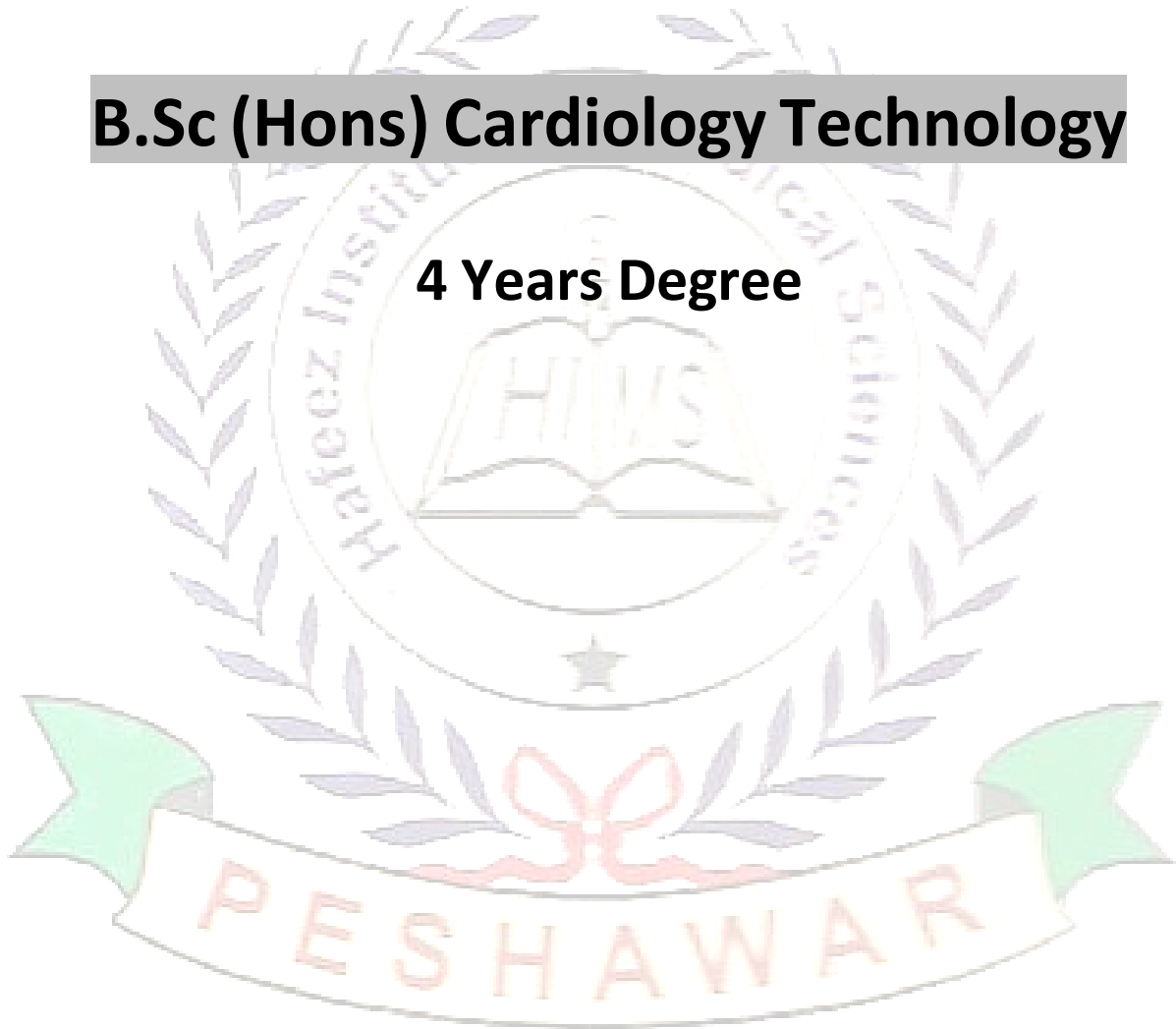


CURRICULUM

For

B.Sc (Hons) Cardiology Technology

4 Years Degree



Prepared By:
Hafeez Institute of Medical Sciences Peshawar

1st Semester (1st Year)

Papers	Course Code	Subject	Credit Hours	
			Theory	Practical
1	CT001	Anatomy-I	3	1
2	CT002	Physiology-I	3	1
3	CT003	Pharmacology-I	3	1
4	CT004	Islamic Education	3	0
5	CT005	Biochemistry-I	3	1
6	CT006	Computer Skills-I	3	1
TOTAL			23	

2nd Semester (1st Year)

Papers	Course Code	Subject	Credit Hours	
			Theory	Practical
1	CT007	Anatomy-II	3	1
2	CT008	Physiology-II	3	1
3	CT009	Pharmacology-II	3	1
4	CT010	Pak Study	3	0
5	CT011	Biochemistry-II	3	1
6	CT012	Computer Skills-II	3	1
TOTAL			23	

3rd Semester (2nd Year)

Papers	Course Code	Subject	Credit Hours	
			Theory	Practical
1	CT013	Anatomy – I and clinical practice on ECG	3	1
2	CT014	Physiology –I and clinical practice on ETT	3	1
3	CT015	Basic Epidemiology-I	3	0
4	CT016	Sociology –I	3	0
5	CT017	Bio-Statics-I	3	0
TOTAL			17	

4th Semester (2nd Year)

Papers	Course Code	Subject	Credit Hours	
			Theory	Practical
1	CT018	Anatomy – II and clinical practice on ECG	3	1
2	CT019	Physiology –II and clinical practice on ETT	3	1
3	CT020	Basic Epidemiology-II	3	0
4	CT021	Sociology –II	3	0
5	CT022	Bio-Statics-II	3	0
TOTAL			17	

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5th Semester (3rd Year)

Papers	Course Code	Subject	Credit Hours	
			Theory	Practical
1	CT023	Pathology and clinical practice in ICU - I	3	1
2	CT024	Pharmacology I and clinical practice in	3	1
3	CT025	Clinical practice in CCU - I	3	1
4	CT026	Pathology-I	3	1
5	CT027	Basic Communication Skills-I	3	0
TOTAL			19	

6th Semester (3rd Year)

Papers	Course Code	Subject	Credit Hours	
			Theory	Practical
1	CT028	Pathology and clinical practice in ICU – II	3	1
2	CT029	Pharmacology II and clinical practice in	3	1
3	CT030	Clinical practice in CCU – II	3	1
4	CT031	Pathology-II	3	1
5	CT032	Basic Communication Skills-II	3	0
TOTAL			19	

7th Semester (4th Year)

Papers	Course Code	Subject	Credit Hours	
			Theory	Practical
1	CT033	Pathology – III and clinical practice	3	1
2	CT034	Cardiac lab – I and clinical practice	3	1
3	CT035	Public Health-I	3	1
4	CT036	Research Methodology-I	3	0
5	CT037	Ethics & Management-I	3	0
TOTAL			18	

8th Semester (4th Year)

Papers	Course Code	Subject	Credit Hours	
			Theory	Practical
1	CT038	Pharmacology – III and clinical practice	3	1
2	CT039	Cardiac lab – II and clinical practice	3	1
3	CT040	Public Health-II	3	1
4	CT041	Research Methodology-	3	0
5	CT042	Ethics & Management-II	3	0
TOTAL			18	

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1st SEMESTER**PAPER-I: ANATOMY-I (1st 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 7th 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 -I (1st SEMESTER)

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

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OBJECTIVE:

To introduce the students the significance of the subject of Physiology in medical science regarding its knowledge in making the other subjects of medical sciences understandable. Its applications and day to day developments in the subject of Physiology.

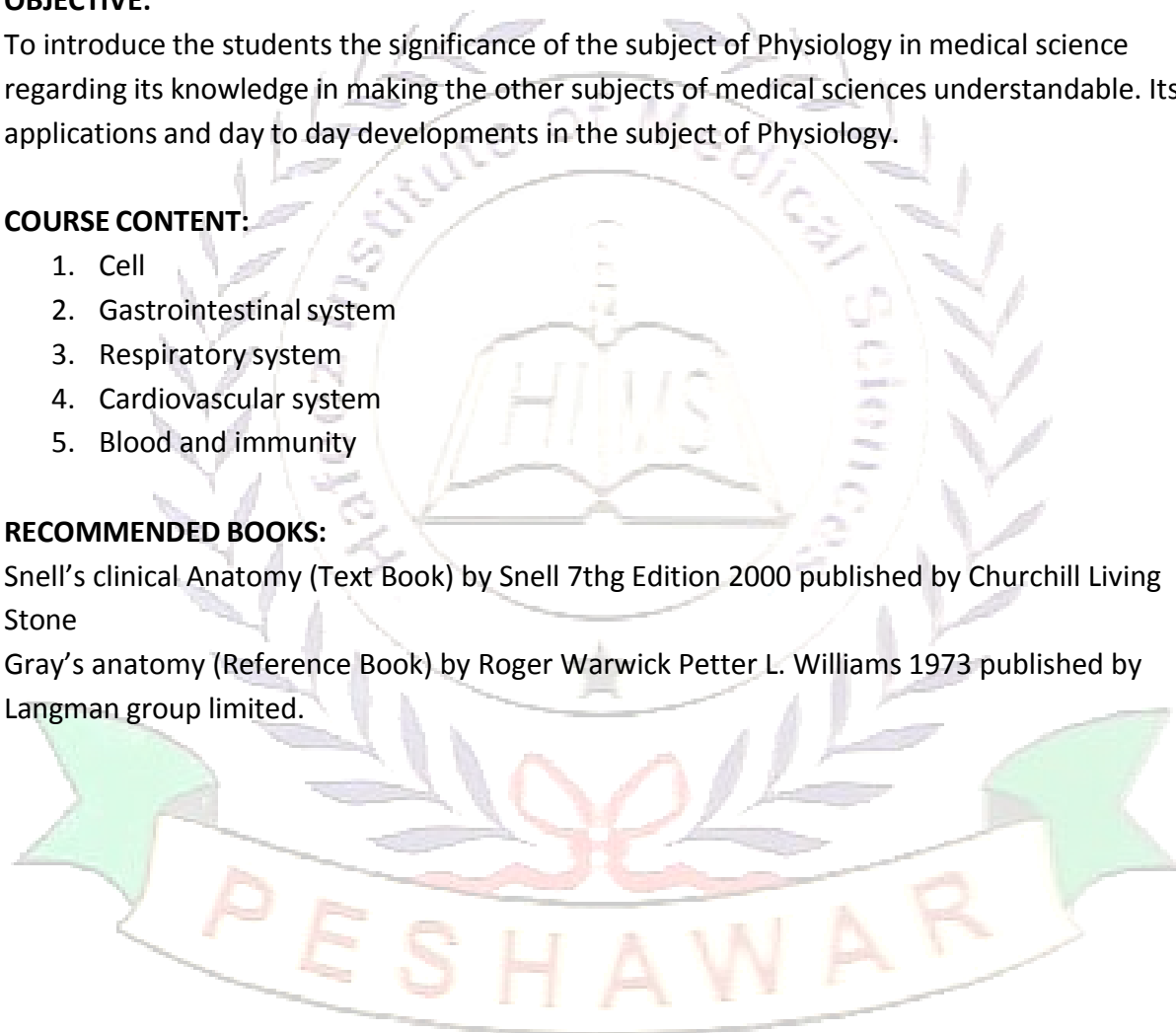
COURSE CONTENT:

1. Cell
2. Gastrointestinal system
3. Respiratory system
4. Cardiovascular system
5. Blood and immunity

RECOMMENDED BOOKS:

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

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



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PAPER-3: PHARMACOLOGY -I (1st SEMESTER)**CREDIT HOURS: 3+1****MARKS 100****INTERNAL MARKS 40****EXTERNAL MARKS 60****TIME: 3 HRS****OBJECTIVE:**

To introduce the students the knowledge of the subject of pharmacology with regards to its importance in understanding the other disciplines of medical sciences regarding the application of the subject and to learn about the new developments in the field of pharmacology.

COURSE CONTENT:

1. Introduction to Pharmacology
2. Pharmacokinetics
3. Pharmacodynamics

RECOMMENDED BOOKS:

Lippincott's pharmacology (Text Book) by Mycek 2nd edition 2000 published by Lippincott Raven

Katzung textbook of pharmacology (Reference Book) by Bertram Katzung 8th Edition published by Appleton.

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

PAPER-4: ISLAMIC EDUCATION (1st 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.

Prepared By:

Hafeez Institute of Medical Sciences Peshawar

PAPER-5: BIOCHEMISTRY -I (1st 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 (1st 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 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**

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

- 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 7th 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 (2nd SEMESTER)

CREDIT HOURS: 3+1

MARKS 100

INTERNAL MARKS 40

EXTERNAL MARKS 60

TIME: 3 HRS

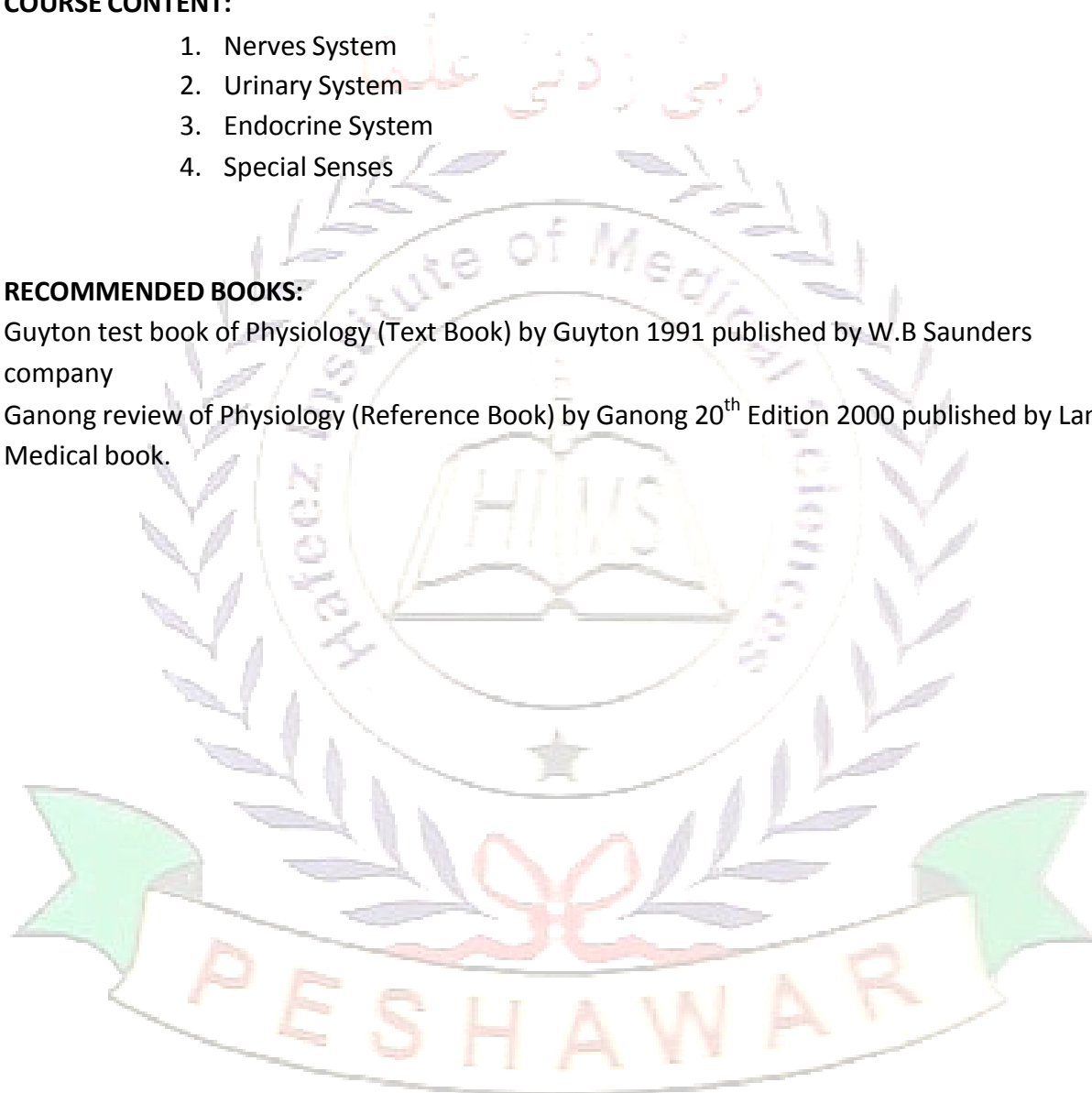
COURSE CONTENT:

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 20th Edition 2000 published by Land Medical book.



Prepared By:
Hafeez Institute of Medical Sciences Peshawar

PAPER-3: PHARMACOLOGY -II (2nd SEMESTER)

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

OBJECTIVE:

To introduce the students the knowledge of the subject of pharmacology with regards to its importance in understanding the other disciplines of medical sciences regarding the application of the subject and to learn about the new developments in the field of pharmacology.

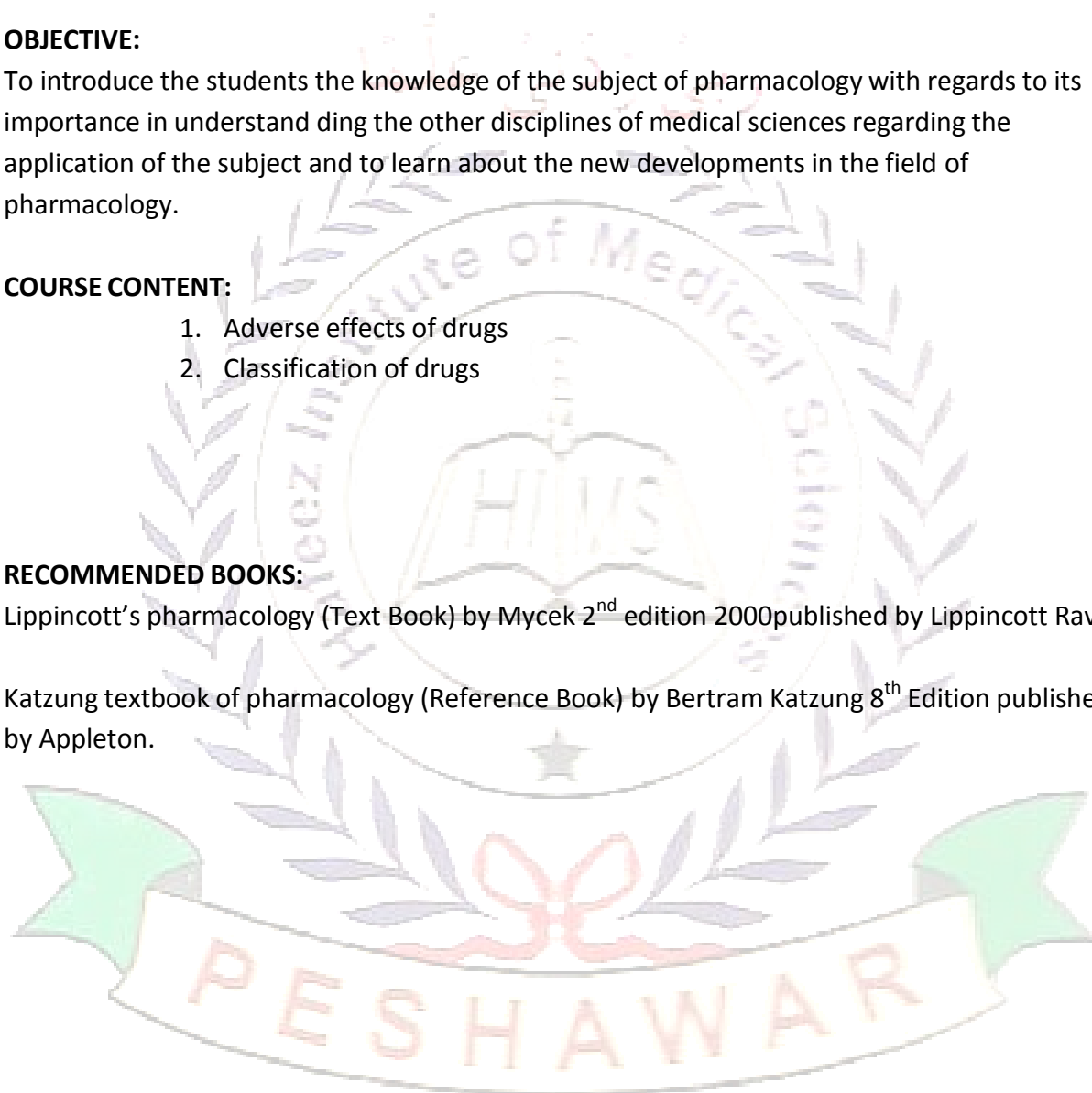
COURSE CONTENT:

1. Adverse effects of drugs
2. Classification of drugs

RECOMMENDED BOOKS:

Lippincott's pharmacology (Text Book) by Mycek 2nd edition 2000 published by Lippincott Raven

Katzung textbook of pharmacology (Reference Book) by Bertram Katzung 8th Edition published by Appleton.



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PAPER-4: PAKSTUDY (2nd SEMESTER)

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

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 4th 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

Prepared By:

Hafeez Institute of Medical Sciences Peshawar

PAPER-6: COMPUTER SKILLS-II (2nd 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 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

Prepared By:

Hafeez Institute of Medical Sciences Peshawar

3rd SEMESTER**PAPER – 1:- CARDIAC ANATOMY I AND CLINICAL PRACTICE ON ECG****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 cardiac anatomy and electrocardiography

COURSE CONTENTS:

1. Introduction
2. Surface Anatomy
3. Thoracic Anatomy
4. Internal structure of heart
5. Valve of the Heart
6. Anatomy of Aortic Valve
7. Anatomy of Mitral Valve
8. Anatomy of Pulmonic Valve
9. Anatomy of Tricuspid Valve
10. Normal ECG.
11. Heart rate, Rhythm
12. Heart axis.
13. Abnormal ECG

RECOMMENDED BOOKS:

Clinical Anatomy by Snell, in 2000 by Churchill living stone

Gray anatomy by Williams warwick Dyson banister in 1980 by Churchill living stone

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

PAPER – 2:-CARDIAC PHYSIOLOGY I AND CLINICAL PRACTICE ON ETT

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

COURSE OBJECTIVES

To introduce students basics of Cardiac Physiology and knowledge about ETT and practice on ETT

COURSE CONTENT:

1. Introduction
2. Function of Mitral Valve
3. Function of Aortic Valve
4. Function of Pulmonic Valve
5. Pulmonary Circulation
6. Function of Cardiac Muscles
7. Function of Cardiac Muscles
8. Function of Atria
9. Function of Ventricles
10. Introduction to E.T.T (Exercise Tolerance Test)
11. Precautions performing E.T.T. i.e.
12. Various Protocols of E.T.T. machines

RECOMMENDED BOOKS:

Anatomy and physiology by ross and willison in 2003 by Churchill living stone

Physiology Gyton physiology in 1994 by WR sounder company Hercourt Brace Philadelphia PA

Prepared By:

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PAPER-3: BASIC EPIDEMIOLOGY -I (3rd 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 related disease.

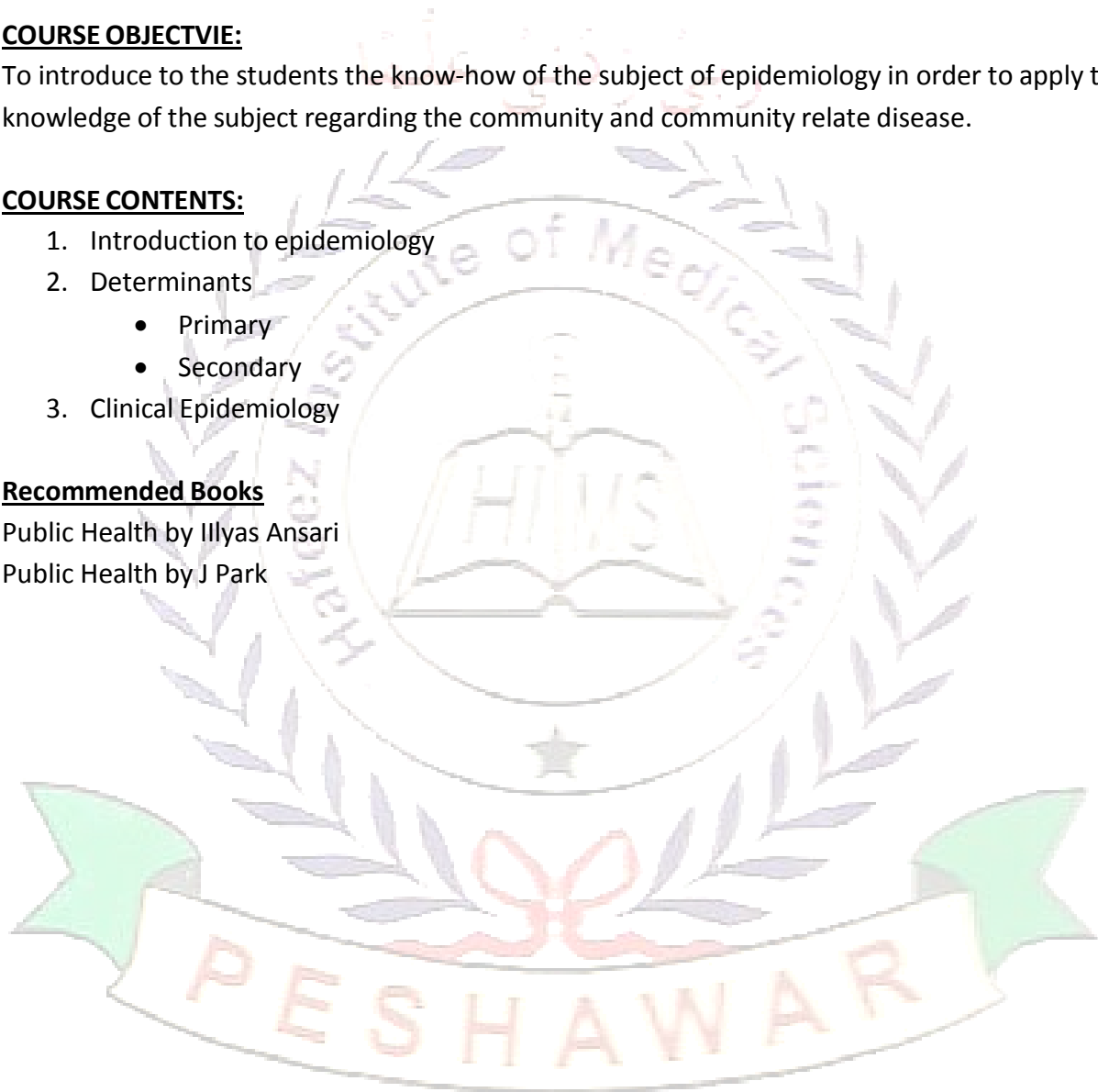
COURSE CONTENTS:

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

Recommended Books

Public Health by Ilyas Ansari

Public Health by J Park



Prepared By:
Hafeez Institute of Medical Sciences Peshawar

PAPER-4: SOCIOLOGY -I (3rd SEMESTER)

CREDIT HOURS: 3
THEORY: 100

MARKS 100
TIME: 3 HRS

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:
Hafeez Institute of Medical Sciences Peshawar

PAPER-5: BIOSTATISTICS -I (3rd SEMESTER)

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

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

4th SEMESTER**PAPER – 1:- CARDIAC ANATOMY II AND CLINICAL PRACTICE IN OPD****CREDIT HOURS: 3+1****MARKS 100****INTERNAL MARKS 40 EXTERNAL MARKS 60****TIME: 3 HRS****COURSE OBJECTIVE:**

To introduce students Gross Cardiac Anatomy and clinical practice in cardiac OPD

COURSE CONTENTS:

1. Introduction
2. Gross Anatomy
3. Blood supply of the Heart, Venous drainage
4. Systemic Circulation
5. Pulmonary Circulation
6. Function of Cardiac Muscles
7. Function of Cardae Tendeneae
8. Function of Atria
9. Function of Ventricles
10. Patient receiving and attending in OPD
11. History taking and his principal
12. Examination and his principal
13. Cardaic investigation
14. Assessment
15. Advice and preparation the patient for admission

RECOMMENDED BOOKS:

Clinical Anatomy by Snell, in 2000 by Churchill living stone

Gray anatomy by Willians warwich Dysone bansister in 1980 by Churchill living stone

REFERRAL BOOKS:

RJ Last anatomy by RMH Meminn in 1995 by Churchill living stone

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

PAPER – 2:- CARDIAC PHYSIOLOGY II AND CLINICAL PRACTICE IN CARDIOLOGY

CREDIT HOURS: 3+1

MARKS 100

INTERNAL MARKS 40 EXTERNAL MARKS 60

TIME: 3 HRS

COURSE OBJECTIVES:

To introduce students Cardiac Physiology in detail and clinical practice in Cardiology

COURSE CONTENTS:

1. Functions of Cardiac Muscles.
2. Functions of Cardiac Tendinae.
3. Physiology of Right Heart.
4. Physiology of Left Heart.
5. Electrical activity of Cardiac Muscle.
6. Physiology of S.A Node.
7. Physiology of A-V node
8. Bundle of His
9. Left and Right Bundle Branch
10. Purkinje System
11. Ward Management
12. Patient record
13. Admission of the patient
14. History and his principal
15. General, special investigation
16. Assessment of the patient
17. Preparation of the patient for cardiac surgery procedures
18. Preoperative medication
19. Pre and post up care
20. Preparation for discharge
21. B.P and temperature record

RECOMMENDED BOOKS:

Anatomy and physiology by Ross and willison in 2003 by Churchill living stone
 Physiology Gyton physiology in 1994 by WR sounder company
 Hecourt Brace Philadelphia PA

Prepared By:

Hafeez Institute of Medical Sciences Peshawar

PAPER-3: BASIC EPIDEMIOLOGY -II (4th 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 related disease.

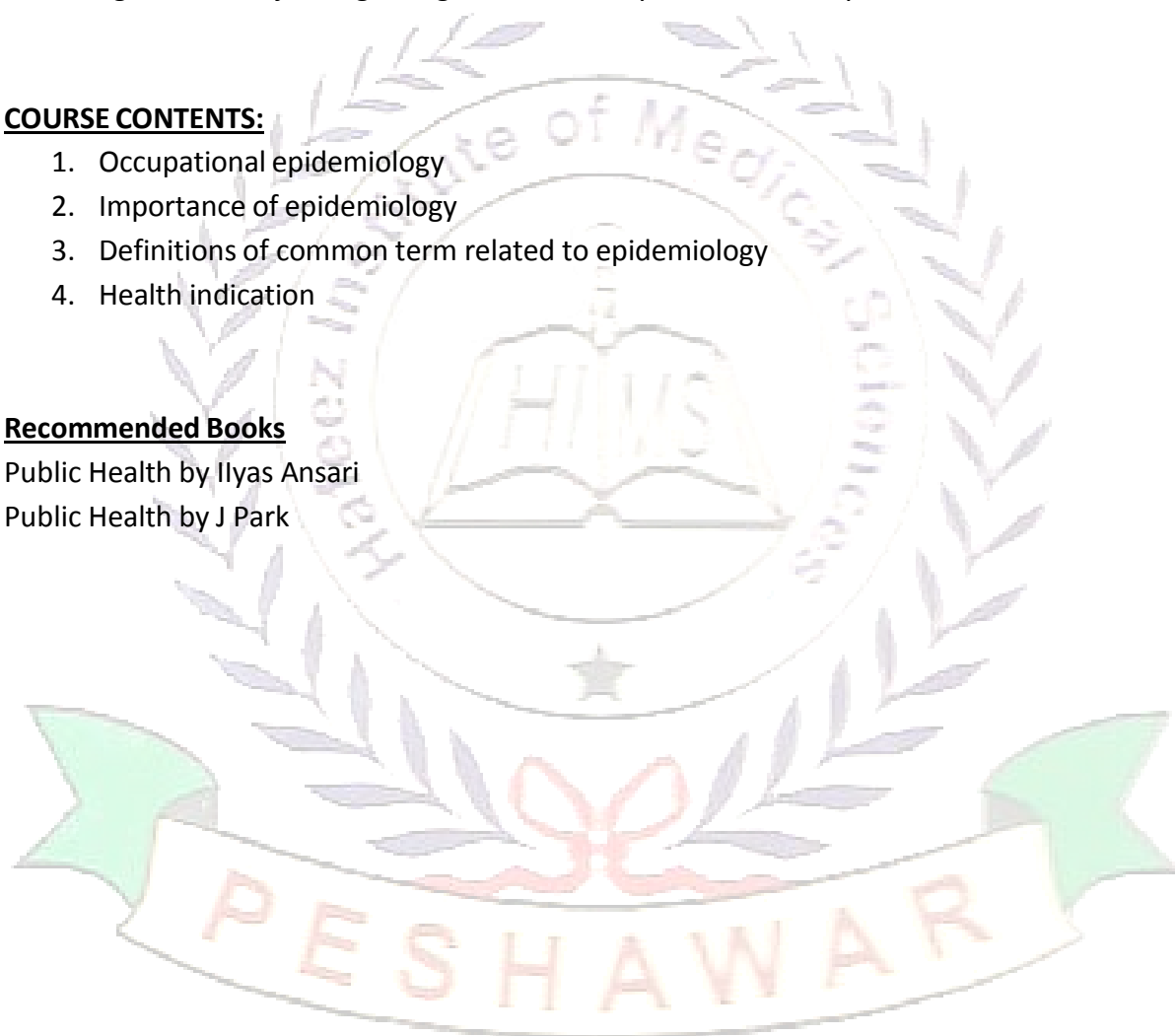
COURSE CONTENTS:

1. Occupational epidemiology
2. Importance of epidemiology
3. Definitions of common terms related to epidemiology
4. Health indicators

Recommended Books

Public Health by Ilyas Ansari

Public Health by J Park



Prepared By:
Hafeez Institute of Medical Sciences Peshawar

PAPER-4: SOCIOLOGY -II (4th SEMESTER)

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

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 Laurna 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 (4th SEMESTER)

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

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

5th SEMESTER**PAPER – 1:- CARDIAC PATHOLOGY AND CLINICAL PRACTICE IN CCU****CREDIT HOURS: 3+1****MARKS 100****INTERNAL MARKS 40****EXTERNAL MARKS 60****TIME: 3 HRS****COURSE OBJECTIVES:**

To introduce students' different cardiac disease and Patho physiology and clinical practice in CCU

COURSE CONTENTS:

1. Introduction to cardiac pathology
2. Acute Myocardial infarction
3. Old myocardial infarction
4. Post M. I angina
5. Ischaemia
6. Angina Pectoris
7. Ward management and patient record
8. History and his principal
9. Investigation and assessment
10. Emergency treatment of cardiac patient
11. Emergency cover of cardiac patient
12. Hypertension and hypotension knowledge and management
13. Diabetic patient management and care in CCU
14. Preparation for discharge

RECOMMENDED BOOKS:

ROBBIN pathology by Cotran Kumar Robbins in 1989 by WB saunders

Short notice book of pathology by M. Inam Danish in 1992 by

N.I.C.V.D.E Karachi

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

PAPER – 2:-CARDIAC PHARMACOLOGY I AND CLINICAL PRACTICE IN CARDIOLOGY

CREDIT HOURS: 3+1

MARKS 100

INTERNAL MARKS 40

EXTERNAL MARKS 60

TIME: 3 HRS

COURSE OBJECTIVES:

Knowledge about indications, Contraindications, dosage & preparation of Cardiac Medicine and clinical in Cardiology unit

COURSE CONTENTS:

Vasodilators

Indications, Contra indications, Dosage, Preparation

Beta Blockers

Indications, Contra indications, Dosage, Preparation

ACE inhibitors

Indications, Contra indications, Dosage, Preparation

Cardiac Glycoside

Indications, Contra indications, dosage, Preparation

Ward management and patient record

History and his principal

Investigation and assessment

Emergency treatment of cardiac patient

Emergency cover of cardiac patient

Hypertension and hypotension knowledge and management

Diabetic patient management and care in CCU

Preparation for discharge

RECOMMENDED BOOKS:

Clinical Pharmacology by Shamim Chazala in 2003 by Khurram and brother Karachi

Lippincot Pharmacology by Mycek 2nd edition Lippincot raven

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PAPER-4 PATHOLOGY -I (5th 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. Introduction to Pathology
2. Cell Injury
3. Inflammation
4. Repair

Recommended Books

- Robin's textbook of Pathology (Text Book) by Robin Cottran Kumar 6th 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-5 BASIC COMMUNICATION SKILLS -I (5th SEMESTER)

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

COURSE OBJECTIVE:-

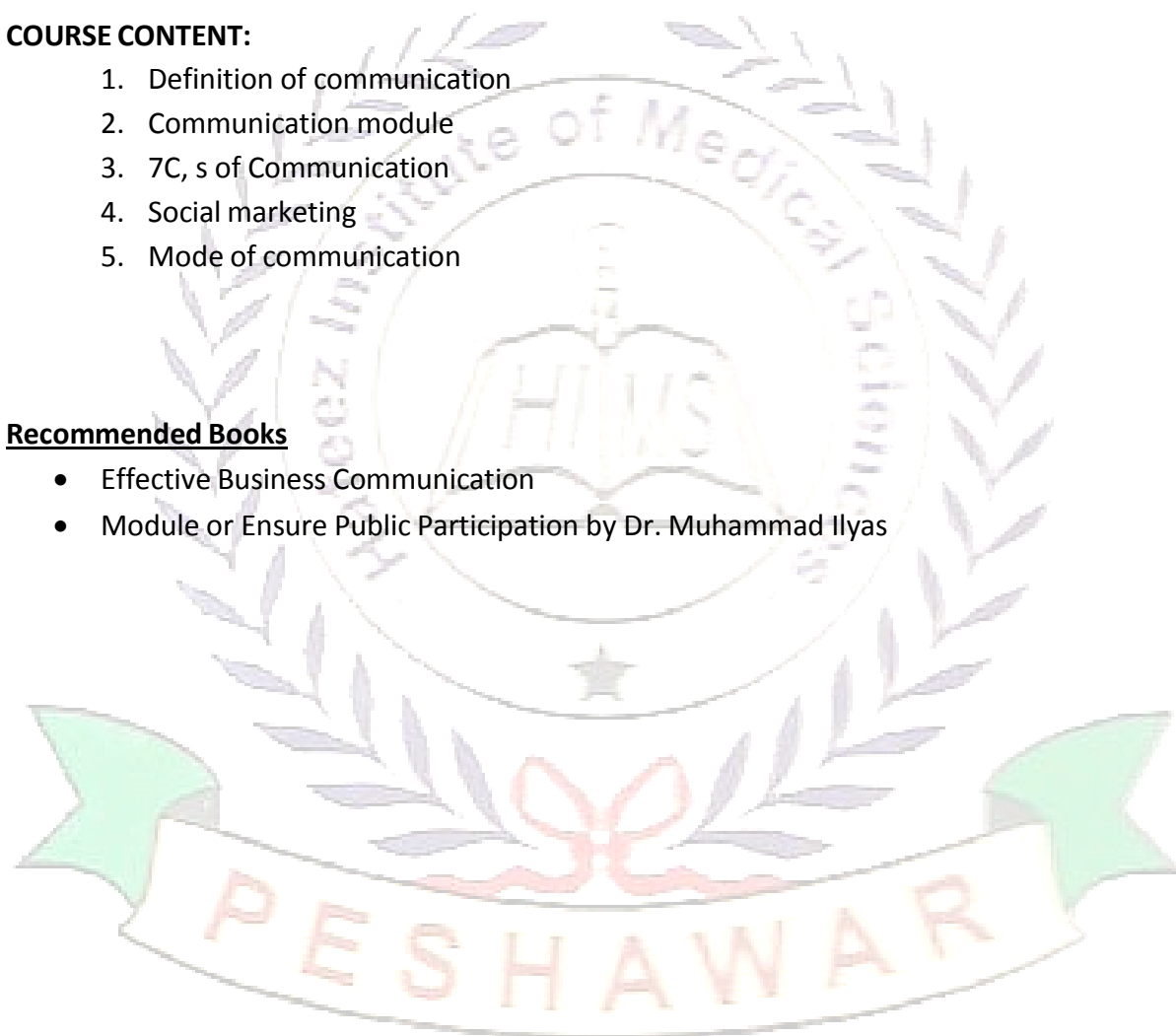
To introduce to the students about the basic communication skill

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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6th SEMESTER**PAPER – 1:- CARDIAC PATHOLOGY II AND CLINICAL PRACTICE ON HOLTER AND B.P****CREDIT HOURS: 3+1****MARKS 100****INTERNAL MARKS 40****EXTERNAL MARKS 60****TIME: 3 HRS****COURSE OBJECTIVES:**

To introduce students' other cardiac disease and their treatment and clinical practice on 24 hours Holter machine and B.P monitoring

COURSE CONTENTS:

1. Rheumatic heart Disease
2. Ischaemic heart disease
3. Congestive heart Failing
4. Cardiomyopathies
5. Pericardial Disease.
6. 24 hrs holter monitoring
7. 24 hrs B.P recording
8. Arrhythmias & PVCc
9. Holter Machine, introduction, Operating, Function and precaution

RECOMMENDED BOOKS:

ROBBIN pathology by Cotran Kumar Robbins in 1989 by WB saunders
 Short notice book of pathology by M. Inam Danish in 1992 by
 N.I.C.V.D.E Karachi
 Pathology by Water Israel by S.W Water in 1996 by Churchill living stone

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PAPER – 2:- PHARMACOLOGY II AND CLINICAL PRACTICE

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

COURSE OBJECTIVES:

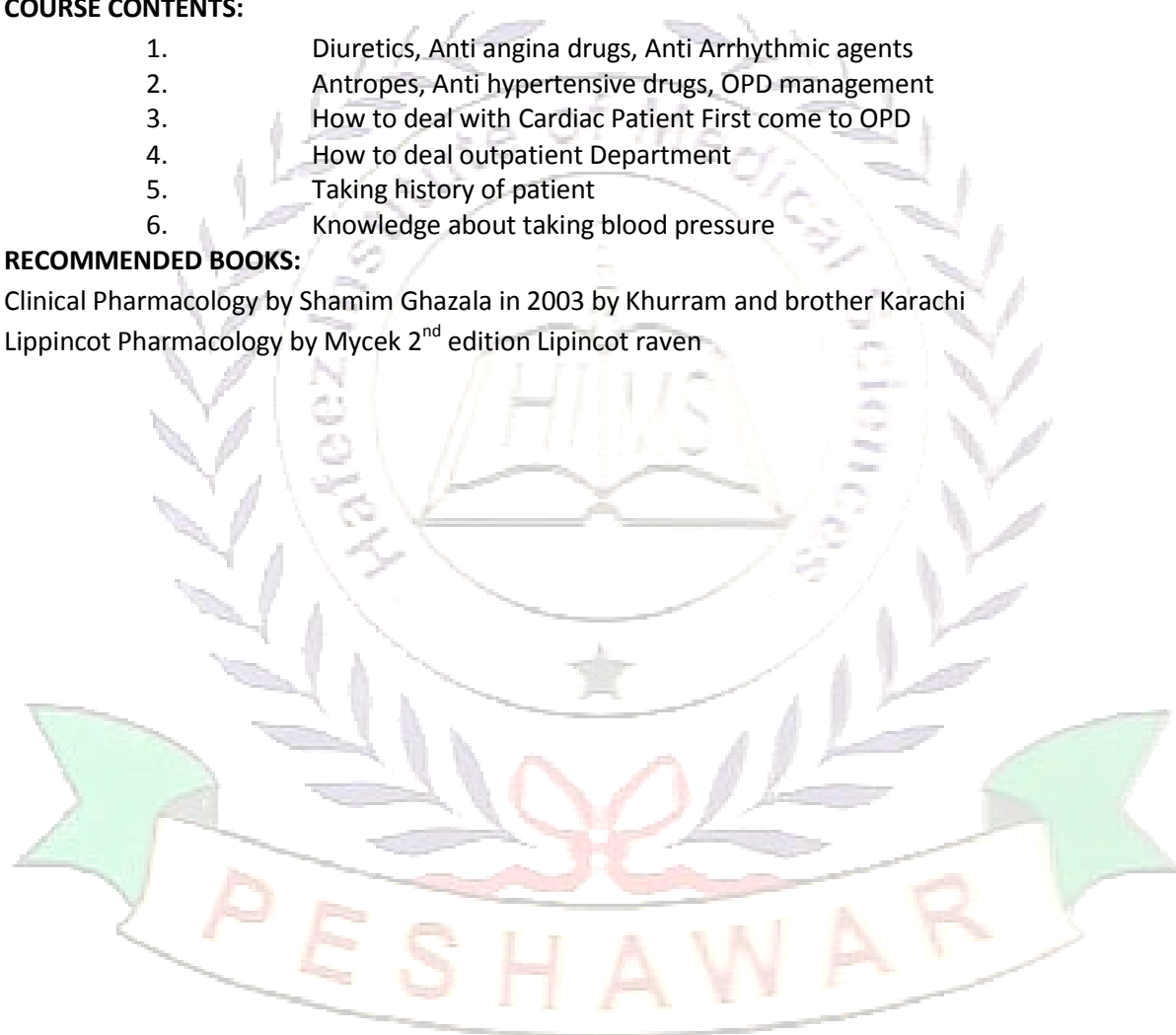
Knowledge about indication, Contra indications, dosage and Preparation of Cardiac Medicines and clinical practice in cardiology OPD

COURSE CONTENTS:

1. Diuretics, Anti angina drugs, Anti Arrhythmic agents
2. Antropes, Anti hypertensive drugs, OPD management
3. How to deal with Cardiac Patient First come to OPD
4. How to deal outpatient Department
5. Taking history of patient
6. Knowledge about taking blood pressure

RECOMMENDED BOOKS:

Clinical Pharmacology by Shamim Ghazala in 2003 by Khurram and brother Karachi
Lippincot Pharmacology by Mycek 2nd edition Lipincot raven



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PAPER-4 PATHOLOGY -II (6th 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 6th 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-5 BASIC COMMUNICATION SKILLS -II (6th SEMESTER)

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

COURSE OBJECTIVE:

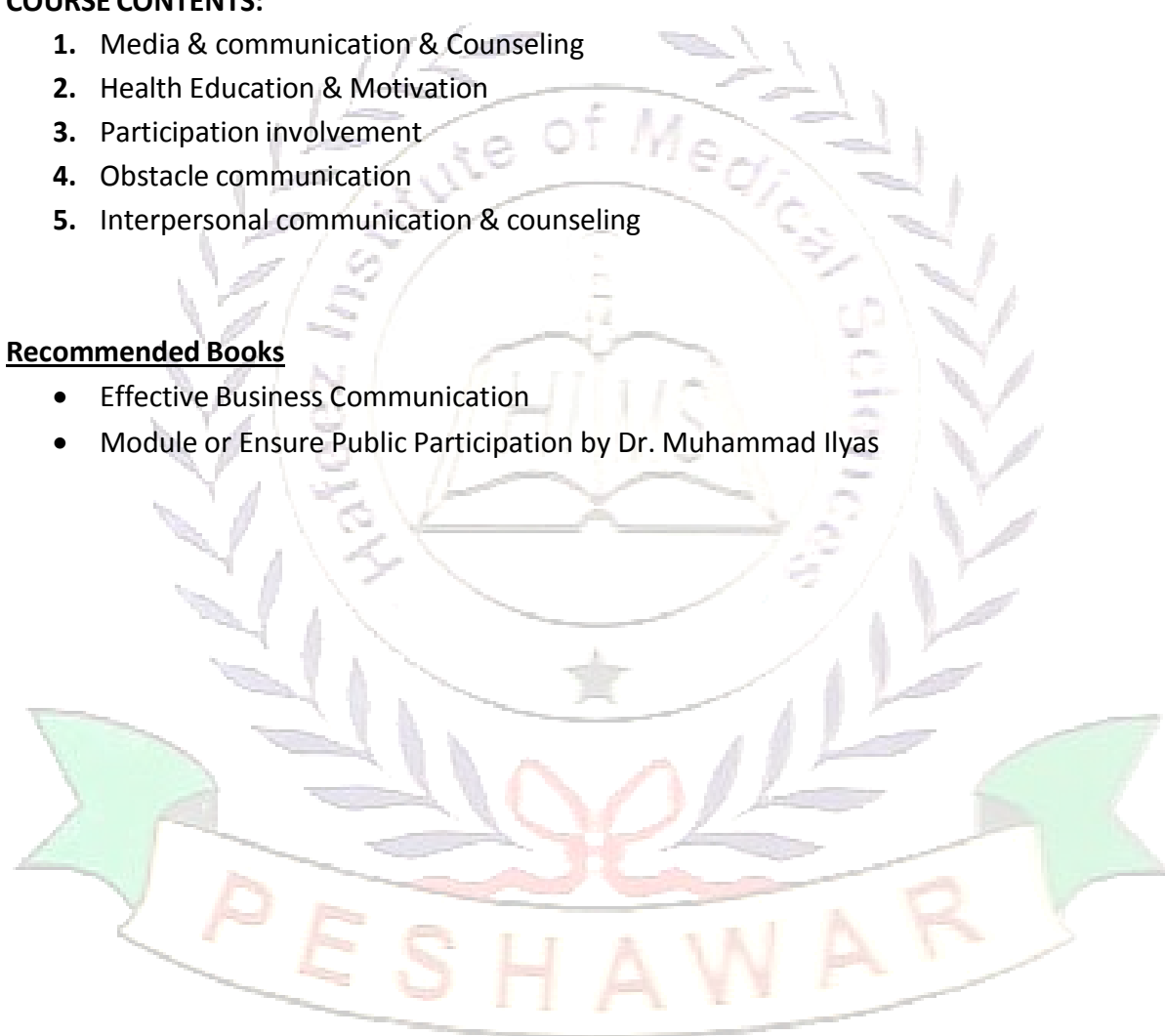
To introduce the student about the basic communication skill

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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7th SEMESTER**PAPER-I: PATHOLOGY III AND CLINICAL PRACTICE**

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

COURSE OBJECTIVES:

To introduce students other Congenital heart disease and clinical practice on TTE

COURSE CONTENTS:

1. Introduction to Cardiac pathology
2. Congenital heart Disease CHD i.e. Ventricle septal defect, Atrial septal defect, TOF, PDA, TGA etc
3. Rheumatic heart disease mitral stenosis & regurgitation
4. Aortic Stenosis & regurgitation
5. Echo cardiography machine
- 6.
7. Transsthoracic and trans esophageal echo
8. Operating echo machine

RECOMMENDED BOOKS:

Braunwald by Eugene Braunwald in 2005 by Elsevier Saunders

PAPER – 2:- CARDIAC CATH LAB I AND CLINICAL PRACTICE

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 cath machine and different invasive procedures.

COURSE CONTENTS:

Cath machine: maintenance, care, operating, uses
 Invasive procedures, Angiography

RECOMMENDED BOOKS:

Echo made easy by Sam Khaddoura in 2002 by Elsevier sciences
 Braunwald by Eugene Braunwald in 2005 by Elsevier Saunders

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PAPER-3: PUBLIC HEALTH -I (7th SEMESTER)

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

COURSE OBJECTIVE:

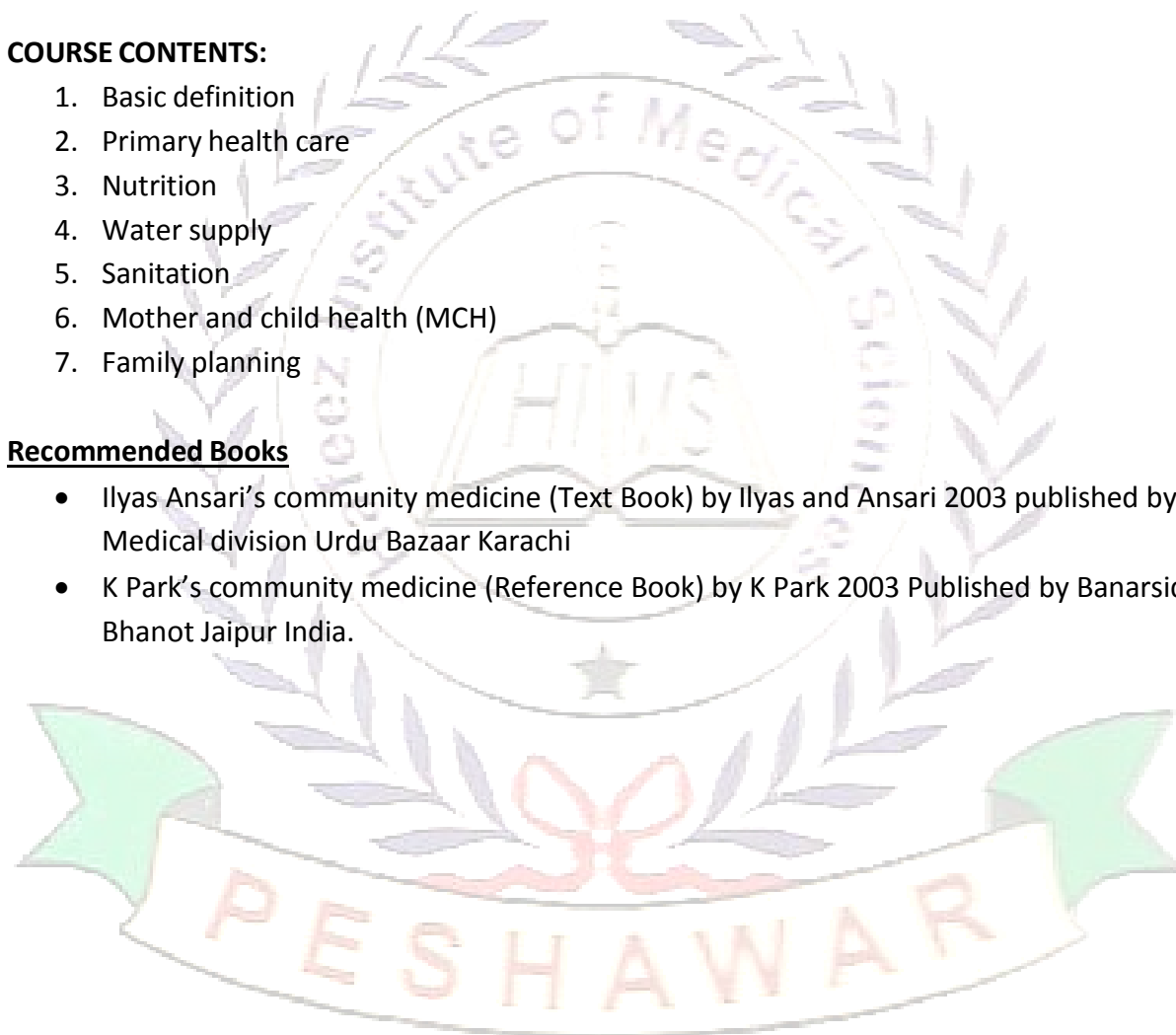
To introduce to the student the significance of the discipline of public health in medical and applied social sciences regarding its history applications and development.

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.



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PAPER-4: RESEARCH METHODOLOGY -I (7th SEMESTER)

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

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.

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PAPER-5: ETHICS & MANAGEMENT -I (7th SEMESTER)

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

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.

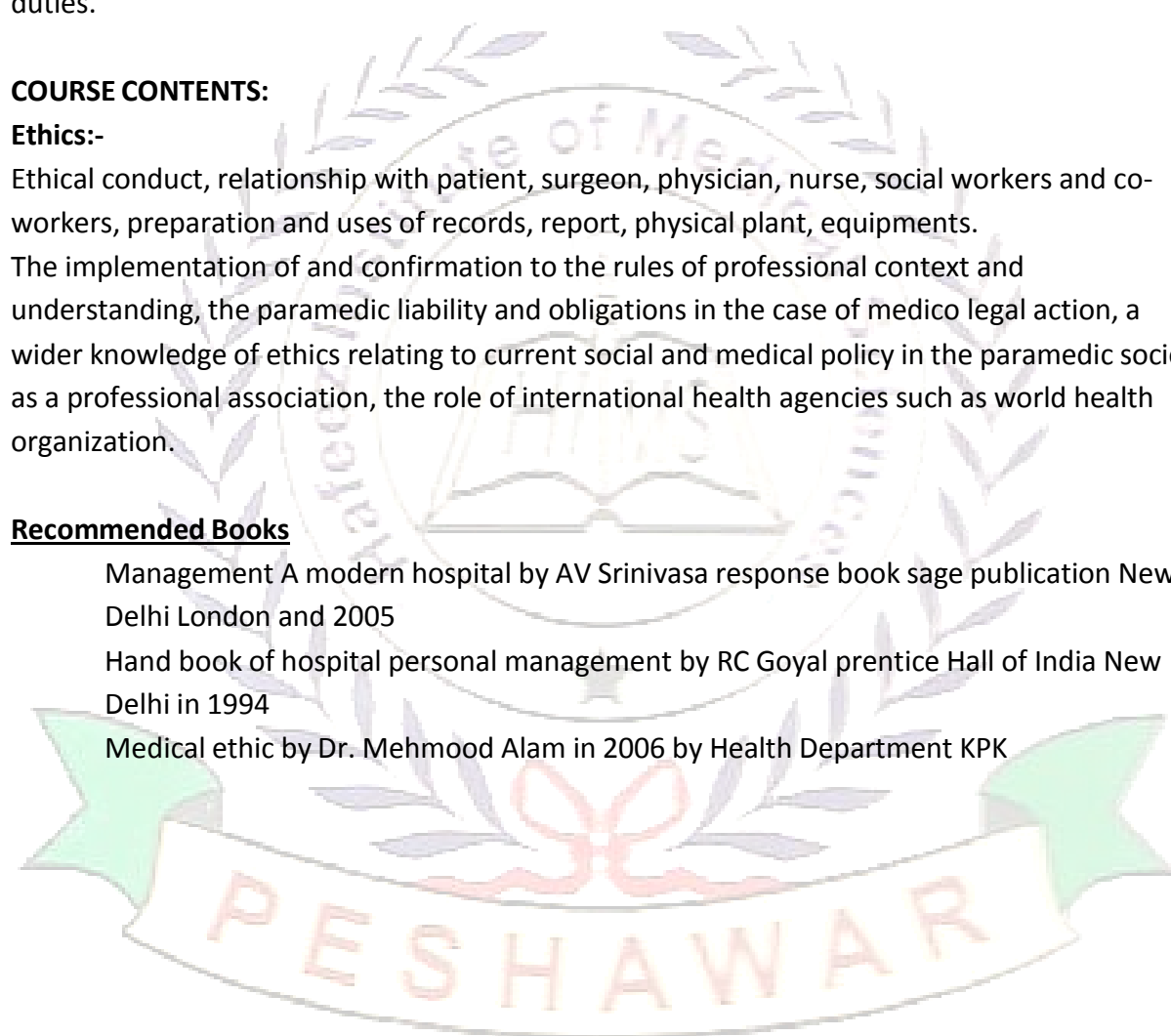
The implementation of and confirmation to the rules of professional context and understanding, the paramedic liability and obligations in the case of medico legal action, a wider knowledge of ethics relating to current social and medical policy in the paramedic society as a professional association,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



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8th SEMESTER**PAPER – 1:- PHARMACOLOGY III AND CLINICAL PRACTICE****CREDIT HOURS: 3+1****MARKS 100****INTERNAL MARKS 40****EXTERNAL MARKS 60****TIME: 3 HRS****COURSE OBJECTIVES:**

Knowledge about Indications, Contraindications, dosage and Preparation of Cardiac Medicine and clinical practice on TTE

COURSE CONTENTS:

1. A.C.E inhibitors
2. Cardiac Glycosides
3. Dopamine, Dobutrex, Dobutamine, Adrenaline, Nor Adrenaline
4. Trans oesophageal echo under supervision of consultant cardiologist
5. Knowledge about 2D eco, motionmode or M-Mode
6. Use of Doppler Echo-1 colour Doppler, continuous wave Doppler, pulse wave Doppler

RECOMMENDED BOOKS:

Clinical Pharmacology by Shamin Ghazala in 2003 by Khurram and brother Karachi
Lippincot Pharmacology by Mycek 2nd edition Lipincot raven
Echo made easy by same Khaddoura in 2002 by Elsevier sciences

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Hafeez Institute of Medical Sciences Peshawar

PAPER – 2:- CARDIAC CATH LAB II AND CLINICAL PRACTICE**CREDIT HOURS: 3+1****MARKS 100****INTERNAL MARKS 40****EXTERNAL MARKS 60****TIME: 3 HRS****COURSE OBJECTIVE:**

To introduce to the student about angioplasty, valvulo plasty procedure, PTMC, cardio cath

COURSE CONTENTS:

Percutaneous trans luminal mitral valve

Commesurgotmy

Aortic and pulmonic, valvulo plasty

Percutaneous luminal coronary, angio plasty, cardiac cath for diagnosis of various congenital disease

Ward management and patient record

History and his principal

Investigation and assessment

Provisional diagnosis / treatment of cardiac patient

Differential diagnosis of cardiac patient

Hypertension and by hypotension knowledge and management

Diabetic patient management and care in Cardiology ward

Preparation for discharge

RECOMMENDED BOOKS:

Echo made easy by sam Khaddoura in 2002 by Elsevier sciences

Brauanwald by Uqene branwaled in 2005 by Elsevier Sawders

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PAPER-3: PUBLIC HEALTH -II (8th 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.

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PAPER-4: RESEARCH METHODOLOGY -II (8th SEMESTER)

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

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 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.



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PAPER-5: ETHICS & MANAGEMENT -II (8th SEMESTER)

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

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

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