b>EXTERNAL MARKS</b>	<b>60</b>

**COURSE OBJECTIVE:**

Introduction the students a significance of research methodology to the students foundation, concept of measurement, design clinical research and health system research.

**COURSE CONTENTS:****PART – 1 FOUNDATION**

Introduction to research (in simple term and a scientific term), concept of research, why do need research, advantage of research, identification of research need and its qualities, component of research, ethical and legal aspect of research and objective of research (definition, purpose, structure)

**PART 2****(A) SELECTION OF TOPIC****The criteria points of prioritization of topic**

1. Relevance      ii. Avoidance of duplication      iii. Physibility      IV. Political acceptability
  - v. applicability      VI. Cost efficiencies      vii. Ethical consideration and scales
- for rating research topic mentioned above

**WORK PLAN**

Its contents, how to developed a work plan, what factor should be kept in mind while preparing research work plan

**© BUDGET REQUIRED FOR RESEARCH WORK**

Why it is needed, wok should be taken into consideration, literature searching, statistical help, material, type of manuscript, printing of manuscript for submission and postage

**Recommended Books**

- Foundation of Clinical Research by Portney LG Walkais MP in 1993, Publisher by Appleton and lauge USA
- A guide to Research Methodology, Biostatistics and Medical writing by college of physicians and surgeons Pakistan by WHO collaboration center
- Health system research project by Corlien M Varkerisser, Indra Pathmanathan, Ann Brownlee in 1993 by International Development Research Center in New Delhi, Singapore.

**Prepared By:**

**Hafeez Institute of Medical Sciences Peshawar**

**PAPER-6: ETHICS & MANAGEMENT -I (7<sup>th</sup> SEMESTER)**

<b>CREDIT HOURS:</b>	<b>3</b>	<b>MARKS 100</b>
<b>INTERNAL MARKS</b>	<b>40</b>	<b>EXTERNAL MARKS 60</b>

**COURSE OBJECTIVE:**

To introduce to the student of medical ethics their behavior with patients and medical staff and management of different wards, departments includes the equipments records and their duties.

**COURSE CONTENTS:****Ethics:-**

Ethical conduct, relationship with patient, surgeon, physician, nurse, social workers and co-workers, preparation and uses of records, report, physical plant, equipments.

The implementation of and confirmation to the rules of professional context and understanding, the paramedic liability and obligations in the case of medico legal action, a wider knowledge of ethics relating to current social and medical policy in the paramedic society as a professional association, the role of international health agencies such as world health organization.

**Recommended Books**

Management A modern hospital by AV Srinivasa response book sage publication New Delhi London and 2005

Hand book of hospital personal management by RC Goyal prentice Hall of India New Delhi in 1994

Medical ethic by Dr. Mehmood Alam in 2006 by Health Department KPK

**Prepared By:****Hafeez Institute of Medical Sciences Peshawar**

**8<sup>th</sup> SEMESTER****PAPER - 1:- RADIOLOGICAL PROCEDURES, CONVENTIONAL RADIOGRAPHY & CLINICAL PRACTICE****CREDIT HOURS: 3+1****MARKS 100****INTERNAL MARKS 40****EXTERNAL MARKS 60****TIME: 3 HRS****COURSE OBJECTIVES:**

To study and know how to perform the special procedures of the Lacrimal system and salivary glands, to know how to perform the special procedure of the central nerve system and autography, Practical work on conventional radiography, CT, Ultrasound, angiography, MRI and the special procedures

**COURSE CONTENTS:**

Lacrimal system:

Dacryocystography

Salivary glandsL

Sialography

Central nervous system:

Contrast media for myelography

Lateral cervical puncture

Cisternal puncture

Myelography with water soluble contrast media

Air encephalography

Ventriculography

Air meatography

Cisternography

Arthrography:

General points

Double contrast knee arthrography

Hip arthrography

Double contrast shoulder arthrography

Elbow arthrography

Wrist arthrography

Ankle arthrography

Conventional radiography

Arthrography

Central nervous system procedures

C.T. Techniques, Protocols and images

M.R.I Techniques, Protocols &amp; images

**RECOMMENDED BOOK:**

A guide to radiological procedure by Stephen Chapman & Richard, Nakielny 3<sup>rd</sup> edition in 1993 by Bailliere Tindall London, Clinical sonography by Roger C, 3<sup>rd</sup> edition in 2003 company Wolters Dluwar, Diagnostic and CT scan by MC paint, LC Gupta 1<sup>st</sup> edition in 1995 by Japee brothers publisher Ltd new Delhi

**Prepared By:****Hafeez Institute of Medical Sciences Peshawar**

<b>PAPER - 2:-</b>	<b>RADIOGRAPHIC SPOSITIONING, CONVENTIONAL RADIOGRAPHY AND CLINICAL PRACTICE</b>		
<b>CREDIT HOURS:</b>	<b>3+1</b>		<b>MARKS 100</b>
<b>INTERNAL MARKS</b>	<b>40</b>	<b>EXTERNAL MARKS 60</b>	<b>TIME: 3 HRS</b>

**COURSE OBJECTIVES:**

To study and perform the various projections of the abdomen and pelvis, perform the various projections of the teeth and para-nasal sinuses and clinical practice in CT and MRI department

**COURSE CONTENTS:**

The abdomen

Pelvies:

Pelvic bones

Ilium

Acetabulum

Foreign bodies

Ward radiography

Theater radiography

Various projections of:

Para-nasal sinuses

Dental radiography

Introduction to macro radiography

Receiving of patient in X-ray department

Preparation of patient for X-ray and Ultrasound

Preparation of patient for CT and MRI

Maintenance of department

Maintenance of department and patient record

Principal of protection from X-rays

**RECOMMENDED BOOK:**

Clark positioning Radiography by R-A Swallow, E Naylor, EJ Roebuck,

As Whiteley 11<sup>th</sup> edition in 1999 by Heine Menu

**Prepared By:**

**Hafeez Institute of Medical Sciences Peshawar**

**PAPER - 3:-**                      **RADIONOLOGICAL CROSSSECTIONAL ANATOMY  
AND CLINICAL PRACTICE**

**CREDIT HOURS:**      **3+1**    **MARKS 100**  
**INTERNAL MARKS**      **40**                      **EXTERNAL MARKS 60**                      **TIME: 3 HRS**

**COURSE OBJECTIVES:**

To study coronal, Saggittal and cross sectional / Axial anatomy of various compartments of the human body. To full fill the needs for C.T.M.R. ultrasound imaging techniques. To do best imaging and procedure quality images in ultrasound, C.T. and M.R.I

**COURSE CONTENT:**

Head and neck:  
Vertebral column & spinal cord  
Upper limb  
Thorax  
Abdomen pelvis  
Lower limb  
Guide to ossification table

**RECOOMENDED BOOKS:**

Human cross sectional anatomy, by David Dean Thomas E. Herbener, 1<sup>st</sup> edition in 2000 by Lippincott William & Wilkins

**Prepared By:**  
**Hafeez Institute of Medical Sciences Peshawar**

**PAPER-4: PUBLIC HEALTH -II (8<sup>th</sup> SEMESTER)**

**CREDIT HOURS: 3+1 MARKS 100**  
**INTERNAL MARKS 40 EXTERNAL MARKS 60 TIME: 3 HRS**

**COURSE OBJECTIVE:**

To introduce to the student the significance of the discipline of public health in medical and applied social sciences regarding its history applications and development.

**COURSE CONTENTS:**

1. Immunization
2. Mental health
3. Drug abuse
4. Health education
5. Health management information system
6. Health system research
7. Biomedical ethics

**Recommended Books**

- Ilyas Ansari's community medicine (Text Book) by Ilyas and Ansari 2003 published by Medical division Urdu Bazaar Karachi
- K Park's community medicine (Reference Book) by K Park 2003 Published by Banarside Bhanot Jaipur India.

**Prepared By:**  
**Hafeez Institute of Medical Sciences Peshawar**



**PAPER-5: RESEARCH METHODOLOGY -II (8<sup>th</sup> SEMESTER)**

**CREDIT HOURS: 3 MARKS 100**  
**INTERNAL MARKS 40 EXTERNAL MARKS 60**

**COURSE OBJECTIVE:**

Introduction the students a significance of research methodology to the students foundation, concept of measurement, design clinical research and health system research.

**COURSE CONTENTS:****PART – 3****CONCEPTS OF MEASUREMENT**

Principals and reliability of measurement, errors and sources of measurement, types of measurement, measure of disease frequency and screening, (introduction, validity and screening test)

**DESIGNING CLINICAL RESEARCH**

Studies design (introduction, selection of design), research questionnaire, validity and reliability of research finding, confounding factors, strategies to deal with threats to validity.

**Recommended Books**

Foundation of Clinical Research by Portney LG Walkais MP in 1993, Publisher by Appleton and lauge USA

A quide to Research Methodology, Biostatistics and Medical writing by college of physicians and surgeons Pakistan by WHO collaboration center

Health system research project by Corlien M Varkerisser, Indra Pathmanathan, Ann Brownlee in 1993 by International Development Research Center in New Delhi, Singapore.

**Prepared By:**  
**Hafeez Institute of Medical Sciences Peshawar**

**PAPER-6: ETHICS & MANAGEMENT -II (8<sup>th</sup> SEMESTER)**

**CREDIT HOURS: 3 MARKS 100**  
**INTERNAL MARKS 40 EXTERNAL MARKS 60**

**COURSE OBJECTIVE:**

To introduce to the student of medical ethics their behavior with patients and medical staff and management of different wards, departments includes the equipments records and their duties.

**COURSE CONTENTS:**

**Management:-**

Identify the features of a health care system and desirable role and function of paramedical within the system, the inter relationship of all levels of health care identify function, organization and inter relationship of departments in a health care facility, the rules and functions of paramedic in community, provincial and federal, resources available to the patient, chronically ill and elderly citizens, professional institutional and government measures to safe guard patients and control of quality care, the roles and functions of professional associations.

**Principles of Management**

Eliminatory features of hospital ward, unit and factors (budgetary, architectural and personnel) quality control total quality control, control, continuous quality control.

**Recommended Books**

Management A modern hospital by AV Srinivasa response book sage publication New Delhi London and 2005  
 Hand book of hospital personal management by RC Goyal prentice Hall of India New Delhi in 1994  
 Medical ethic by Dr. Mehmood Alam in 2006 by Health Department KPK

**Prepared By:**

**Hafeez Institute of Medical Sciences Peshawar**