

رَبِّهِمْ ذُنُوبًا عَلَيْهِمْ
CURRICULUM

For

**B.Sc (Hons) Medical Laboratory
Technology**

4 Years Degree



HAFEEZ INSTITUTE OF MEDICAL SCIENCES

1st Semester (1st Year)

Papers	Course Code	Subject	Credit Hours	
			Theory	Practical
1	MLT01	Anatomy-I	3	1
2	MLT02	Physiology-I	3	1
3	MLT03	Pharmacology-I	3	1
4	MLT04	Islamic Education	3	0
5	MLT05	Biochemistry-I	3	1
6	MLT06	Computer Skills-I	3	1
TOTAL			23	

2nd Semester (1st Year)

Papers	Course Code	Subject	Credit Hours	
			Theory	Practical
1	MLT07	Anatomy-II	3	1
2	MLT08	Physiology-II	3	1
3	MLT09	Pharmacology-II	3	1
4	MLT10	Pak Study	3	0
5	MLT11	Biochemistry-II	3	1
6	MLT12	Computer Skills-II	3	1
TOTAL			23	

3rd Semester (2nd Year)

Papers	Course Code	Subject	Credit Hours	
			Theory	Practical
1	MLT13	Hematology –I	3	1
2	MLT14	Clinical Pathology - I	3	1
3	MLT15	Basic Epidemiology-I	3	1
4	MLT16	Sociology –I	3	0
5	MLT17	Bio-Statics-I	3	0
TOTAL			18	

4th Semester (2nd Year)

Papers	Course Code	Subject	Credit Hours	
			Theory	Practical
1	MLT18	Hematology –II	3	1
2	MLT19	Clinical Pathology – II	3	1
3	MLT20	Basic Epidemiology-II	3	1
4	MLT21	Sociology –II	3	0
5	MLT22	Bio-Statics-II	3	0
TOTAL			18	

5th Semester (3rd Year)

Papers	Course Code	Subject	Credit Hours	
			Theory	Practical
1	MLT23	Hematology-III	3	1
2	MLT24	Microbiology-I	3	1
3	MLT25	Histology – I	3	1
4	MLT26	Pathology-I	3	0
5	MLT27	Basic Communication Skills-I	3	0
TOTAL			18	

6th Semester (3rd Year)

Papers	Course Code	Subject	Credit Hours	
			Theory	Practical
1	MLT28	Hematology-IV	3	1
2	MLT29	Microbiology-II	3	1
3	MLT30	Histology – II	3	1
4	MLT31	Pathology-II	3	0
5	MLT32	Basic Communication Skills-II	3	0
TOTAL			18	

7th Semester (4th Year)

Papers	Course Code	Subject	Credit Hours	
			Theory	Practical
1	MLT33	Microbiology-III (Mycology & Para cytology)	3	1
2	MLT34	Histopathology – I	3	1
3	MLT35	Cytology – I	3	1
4	MLT36	Public Health-I	3	1
5	MLT37	Research Methodology-I	3	0
6	MLT38	Ethics & Management-I	3	0
TOTAL			22	

8th Semester (4th Year)

Papers	Course Code	Subject	Credit Hours	
			Theory	Practical
1	MLT39	Microbiology-IV	3	1
2	MLT40	Histopathology – II	3	1
3	MLT41	Cytology – II	3	1
4	MLT42	Public Health-II	3	1
5	MLT43	Research Methodology-II	3	0
6	MLT44	Ethics & Management-II	3	0
TOTAL			22	

1ST SEMESTER

Paper-1: ANATOMY

TOTAL MARKS : 100

CREDIT HOURS 3+1

INTERNAL MARKS: 40

EXTERNAL MARKS: 60

TIME 3 HOURS

COURSE 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.

Paper:-2 PHYSIOLOGY

TOTAL MARKS: 100

CREDIT HOURS 3+1

INTERNAL MARKS: 40

EXTERNAL MARKS: 60

TIME 3 HOURS

COURSE OBJECTIVE:

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

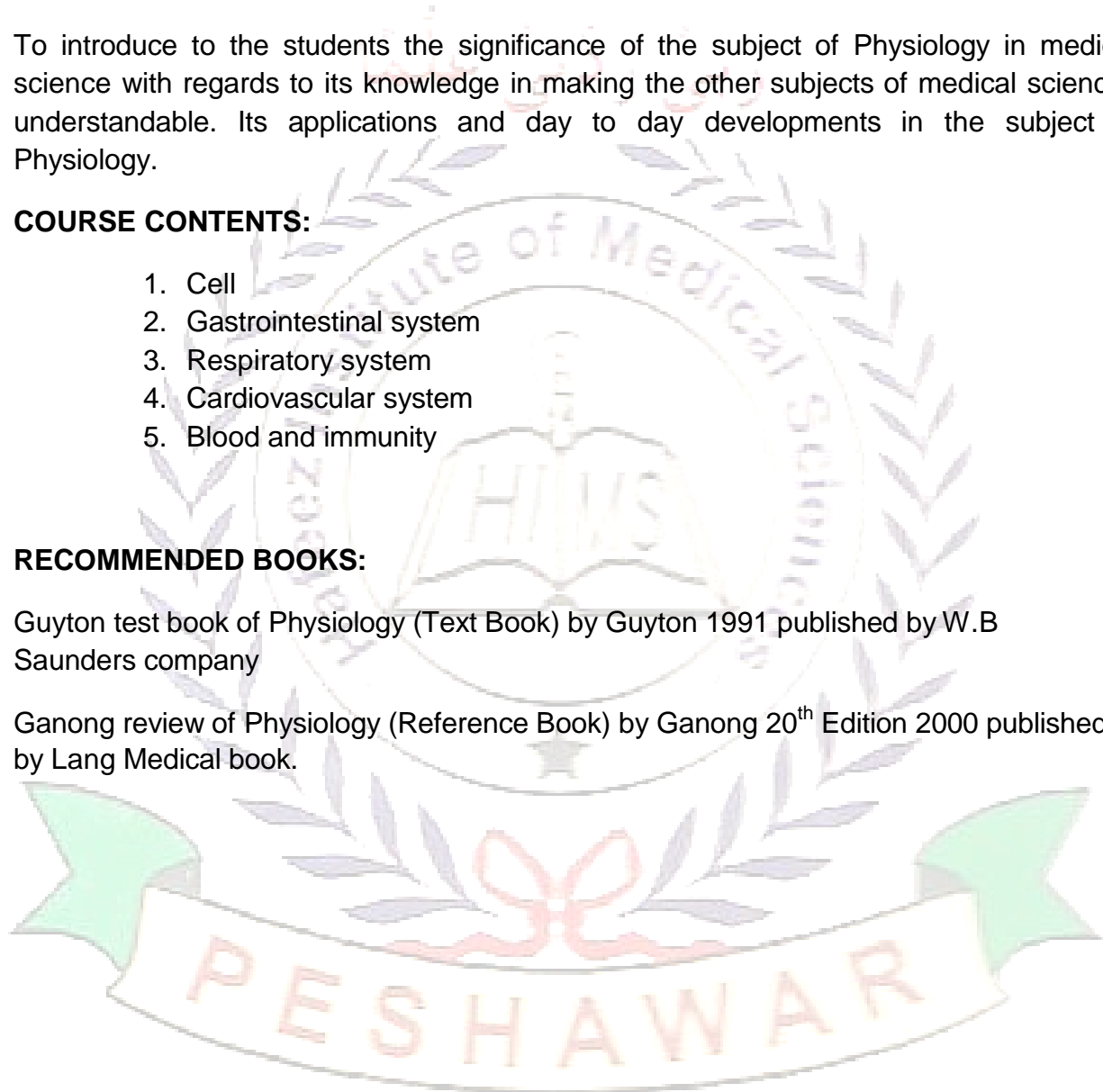
COURSE CONTENTS:

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

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 Lang Medical book.



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Paper :- 3 PHARMACOLOGY

TOTAL MARKS : 100

CREDIT HOURS 3+1

INTERNAL MARKS: 40

EXTERNAL MARKS: 60

TIME 3 HOURS

COURSE OBJECTIVE:

To introduce to the students the knowledge of the subject of pharmacology with regards to its importance in understanding the other disciplines of medical science and 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:

Lippincot's pharmacology (text book) by Mycek 2nd edition 2000 published by Lippincot Raven

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



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COURSE TITLE: ISLAMIC EDUCATION

TOTAL MARKS : 100

CREDIT HOURS 3

INTERNAL MARKS: 40

EXTERNAL MARKS: 60

TIME 3 HOURS

COURSE 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 CONTENTS:

Holy Quran and Sunnah

1.1 Holy Quran

- * Introduction
- * Importance and characteristics
- * Sura-e-Hujaraat 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 Islamiat 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

Life of Holy Prophet

- 3.1 study of the life of the holy Prophet & Seerat
- 3.2 life of the Holy Prophet at Makkah 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)

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- 3.6 treaty of Madina (Misaq-e-Mukarama)
- 3.7 conquest of Maka Al-Mukarama)
- 3.8 hajjat-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: Kisb-e-Halal, Human Dignity, Social justice Adle-e-Shoora

Influence of the Islamic civilization

- 4.4 Panacea of our problems
- 4.6 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 Bazar.



Paper:- 5 BIOCHEMISTRY

1st Semester

TOTAL MARKS : 100

CREDIT HOURS 3+1

INTERNAL MARKS: 40

EXTERNAL MARKS: 60

TIME 3 HOURS

COURSE OBJECTIVE:

The induction 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.

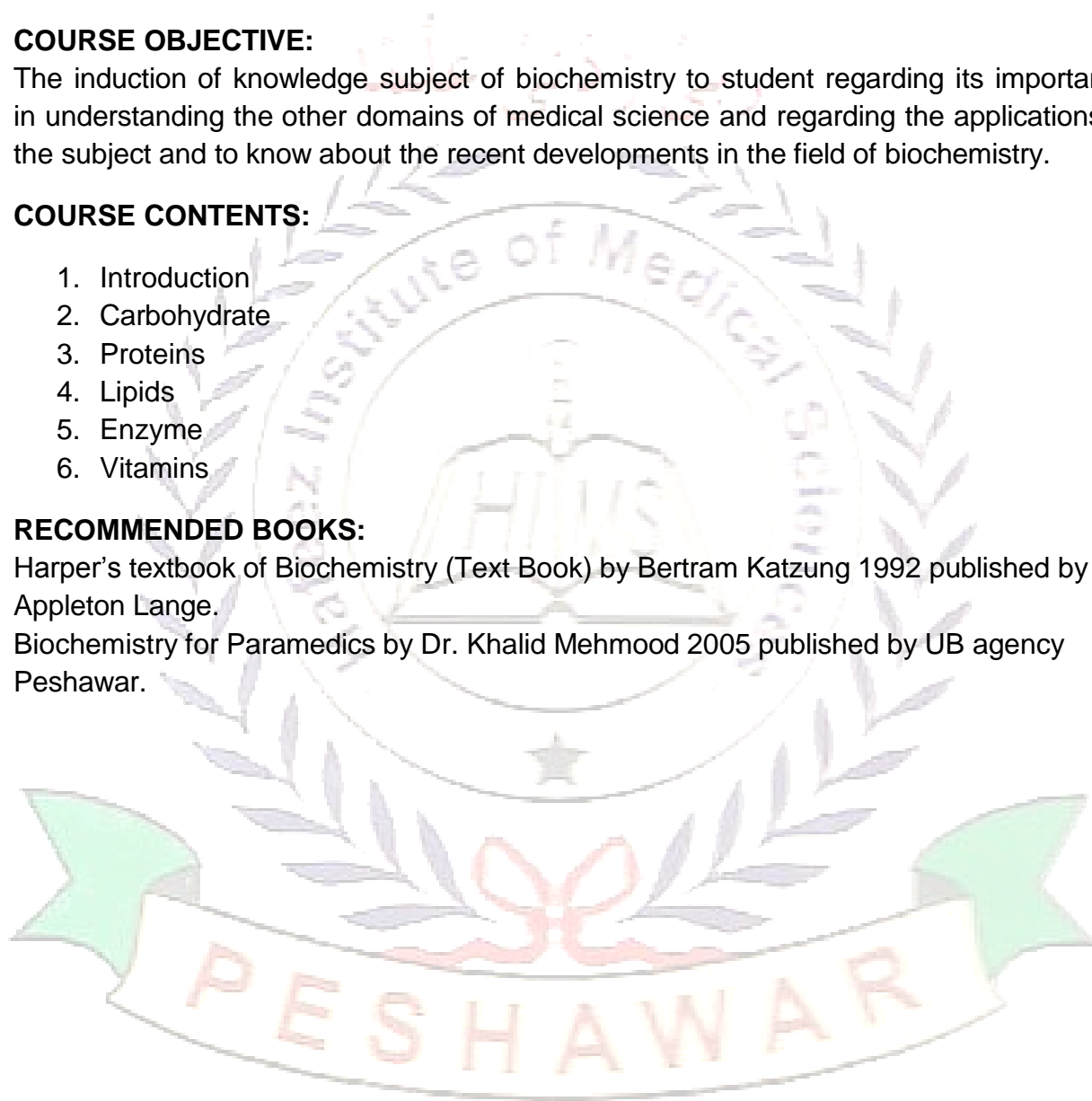
COURSE CONTENTS:

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

RECOMMENDED BOOKS:

Harper's textbook 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.



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Paper:- 6 COMPUTER SKILLS

1st Semester

TOTAL MARKS : 100

CREDIT HOURS 3+1

INTERNAL MARKS: 40

EXTERNAL MARKS: 60

TIME 3 HOURS

COURSE OBJECTIVES:

To introduce to the student the significant for computer definitions, history, types and component, hardware and software application

COURSE CONTENT:

Introduction

Definition of computer
History of computer
Classification of computer
Components of computer

Hardware and Software

Physical components of computer
Logical component of computer
System software
Application software

Storage devices

Magnetic storage devices
Optical storage devices
Memories

RECOMMENDED BOOKS:

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

2nd SEMESTER

Paper-1: ANATOMY

TOTAL MARKS : 100

CREDIT HOURS 3+1

INTERNAL MARKS: 40

EXTERNAL MARKS: 60

TIME 3 HOURS

COURSE 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.

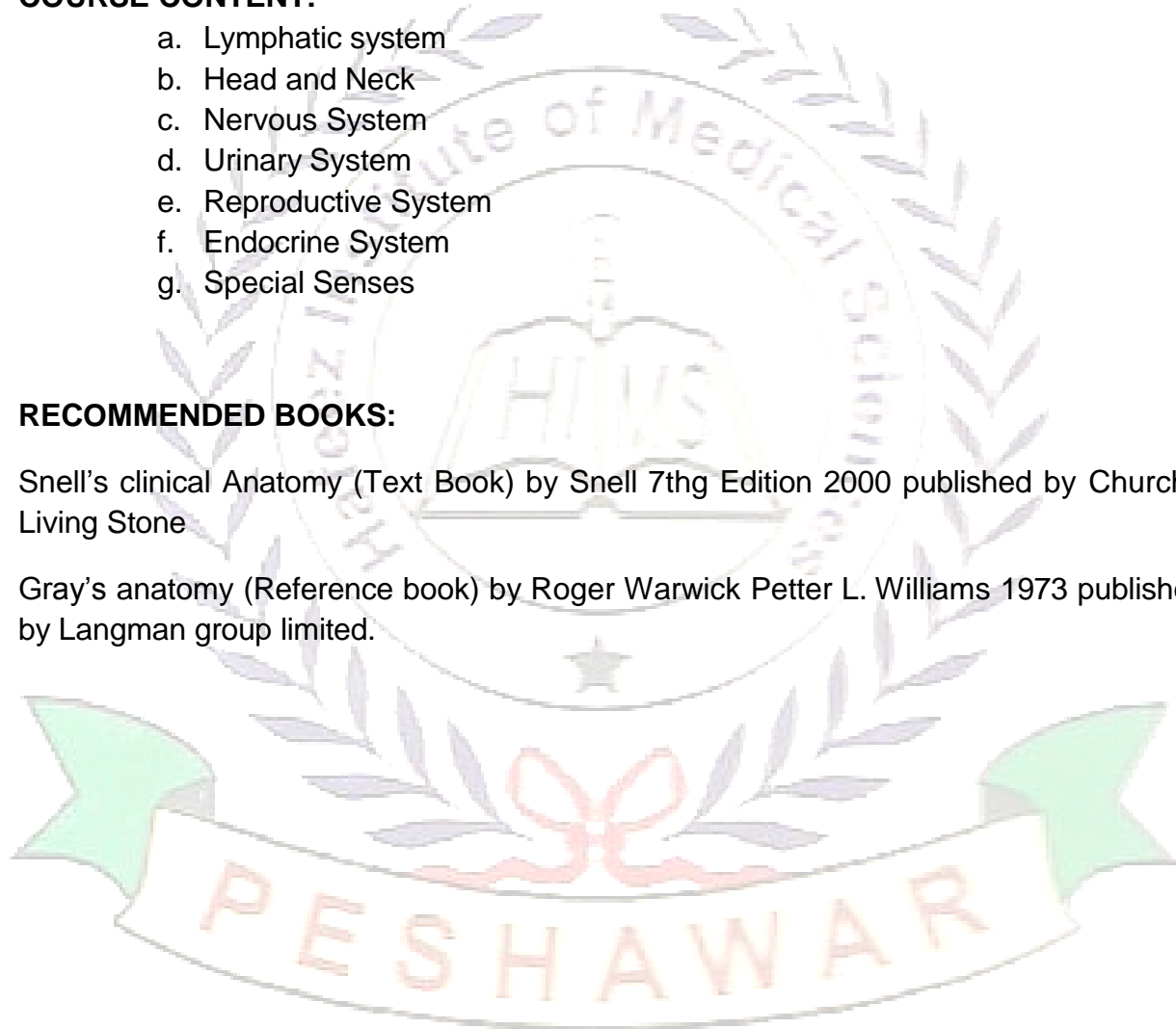
COURSE CONTENT:

- 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.



HAFEEZ INSTITUTE OF MEDICAL SCIENCES

Paper:-2 PHYSIOLOGY

TOTAL MARKS : 100

INTERNAL MARKS: 40

EXTERNAL MARKS: 60

CREDIT HOURS 3+1

TIME 3 HOURS

COURSE OBJECTIVE:

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

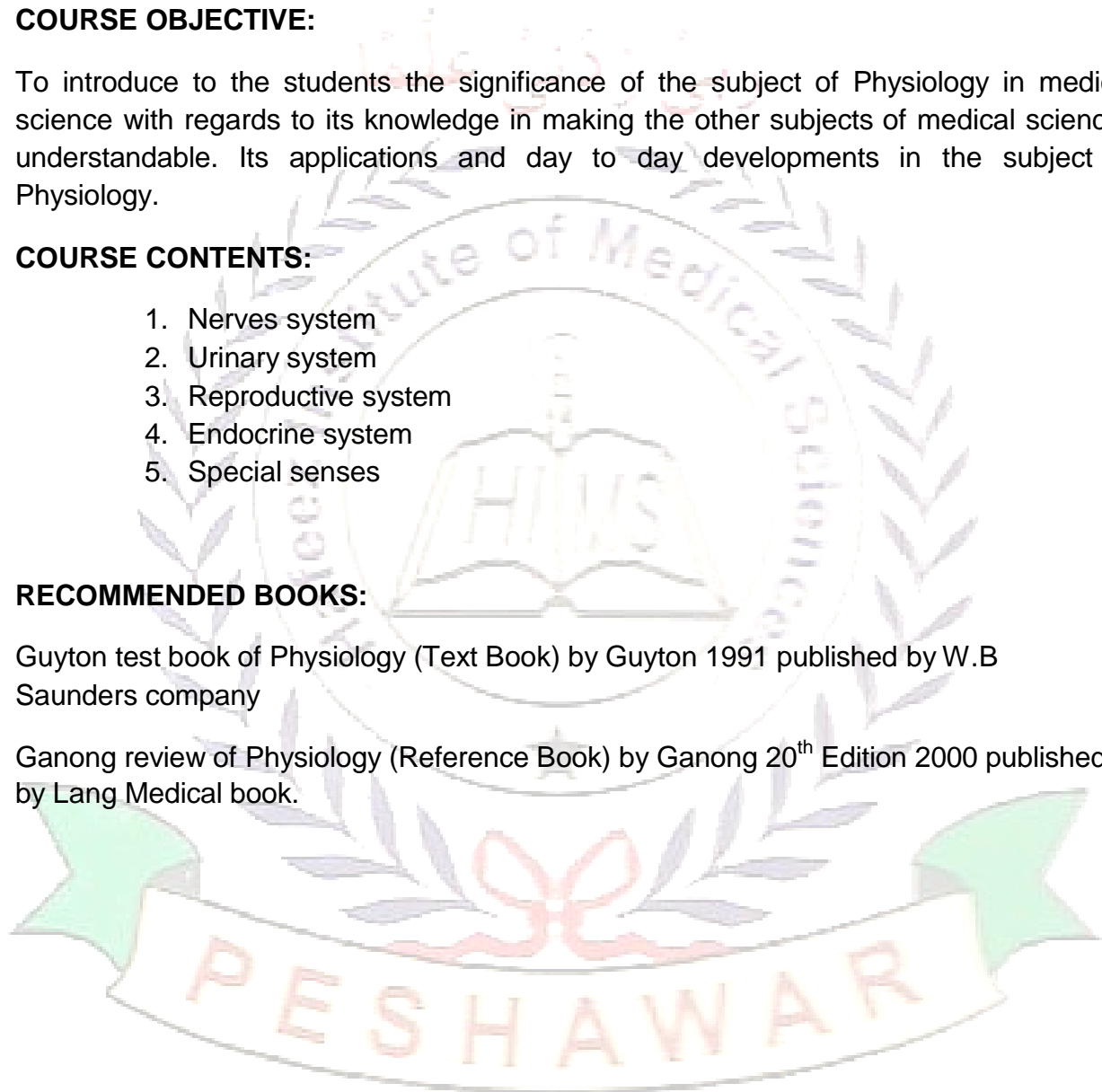
COURSE CONTENTS:

1. Nerves system
2. Urinary system
3. Reproductive system
4. Endocrine system
5. 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 Lang Medical book.



HAFEEZ INSTITUTE OF MEDICAL SCIENCES

Paper :- 3 PHARMACOLOGY

TOTAL MARKS : 100

CREDIT HOURS 3+1

INTERNAL MARKS: 40

EXTERNAL MARKS: 60

TIME 3 HOURS

COURSE OBJECTIVE:

To introduce to the students the knowledge of the subject of pharmacology with regards to its importance in understanding the other disciplines of medical science and 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:

Lippincot's pharmacology (text book) by Mycek 2nd edition 2000 published by Lippincot Raven

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



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Paper :- 4 PAK STUDIES

TOTAL MARKS : 50

CREDIT HOURS 3

INTERNAL MARKS: 40

EXTERNAL MARKS: 60

TIME 3 HOURS

COURSE OBJECTIVE:

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

COURSE CONTENTS:

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 14th August 1947)

IV Chapter Four

Establishment of Pakistan (Political, Social financial Problems)

V Chapter Five

Constitutional and Political Developments in Pakistan

VI Chapter Six

Geographical condition of Pakistan

VII Chapter Seven

Pakistan and Muslim World

RECOMMENDED BOOKS:

Pakistan Studies Compulsory for Degree Courses by Dr. Noshaad Khan

Paper:- 5 BIOCHEMISTRY

TOTAL MARKS : 100

CREDIT HOURS 3+1

INTERNAL MARKS: 40

EXTERNAL MARKS: 60

TIME 3 HOURS

COURSE OBJECTIVE:

The induction 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.

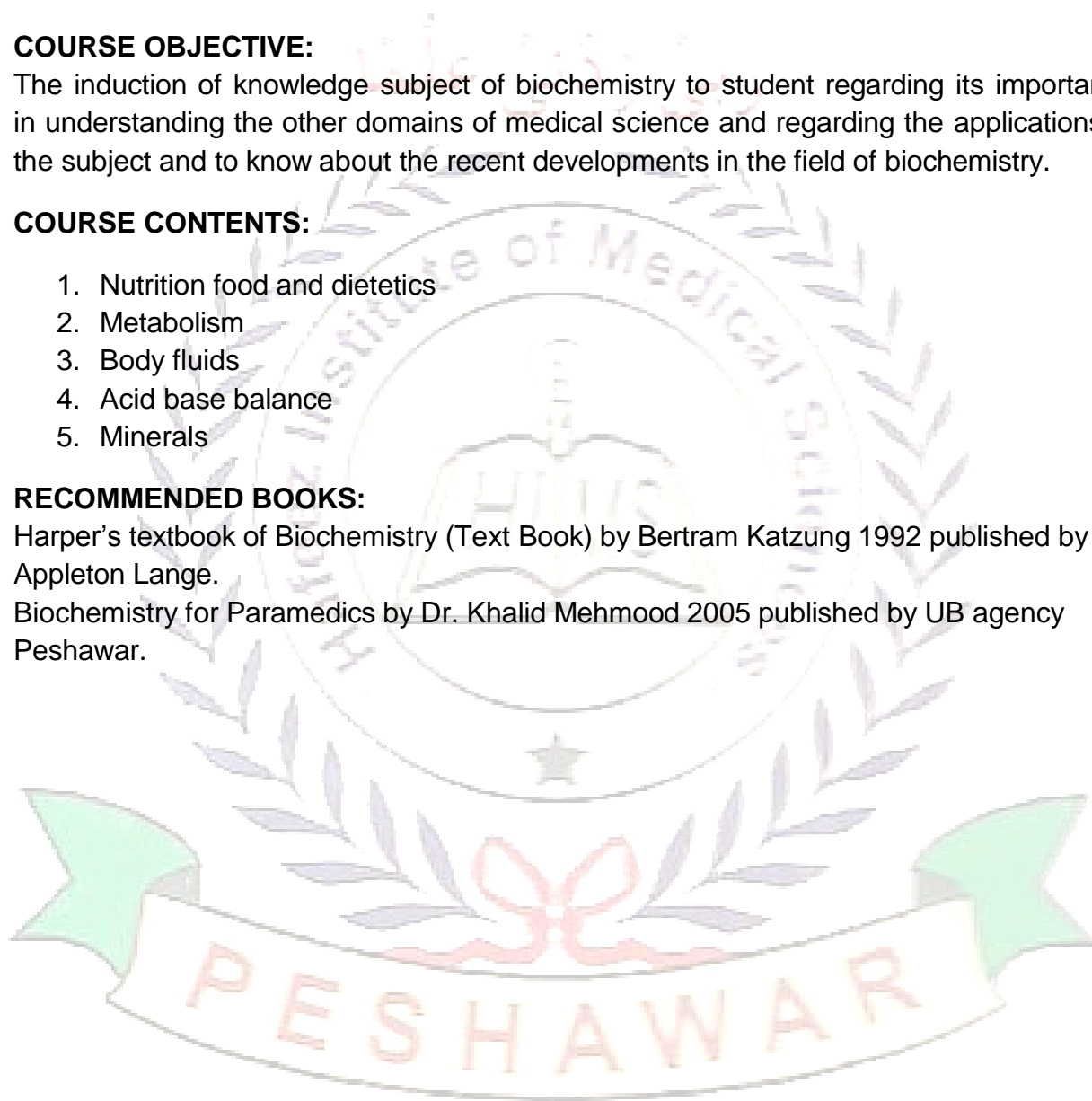
COURSE CONTENTS:

1. Nutrition food and dietetics
2. Metabolism
3. Body fluids
4. Acid base balance
5. Minerals

RECOMMENDED BOOKS:

Harper's textbook 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.



HAFEEZ INSTITUTE OF MEDICAL SCIENCES

Paper:- 6 COMPUTER SKILLS

TOTAL MARKS : 100

CREDIT HOURS 3+1

INTERNAL MARKS: 40

EXTERNAL MARKS: 60

TIME 3 HOURS

COURSE OBJECTIVES:

To introduce to the student the significant for computer definitions, history, types and component, hardware and software application

COURSE CONTENT:

Application software

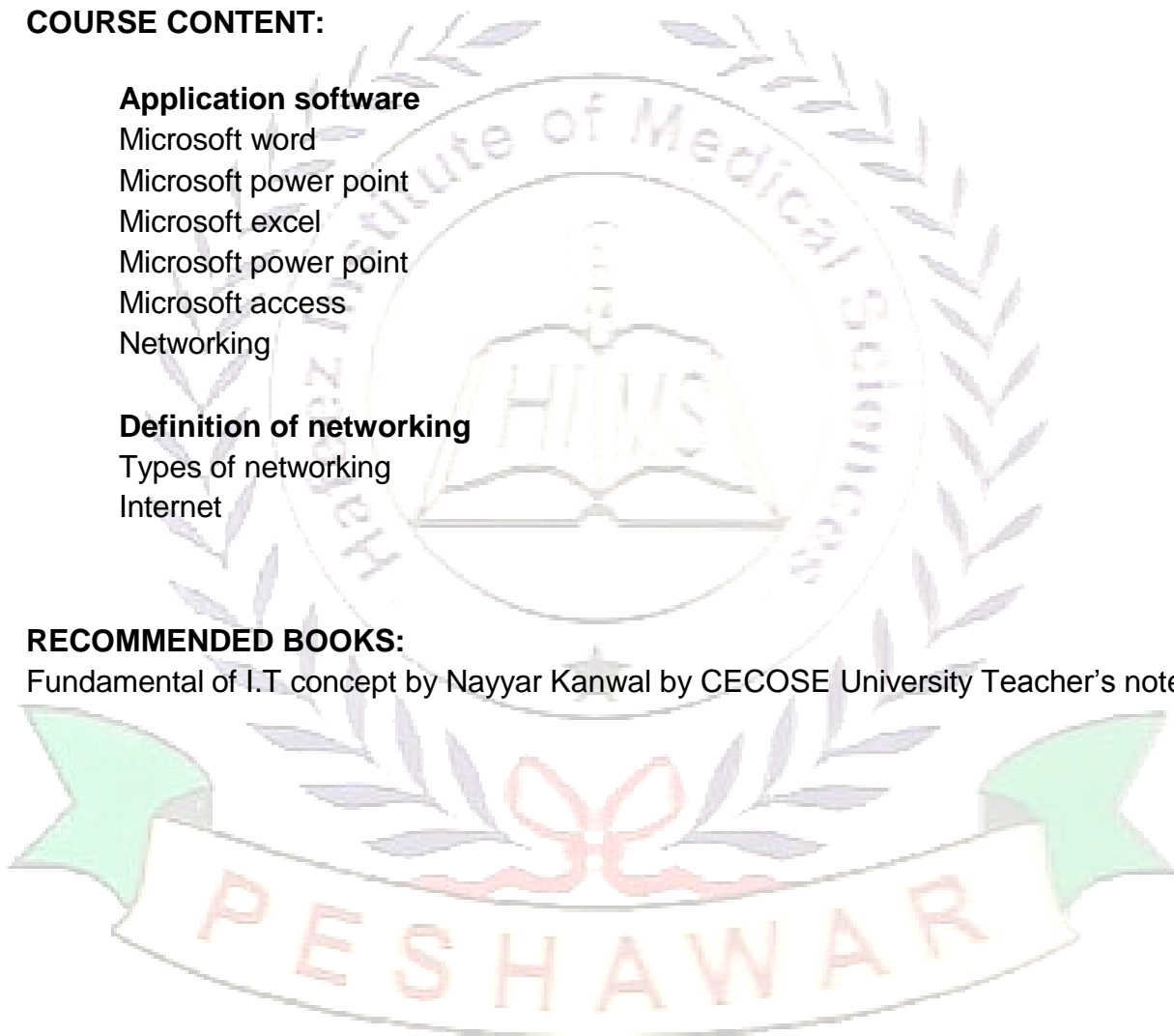
Microsoft word
Microsoft power point
Microsoft excel
Microsoft power point
Microsoft access
Networking

Definition of networking

Types of networking
Internet

RECOMMENDED BOOKS:

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



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3rd SEMESTER

Paper:- 1 Hematology

TOTAL MARKS : 100

CREDIT HOURS 3+1

INTERNAL MARKS: 40

EXTERNAL MARKS: 60

TIME 3 HOURS

Introduction

Phlebotomy, Microscope, Principles Types & uses, Quality Control.

RBC Method

- Hematopoiesis: Stages, Development, Blood formation
- Hemopoiesis: Hemoglobin formation and Estimates
- Morphology of Red Blood Cells:-
Size of Erythrocytes, Shape Erythrocytes, Content of Erythrocytes.
- Component Erythrocyte
Structure of Erythrocytes

WBC Modules

- Development stages:-
- Origin, types, maturation process, morphology.

Platelets Modules

- Origin maturation Cycle
- Quantitative Abnormalities
(Thrombocytopenia)
- Qualitative Abnormalities
(Thrombocytopathia)

Practical (Principle, Method, Interpretation)

Red Blood Cell Count (RBC)

White Blood Cell Count (WBC)

Reticulocyte Counts

Hemoglobin Estimation

Neubaur Chamber

ESR

Platelets Count

Peripheral Blood Smear

DLC

RBC Fragility Test

Hemoglobin Electrophoresis

COURSE TITLE: CLINICAL PATHOLOGY – I

TOTAL MARKS : 100

CREDIT HOURS 3+1

INTERNAL MARKS: 40

EXTERNAL MARKS: 60

TIME 3 HOURS

COURSE OBJECTIVE:

To introduce to the students basic concepts in chemical pathology and acquire skill in practical work to produce a team of Medical Technologists steeped in knowledge of Pathology. To equip Medical Technologists with latest advancement in the field of Pathology.

COURSE CONTENTS:

Chemical pathology: introduction to chemical pathology, measurements in chemistry. Instruments used. Principles of instrumentation: colorimetry, spectrophotometry, flame photometry, electrophoresis, chromatography, pH meter, blood gas analyzer. Equipments used in biochemistry. Preparation of reagents & assay procedures in chemical pathology. Automation in chemistry. Biosafety measures.

Quality control:

Urinalysis: composition and formation of urine, collection for routine and 24 hour samples. Physical, chemical and microscopic examination of urine, Benedict's test for glucose, protein, bile salt and pigments, ketone bodies, fructose, glucose, lactose and galactose, scheme for differentiating reducing substances in urine. Microscopy of urine sediments. Quality control.

RECOMMENDED BOOKS:

Manual of Laboratory medicine AFIP, Third Edition 2005 Publication Armed Forces Institute of Pathology Rawalpindi Pakistan.

District laboratory practice in tropical countries Vol. 1 & 2 Monica Cheesbrough Cambridge University Press Low Price Edition 2000.

Clinical chemistry: principles, methods & interpretation 2nd Edition by Prof. Dr. Abdus Salam Khan Gandapur 2003. Tahir Instruments Ltd Singapura Road Lahore-Pakistan.

De Gruchi's Clinical Hematology in Medical practice 5th Edition 1989 Edited by Frank Firkin, Colin Chesterman David Penington and Bryan Rush Blackwell Scientific Publications Oxford London Edinburgh.

Paper:- 3 EPIDEMIOLOGY-I

TOTAL MARKS : 100

CREDIT HOURS 3+1

INTERNAL MARKS: 40

EXTERNAL MARKS: 60

TIME 3 HOURS

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.

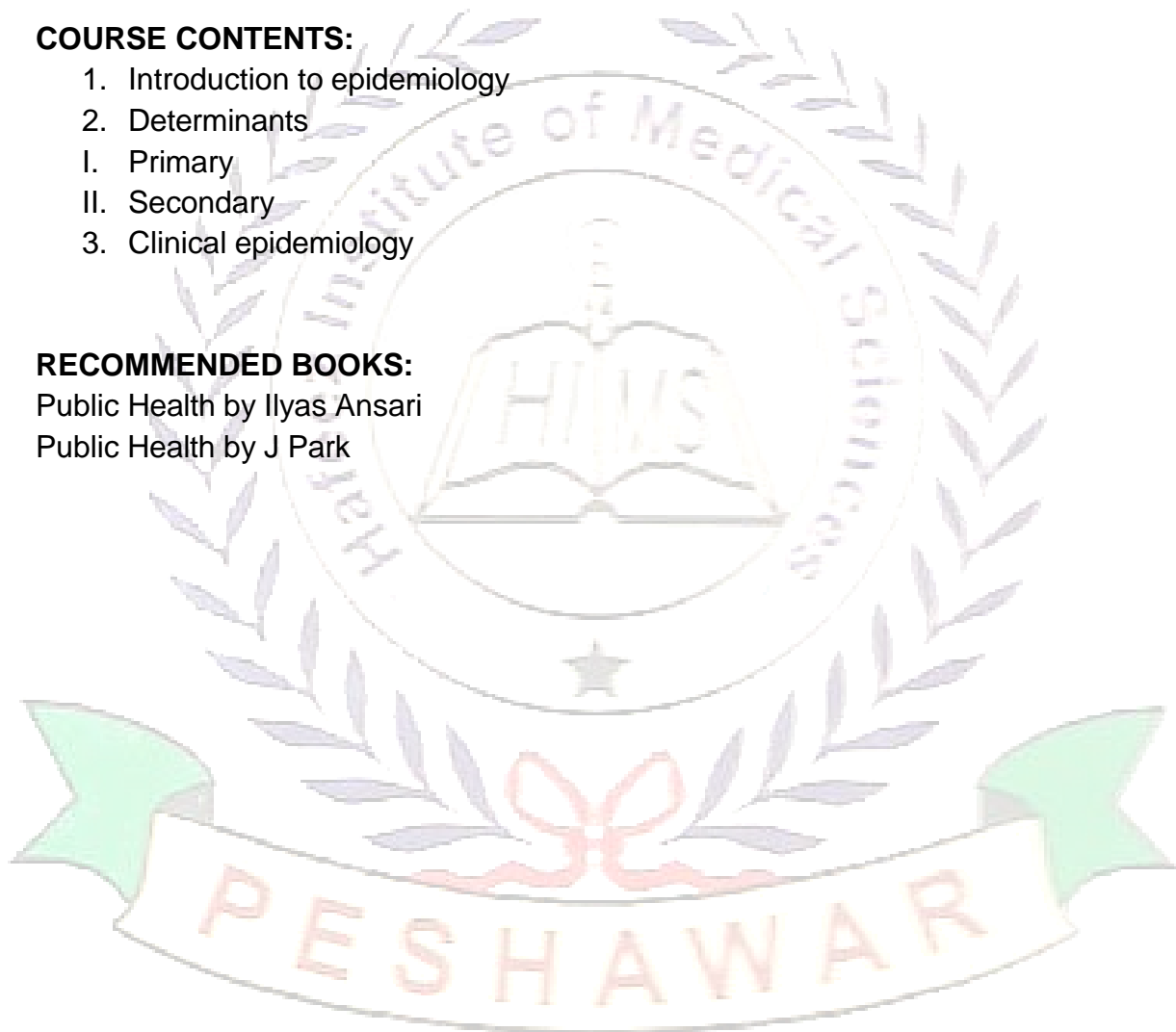
COURSE CONTENTS:

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

RECOMMENDED BOOKS:

Public Health by Ilyas Ansari

Public Health by J Park



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PAPER :- 4

SOCIOLOGY

TOTAL MARKS : 100

CREDIT HOURS 3

INTERNAL MARKS: 40

EXTERNAL MARKS: 60

TIME 3 HOURS

COURSE SUBJECTIVE:

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

COURSE TITLE: BIostatISTICS - I

TOTAL MARKS : 100

CREDIT HOURS 3

INTERNAL MARKS: 40

EXTERNAL MARKS: 60

TIME 3 HOURS

COURSE SUBJECTIVE:

To introduce to the student 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 census, information collection during census, 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 (proportion, ratio, rate)

3. percentiles, quartiles and deciles

RECOMMENDED BOOKS:

Statistical methods for psychology by howell DC in 1992 publisher by Beelmont 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.

Paper:- 1

HEMAMTOLOGY - II

4th Semester

TOTAL MARKS : 100

CREDIT HOURS 3+1

INTERNAL MARKS: 40

EXTERNAL MARKS: 60

TIME 3 HOURS

Introduction to Diseases of Blood:-

1. Anemia

Definition of Anemia
Classification of Anemia
Morphological Classification
S+Etidogical Classification
Signs and Symptoms of Anemia
Diagonosis of Anemia

2. Thalassomis:

Definition
Classification of Thalassomis
Population patterns of Thalassemis
Sign and Symptom Thalssomis
Diagnosis of Thalassomis
Causes of Thalassomis

3. Leukemia

Introduction to Leukemia
Classification and Incidence of Leukemia
Pathogenesis of Leukemia
Clinical feature of Leukemia
Laboratory diagnosis of Leukemia

4. Haemoglobinopathis

General Introduction
Hemoglobin S, F, C, D

5. Practical

Viva

Paper Clinical Pathology – II

TOTAL MARKS : 100

CREDIT HOURS 3+1

INTERNAL MARKS: 40

EXTERNAL MARKS: 60

TIME 3 HOURS

COURSE OBJECTIVES:

To introduce to the students basic concepts in Chemical Pathology and acquire skill in practical work to produce a team of Medical technologists steeped in knowledge of Pathology. To equip Medical Technologists with latest advance in the field of Pathology.

COURSE CONTENTS:

Chemical pathology:

Detailed description, principle, method and interpretation of Renal function tests

Diagnostics methods in diabetes mellitus & Glycosylated hemoglobin jaundice and its types: liver function tests.

Plasma proteins and albumin

Lipids and lipoproteis

Purine and urate metabolism

Clinical enzymology. Iron metabolism

Special urine chemistry. Stool chemistry. Tumour markers. Hormone studies

Chemical Examination of body fluids: CSF Examination, Ascitic fluid examination.

Pleural fluid examination. Exudates and trnsudate. Principle and assay techniques of biochemical tests.

RECOMMENDED BOOKS:

Manual of Laboratory medicines AFIP, third Edition 2005 publication Armed Forces Institute of Pathology Rawalpindi Pakistan.

District laboratory practice in tropical countries Vol. 1 & 2 Monica Cheesbrough Cambridge University Press. Low price Edition 2000

Clinical chemistry: principles, methods & interpretation 2nd Edition by Prof. Dr. Abdus Salam Khan Gandapur 2003. Tahir Instruments Ltd Singapora Lahore-Pakistan

Medical Microbiology and Immunology 6th Edition examination and board review A

LANGE Medical board review Warren Levinson, MD, Ph. D McGraw-Hill Companies Inc

De Gruchi's Clinical Hematology in Medical practice 5th Edition 1989 Ediuted by Frank

Firkin, Colin Chesterman David Penington and Bryan Rush Blackwell Scientific Publications Oxford London Edinrough.

Paper:- 3 BASIC EPIDEMIOLOGY - II

TOTAL MARKS : 100

CREDIT HOURS 3+1

INTERNAL MARKS: 40

EXTERNAL MARKS: 60

TIME 3 HOURS

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.

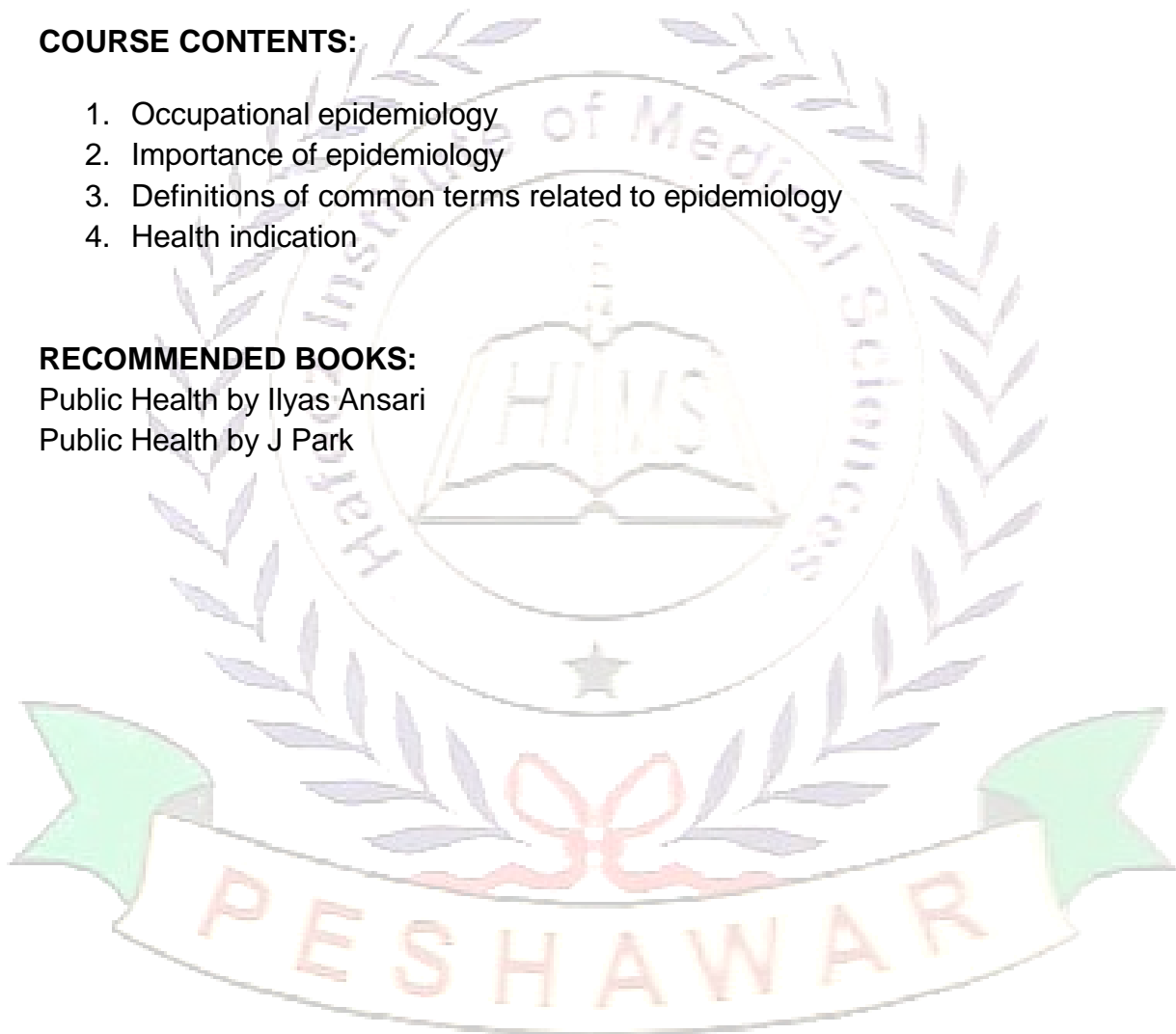
COURSE CONTENTS:

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

RECOMMENDED BOOKS:

Public Health by Ilyas Ansari

Public Health by J Park



Paper Sociology – II

TOTAL MARKS : 100

INTERNAL MARKS: 40

EXTERNAL MARKS: 60

CREDIT HOURS 3

TIME 3 HOURS

COURSE SUBJECTIVE:

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. educational problems

deterioration of education standard in school, college and university

4. health problems

illness behaviour, 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

COURSE TITLE: BIOSTATISTICS - II

TOTAL MARKS : 100

CREDIT HOURS 3

INTERNAL MARKS: 40

EXTERNAL MARKS: 60

TIME 3 HOURS

COURSE SUBJECTIVE:

To introduce to the student 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:

Topic in universities 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
- E. means, Median and Mode
- F. Quartile, decile and percentile

RECOMMENDED BOOKS:

Statistical methods for psychology by howell DC in 1992 publisher by Beelmont 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.

5TH SEMESTER

Paper :-1 Hematology – III (Blood Banking)

TOTAL MARKS : 100

CREDIT HOURS 3+1

INTERNAL MARKS: 40

EXTERNAL MARKS: 60

TIME 3 HOURS

COURSE OBJECTIVE:

To introduce to the students basic concepts in Blood banking and transfusion medicine & acquire skill in practical work. To produce a team of Medical Technologists steeped in knowledge of Blood banking and transfusion medicine. To equip Medical Technologist with latest advance techniques in the field of transfusion medicine. To establish safe blood transfusion practice.

COURSE CONTENTS:

Introduction & history
Importance of blood transfusion
Temperature maintenance, recordkeeping
Donor selection, registration and examination
Venepuncture & phlebotomy, care of donor after phlebotomy
Anticoagulants, blood collection, labeling and storing
Equipments, sera and reagents used in blood bank
Space and staffing
Blood group system & sub-grouping
Cell grouping (forward typing): Slide and tube method
Serum grouping (reverse typing)
Sub groups
Other blood groups systems
Rh typing & Du factor
Antigen-antibody theory: antigen, antibody and immunization
Quality control in blood banking

RECOMMENDED BOOKS:

Manual of Laboratory medicines AFIP, third Edition 2005 Publication
Armed forces institute of Pathology Rawalpindi
District laboratory practice in tropical countries Vol 2 Monica Cheesbrough Cambridge University Press. Low price edition 2000

PAPER :- 2 Microbiology - I

TOTAL MARKS : 100

CREDIT HOURS 3+1

INTERNAL MARKS: 40

EXTERNAL MARKS: 60

TIME 3 HOURS

COURSE OBJECTIVE:

To introduce to the students basic concepts in Microbiology (Bacteriology) and acquire skill in practical work. To produce a team of Medical Technologists steeped in knowledge of Bacteriology. To equip Medical Technologists with latest advance techniques in the field of pathology.

COURSE CONTENTS:

Bacteriology:

General Principles of Bacteriology

Nature of microorganism: structure, genetics and metabolism

Basic features of bacteria

The transmission of bacterial diseases: carriers, routes of transmission

The normal bacterial flora of the body: symbionts, commensals, opportunists

Classification of bacteria: gram Positive cocci. Gram Negative cocci

Gram positive bacilli. Gram negative bacilli

Spirochaetes and serology of syphilis. Mycobacteria. Chlamydia

Rickettsia. Mycoplasma

Characteristics, Pathogenicity, epidemiology and laboratory diagnosis of important Pathogenic bacteria

Procedure for examination of clinical specimens

Collection and transport of specimens

Collection and transport of specimens

Inoculation of different specimens

Choice of media selection

Staining procedures used in Bacteriology

Gram staining: principle, Reagents used for gram staining and procedure

Ziehl Neelsen staining: principle, reagents and procedure

Methylene blue Technique

Albert staining

Quality control in staining

RECOMMENDED BOOKS:

Manual of Laboratory medicines AFIP, third Edition 2005 Publication:

Armed Forces Institute of Pathology Rawalpindi Pakistan

Paper:- 3**Histology – I****TOTAL MARKS : 100****CREDIT HOURS 3+1****INTERNAL MARKS: 40****EXTERNAL MARKS: 60****TIME 3 HOURS****COURSE OBJECTIVE:**

To introduce to the students basic concepts in Histology and acquire skill in practical work. To produce a team of Medical Technologists steeped in knowledge of Pathology. To equip Medical Technologists with latest advance techniques in the field of pathology.

COURSE CONTENTS:**Histology:**

Introduction

Structure of animal cell: Cytoplasmic inclusions and organells. Nucleus

Appearance of nucleus in resting and dividing cells

Four basic tissues of the body

RECOMMENDED BOOKS:

Manual of Laboratory Medicines AFIP, third Edition 2005 Publication

Armed Forces Institute of Pathology, Rawalpindi, Pakistan

District Laboratory Practice in Tropical Countries, Vol 1 & 2 Monica Cheesbrough

Cambridge University Press. Low price edition 2000

Wheater's Functional Histology by Paul R. Wheater 3rd Edition 1995 ELBS with Churchill Livingstone UK

PAPER: - 4

PATHOLOGY-I

TOTAL MARKS: 100

CREDIT HOURS 3+1

INTERNAL MARKS: 40

EXTERNAL MARKS: 60

TIME 3 HOURS

COURSE OBJECTIVES:

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

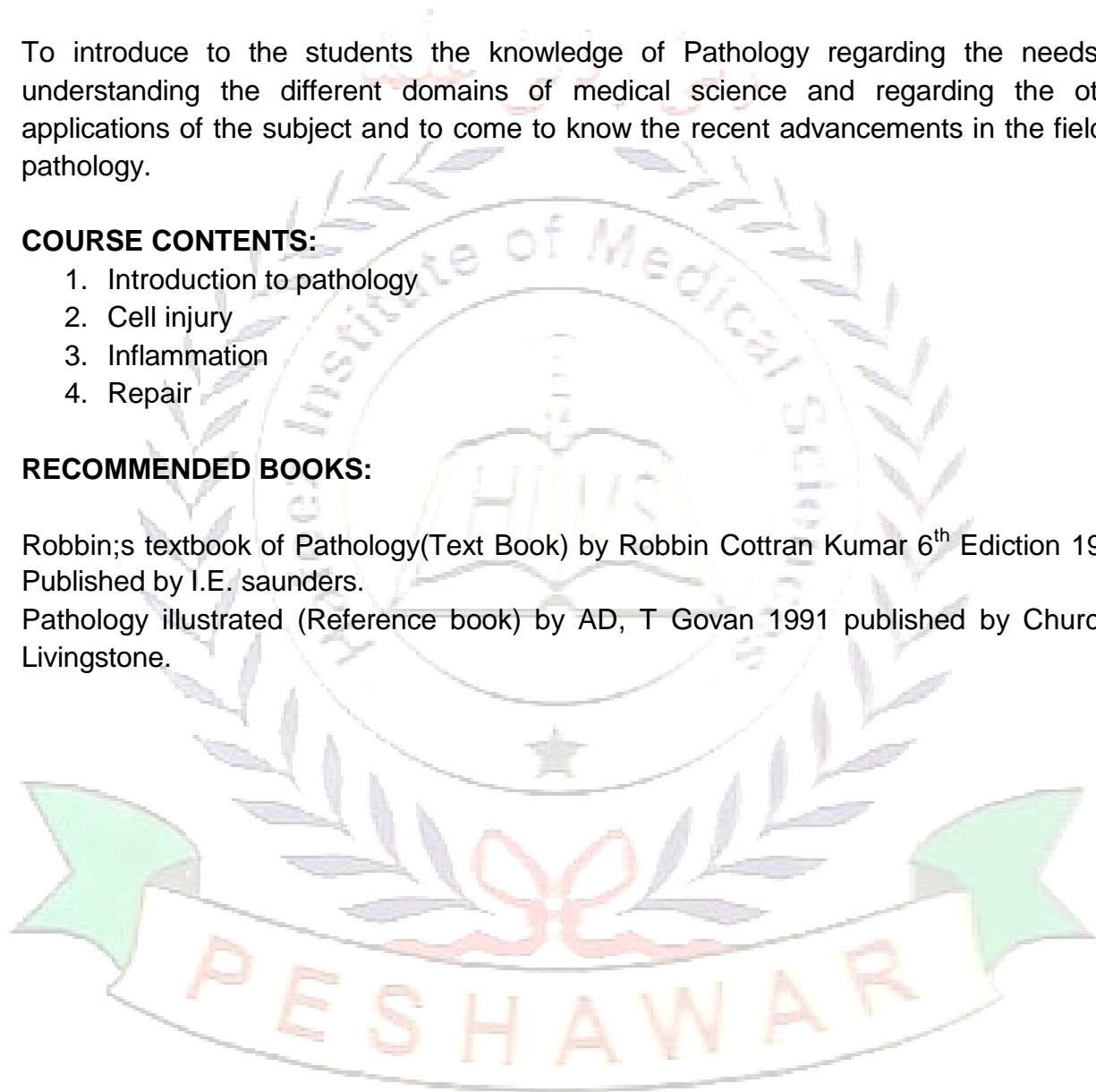
COURSE CONTENTS:

1. Introduction to pathology
2. Cell injury
3. Inflammation
4. Repair

RECOMMENDED BOOKS:

Robbin;s textbook of Pathology(Text Book) by Robbin Cottran Kumar 6th Ediction 1998
Published by I.E. saunders.

Pathology illustrated (Reference book) by AD, T Govan 1991 published by Churchill
Livingstone.



HAFEEZ INSTITUTE OF MEDICAL SCIENCES

6TH SEMESTER

Paper:- 1 Hematology – IV (Primary Homeostasis)

TOTAL MARKS: 100

CREDIT HOURS 3+1

INTERNAL MARKS: 40

EXTERNAL MARKS: 60

TIME 3 HOURS

COURSE OBJECTIVE:

To introduce to the students basic concepts in Blood banking and transfusion medicine & acquire skill in practical work.

Blood coagulation:

Physiology of coagulation intrinsic / Extrinsic pathways beding disorders investigations for diagnosis of bleeding disorders hemophilia. Iddopathic thrombocytopenic purpura DIC. Laboratory diagnosis. BT, CT, PT, APTT, TT, Correction studies.

Introduction to Bone Marrow: general comments, indications, Normal bone marrow smears. Interpretation of bone smears in different diseases. Trepine biopsy: indications and site for biopsy. Automation in hematological techniques. Hematology analysers: principle and method of running these analyzers.

RECOMMENDED BOOKS:

Manual of Laboratory medicines AFIP, third Edition 2005 publication Armed Forces Institute of Pathology Rawalpindi Pakistan.

District laboratory practice in tropical countries Vol. 1 & 2 Monica Cheesbrough Cambridge University Press. Low price Edition 2000

Clinical chemistry: principles, methods & interpretation 2nd Edition by Prof. Dr. Abdus Salam Khan Gandapur 2003. Tahir Instruments Ltd Singapura Lahore-Pakistan

De Gruchi's Clinical Hematology in Medical practice 5th Edition 1989 Ediuted by Frank Firkin, Colin Chesterman David Penington and Bryan Rush Blackwell Scientific Publications Oxford London Edinrough.

PAPER:- 2 Microbiology - II (Bacteriology)

TOTAL MARKS: 100

CREDIT HOURS 3+1

INTERNAL MARKS: 40

EXTERNAL MARKS: 60

TIME 3 HOURS

COURSE OBJECTIVE:

To introduce to the students basic concepts in Microbiology (Bacteriology) and acquire skill in practical work. To produce a team of Medical Technologists steeped in knowledge of Bacteriology. To equip Medical Technologists with latest advance techniques in the field of pathology.

COURSE CONTENTS:

Sterilization and disinfection
Preparation and use of culture media
Common ingredients of culture media. Preparation of media
Common ingredients of culture media. Preparation of media
Types of media: Simple media. Enriched media. Selective media
Differential media
Biochemical tests for bacterial identification
Catalase test. Coagulase test. Oxidase test. Indole test. MSA (mannitol salt agar)
Urease test. Citrate test. Interpretation of biochemical tests
Antibiotic sensitivity testing
Techniques: disc diffusion technique, agar broth dilution techniques
Sensitivity media
Control strains
Inoculation of sensitivity plates
Selection of antibiotic discs
Quality control

RECOMMENDED BOOKS:

Manual of Laboratory medicines AFIP, third Edition 2005 publication:
Armed Forces Institute of Pathology, Rawalpindi, Pakistan
Clinical chemistry: principles, methods & interpretation 2nd Edition by Prof. Dr. Abdus Salam Khan Gandapur 2003. Tahir Instruments limited Singapura Road Lahore-Pakistan. Medical Microbiology and Immunology, 6th Edition 2000 examination and board review. A LANGE medical board review Warren Levinson, MD, Ph. D McGraw-Hill Companies Inc.
De Gruchi's Clinical Hematology in Medical Practice 5th Edition 1989 Edited by Frank Firkin, Colin Chesterman, David Penington and Bryan Rush Blackwell Scientific Publications Oxford London Edinburgh.

PAPER: 3

HISTOLOGY - II

TOTAL MARKS: 100

CREDIT HOURS 3+1

INTERNAL MARKS: 40

EXTERNAL MARKS: 60

TIME 3 HOURS

COURSE OBJECTIVE:

To introduce to the students basic concepts in Histology and acquire skill in practical work. To produce a team of Medical Technologists steeped in knowledge of Pathology. To equip Medical Technologists with latest advance techniques in the field of pathology.

COURSE CONTENTS:

Histology:

The epithelis: classification, type and structure

The connective tissue: classification, types and structure

The muscular tissue: classification, types and structure

The nervous tissue: microscopic structure of nerve cells and nerve fibres

Normal histology of skin, lymph node, liver, spleen, uterus, ovary & bone marrow

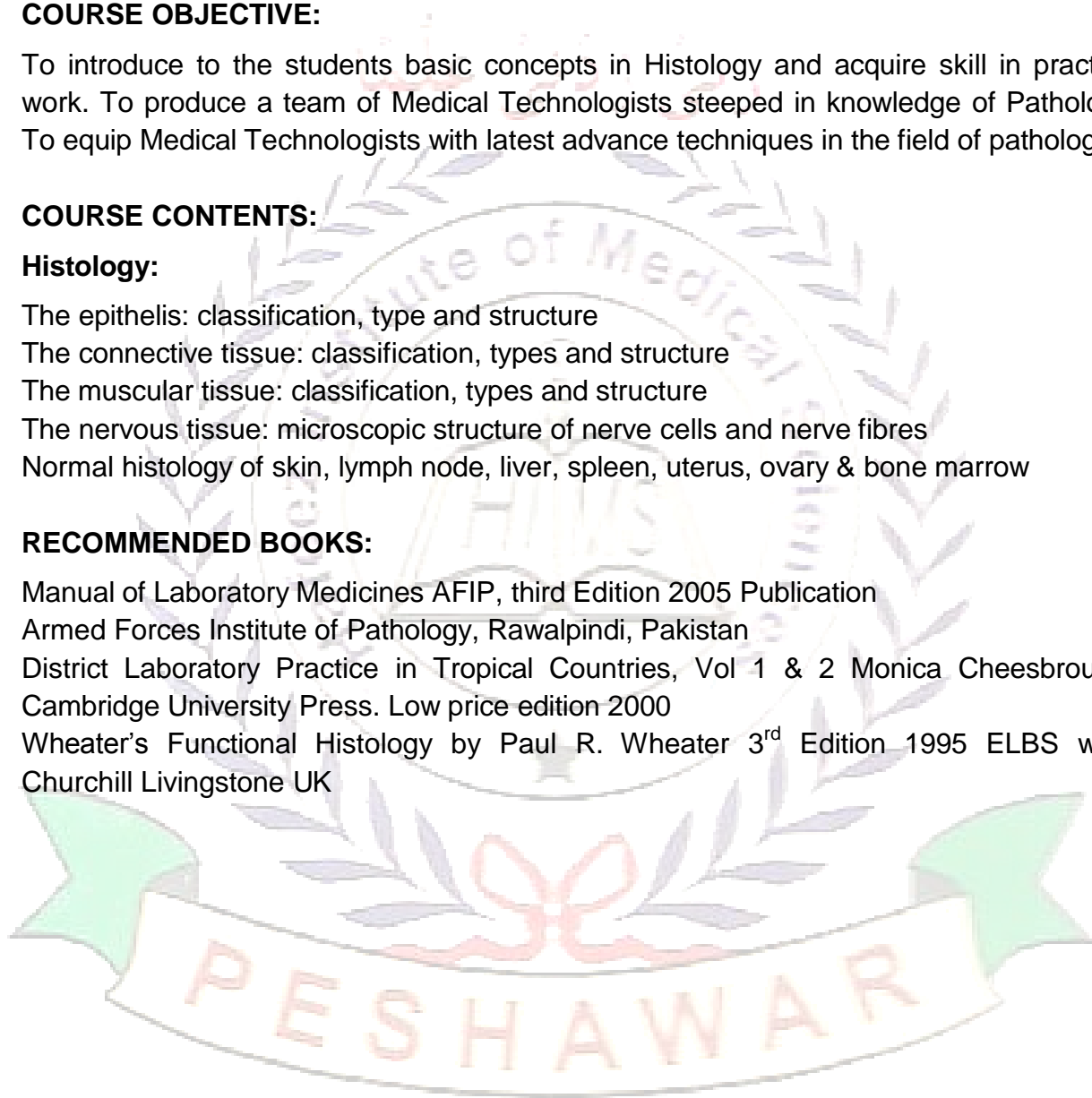
RECOMMENDED BOOKS:

Manual of Laboratory Medicines AFIP, third Edition 2005 Publication

Armed Forces Institute of Pathology, Rawalpindi, Pakistan

District Laboratory Practice in Tropical Countries, Vol 1 & 2 Monica Cheesbrough
Cambridge University Press. Low price edition 2000

Wheater's Functional Histology by Paul R. Wheater 3rd Edition 1995 ELBS with
Churchill Livingstone UK



PAPER: 4

Pathology - II

TOTAL MARKS: 100

CREDIT HOURS 3+1

INTERNAL MARKS: 40

EXTERNAL MARKS: 60

TIME 3 HOURS

COURSE OBJECTIVES:

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

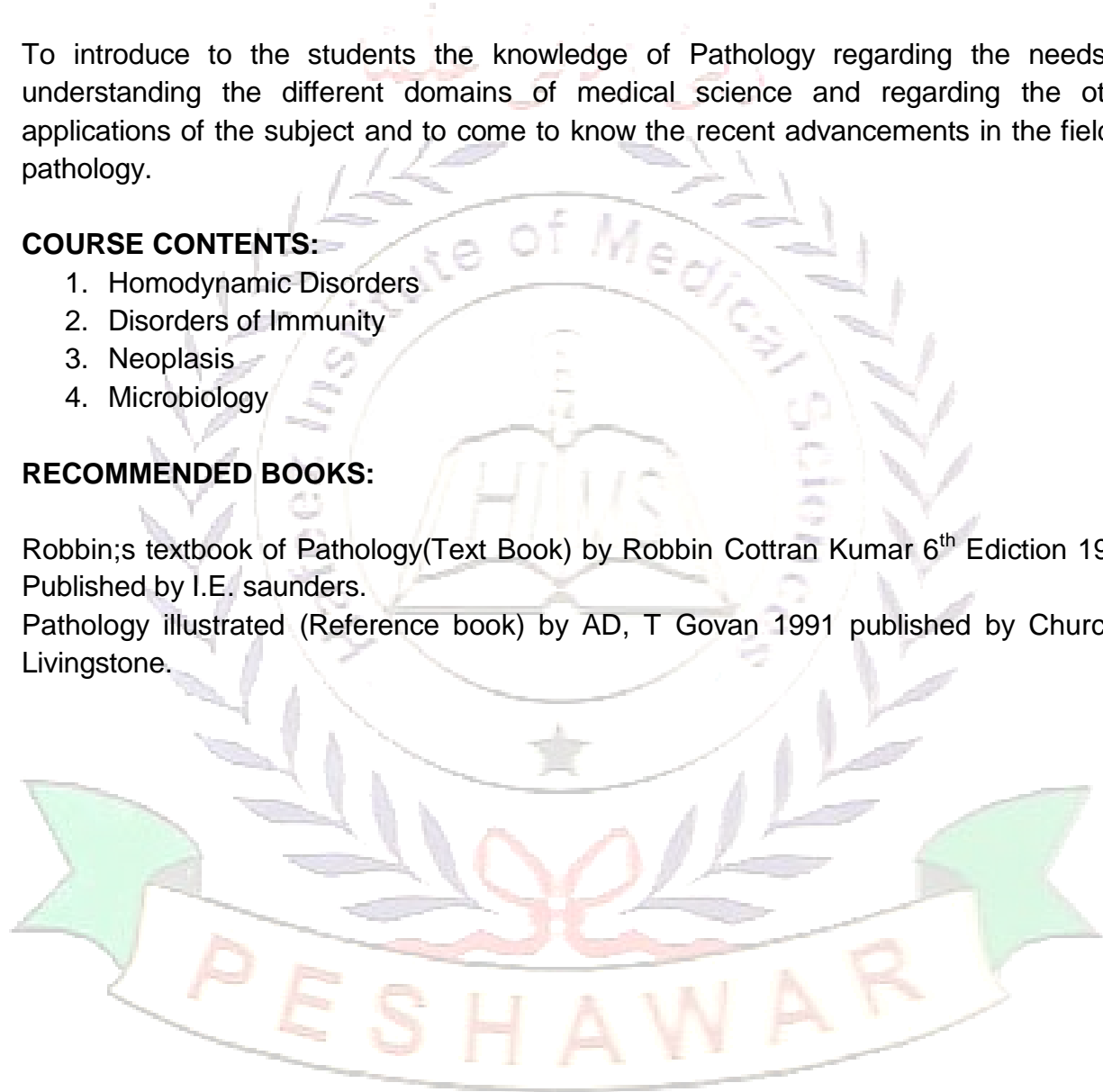
COURSE CONTENTS:

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

RECOMMENDED BOOKS:

Robbin;s textbook of Pathology(Text Book) by Robbin Cottran Kumar 6th Ediction 1998
Published by I.E. saunders.

Pathology illustrated (Reference book) by AD, T Govan 1991 published by Churchill Livingstone.



HAFEEZ INSTITUTE OF MEDICAL SCIENCES

PAPER:- 5

COMMUNICATION SKILLS-II

TOTAL MARKS: 100

CREDIT HOURS 3

INTERNAL MARKS: 40

EXTERNAL MARKS: 60

TIME 3 HOURS

COURSE OBJECTIVE:

To introduce the students about the basic communication skill

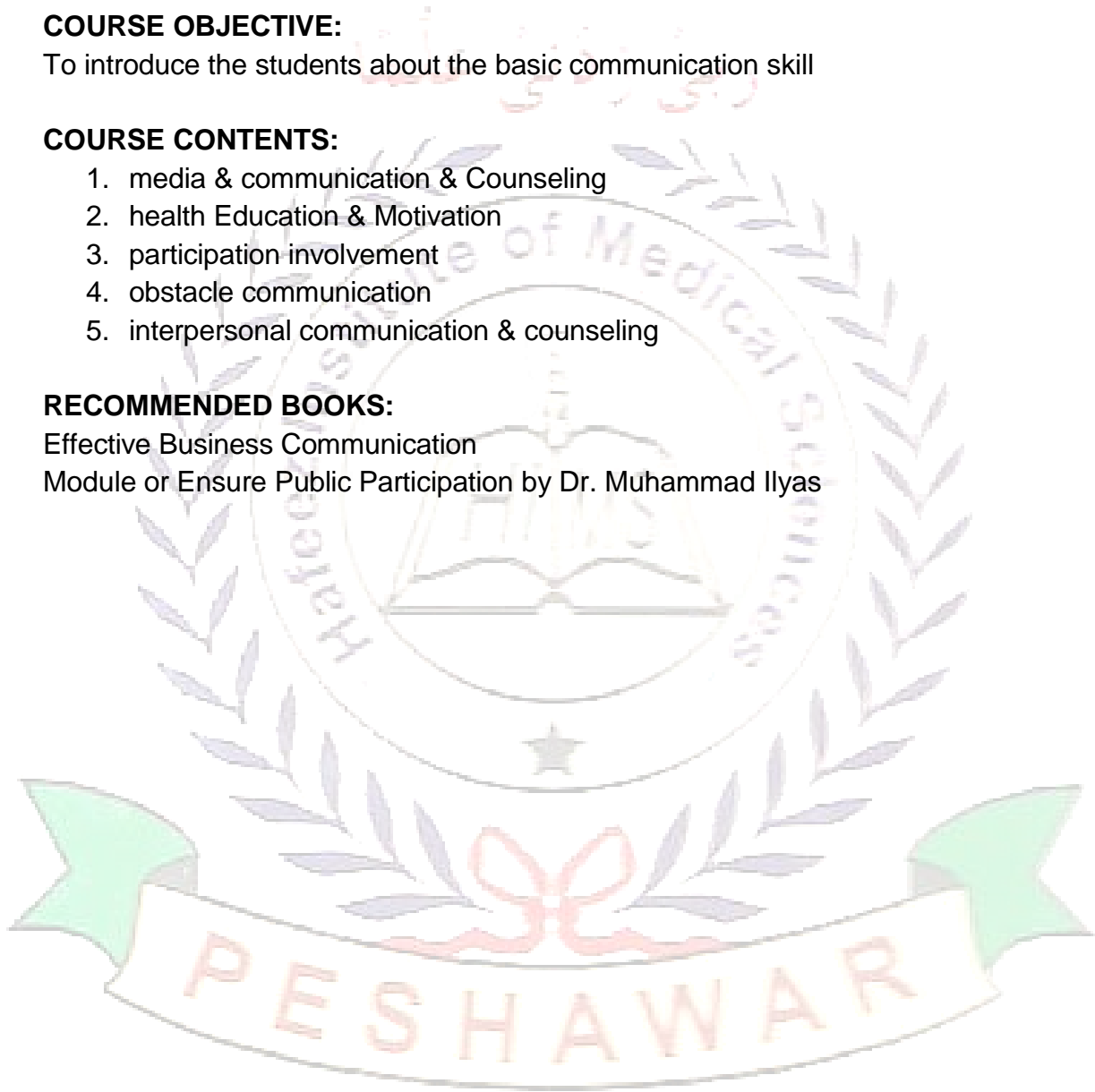
COURSE CONTENTS:

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



HAFEEZ INSTITUTE OF MEDICAL SCIENCES

7TH SEMESTER

PAPER : - 1

MICROBIOLOGY-III (PARASITOLOGY & MYCOLOGY)

TOTAL MARKS: 100

CREDIT HOURS 3+1

INTERNAL MARKS: 40

EXTERNAL MARKS: 60

TIME 3 HOURS

COURSE OBJECTIVE:

To introduce to the students basic concepts in Parasitology & Mycology and acquire skill in practical work. To produce a team of Medical Technologists steeped in knowledge of Pathology. To equip Medical Technologists with latest advance techniques in the field of Pathology.

COURSE CONTENTS:

Parasitology: Introduction and classification of parasites
Characteristics, life cycles and Pathogenicity of common parasites
Protozoa: Types, morphology, characteristics, life cycle & Pathogenicity
Cestodes: Types, morphology, characteristics, life cycle & Pathogenicity
Trematodes and nematodes: Types, morphology, characteristics, life cycle & pathogenicity.

Stool examination: direct and concentration method

Malarial parasites and leishmania: Types, life cycle, Pathogenicity, drugs and laboratory diagnosis

Practical Work

Laboratory Diagnosis Work

Mycology:

basic mycology, introduction and classification

Practical Work

Staining in mycology

Laboratory diagnosis

RECOMMENDED BOOKS:

Manual of Laboratory medicines AFIP, third Edition 2005 publication:

Armed Forces Institute of Pathology, Rawalpindi, Pakistan

District Laboratory Practice in Tropical Countries, Vol 1 & 2 Monica Cheesbrough
Cambridge University Press. Low price edition 2000

Medical Microbiology and Immunology, 6th Edition 2000 examination and board review.

A LANGE medical board review Warren Levinson, MD, Ph. D McGraw-Hill Companies
Inc.

De Gruchi's Clinical Hematology in Medical Practice 5th Edition 1989 Edited by Frank
Firkin, Colin Chesterman, David Penington and Bryan Rush Blackwell Scientific
Publications Oxford London Edinburgh.

HAFEEZ INSTITUTE OF MEDICAL SCIENCES

PAPER: - 2

HISTOPATHOLOGY – I

TOTAL MARKS: 100

CREDIT HOURS 3+1

INTERNAL MARKS: 40

EXTERNAL MARKS: 60

TIME 3 HOURS

COURSE CONTENTS:

To introduce to the students basic concepts in Histopathology and acquire skill in practical work. To produce a team of Medical Technologists steeped in knowledge of Pathology. To equip Medical Technologists with latest advances in techniques in the field of Pathology.

COURSE CONTENTS:

ROUTINE HISTOPATHOLGY TECHNIQUES

Reception and Fixation of Biopsy

Fixatives: Purpose, types and preparation of fixatives

Qualities of good fixative, factors affecting fixation

Gross examination

Processing of tissues: manual and automation

Steps in processing: dehydration, clearing and impregnation

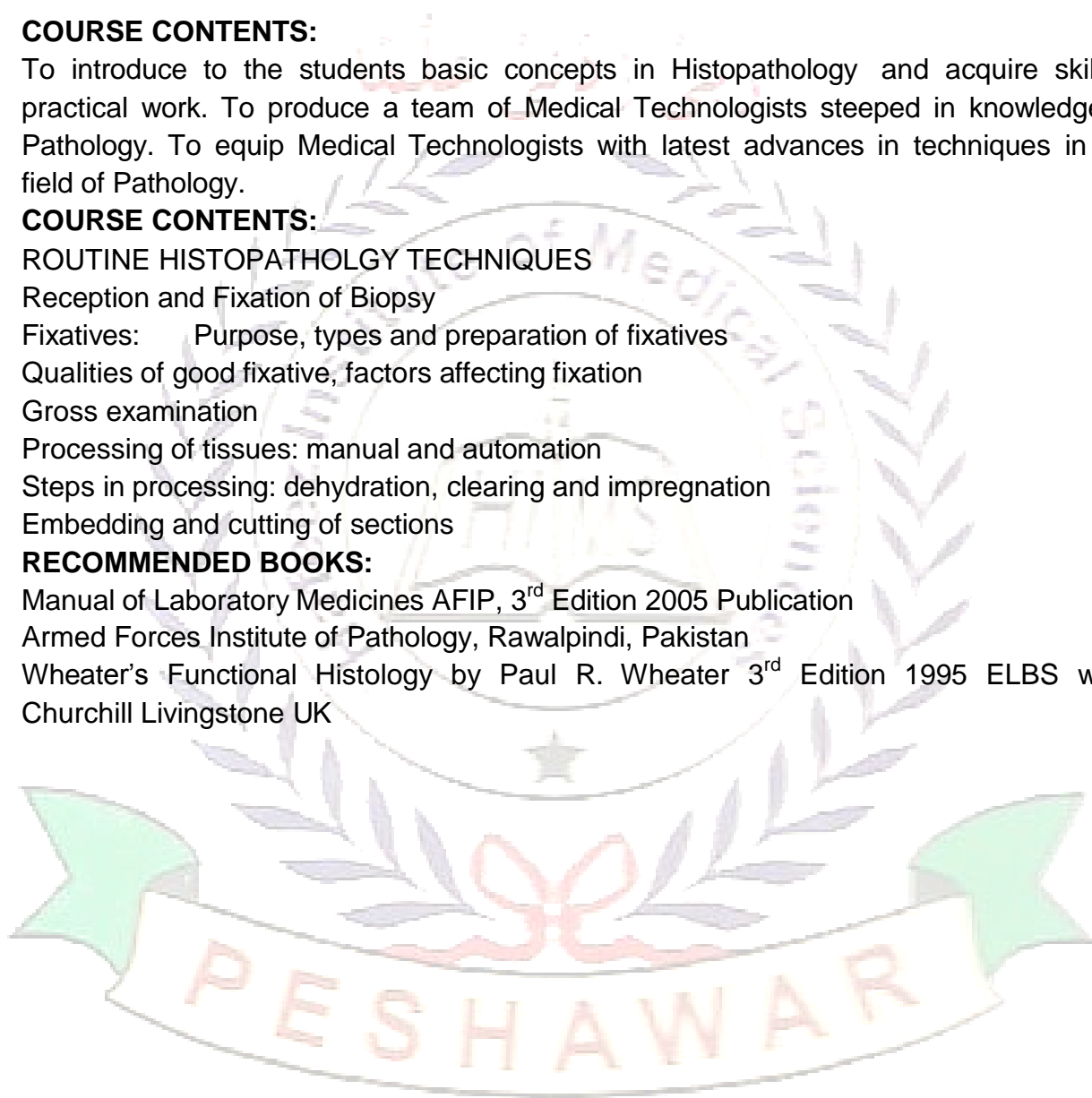
Embedding and cutting of sections

RECOMMENDED BOOKS:

Manual of Laboratory Medicines AFIP, 3rd Edition 2005 Publication

Armed Forces Institute of Pathology, Rawalpindi, Pakistan

Wheater's Functional Histology by Paul R. Wheater 3rd Edition 1995 ELBS with Churchill Livingstone UK



PAPER:- 3

CYTOLOGY – I

TOTAL MARKS: 100

CREDIT HOURS 3+1

INTERNAL MARKS: 40

EXTERNAL MARKS: 60

TIME 3 HOURS

COURSE OBJECTIVE:

To introduce to the students basic concepts in cytology and acquire skill in practical work. To produce a team of Medical Technologists steeped in knowledge of Pathology. To equip Medical Technologists with latest advances in techniques in the field of Pathology.

COURSE CONTENTS:

Cytology: introduction & importance

Cell and structure

Basic principles of exfoliative cytology

Exfoliation, sites from which exfoliated cells can be obtained & methods of obtaining them

Benign and Pathologic processes affecting cells-inflammation, Repair and regeneration.

Hyperplasia and hypertrophy

Collection of cytology specimens. Techniques used in cytology.

Features of atypical and malignant cells

Malignant tumours

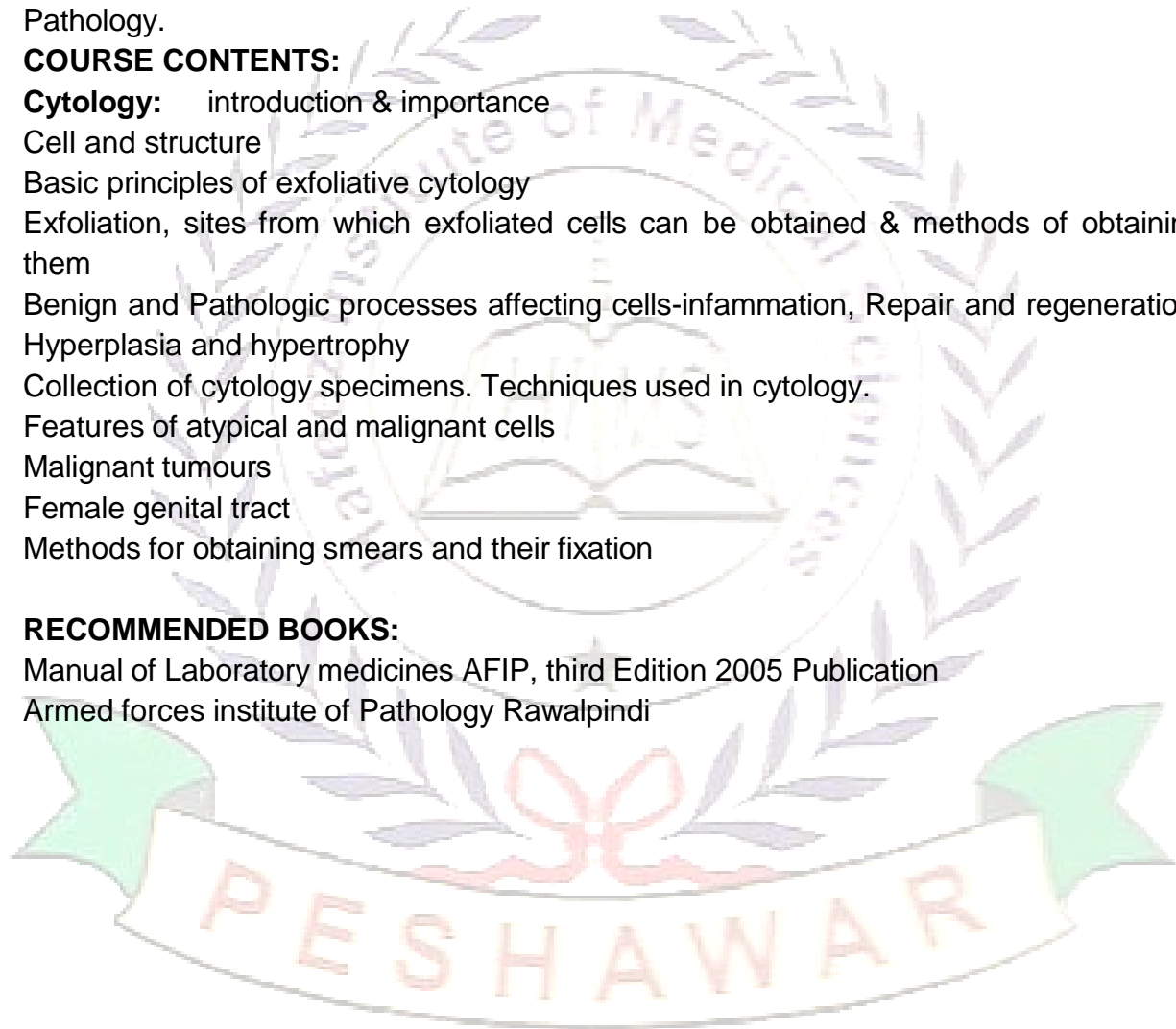
Female genital tract

Methods for obtaining smears and their fixation

RECOMMENDED BOOKS:

Manual of Laboratory medicines AFIP, third Edition 2005 Publication

Armed forces institute of Pathology Rawalpindi



PAPER :- PUBLIC HEALTH

TOTAL MARKS: 100

CREDIT HOURS 3+1

INTERNAL MARKS: 40

EXTERNAL MARKS: 60

TIME 3 HOURS

COURSE OBJECTIVE:

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

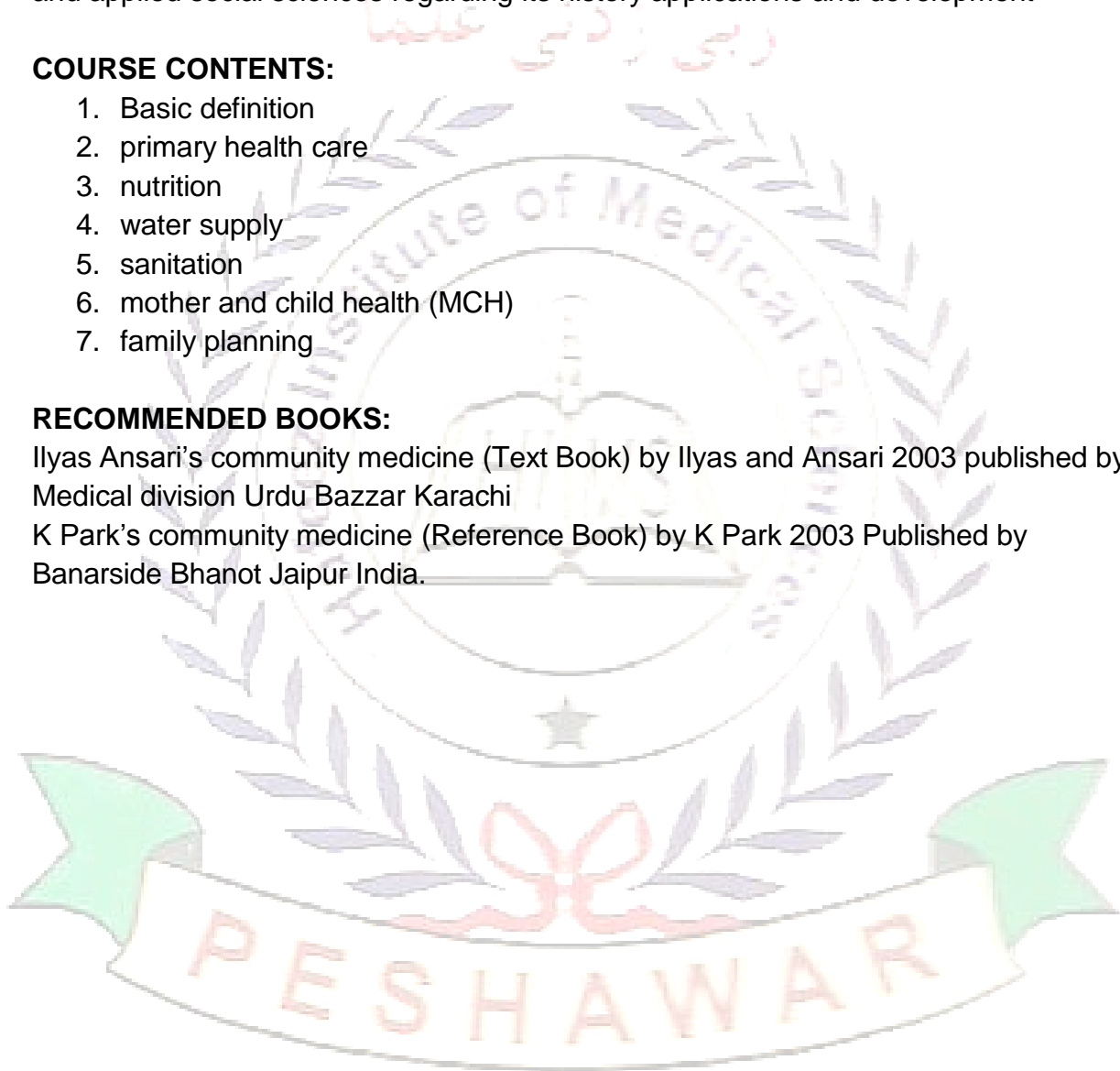
COURSE CONTENTS:

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.



HAFEEZ INSTITUTE OF MEDICAL SCIENCES

PAPER: - 5

RESEARCH METHODOLOGY

TOTAL MARKS: 100

CREDIT HOURS 3+1

INTERNAL MARKS: 40

EXTERNAL MARKS: 60

TIME 3 HOURS

COURSE SUBJECTIVE:

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 in to 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 Dehli, Singapore.

PAPER: - 6 ETHICS AND MANAGEMENT

TOTAL MARKS: 100

CREDIT HOURS 3

INTERNAL MARKS: 40

EXTERNAL MARKS: 60

TIME 3 HOURS

COURSE SUBJECTIVE:

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.

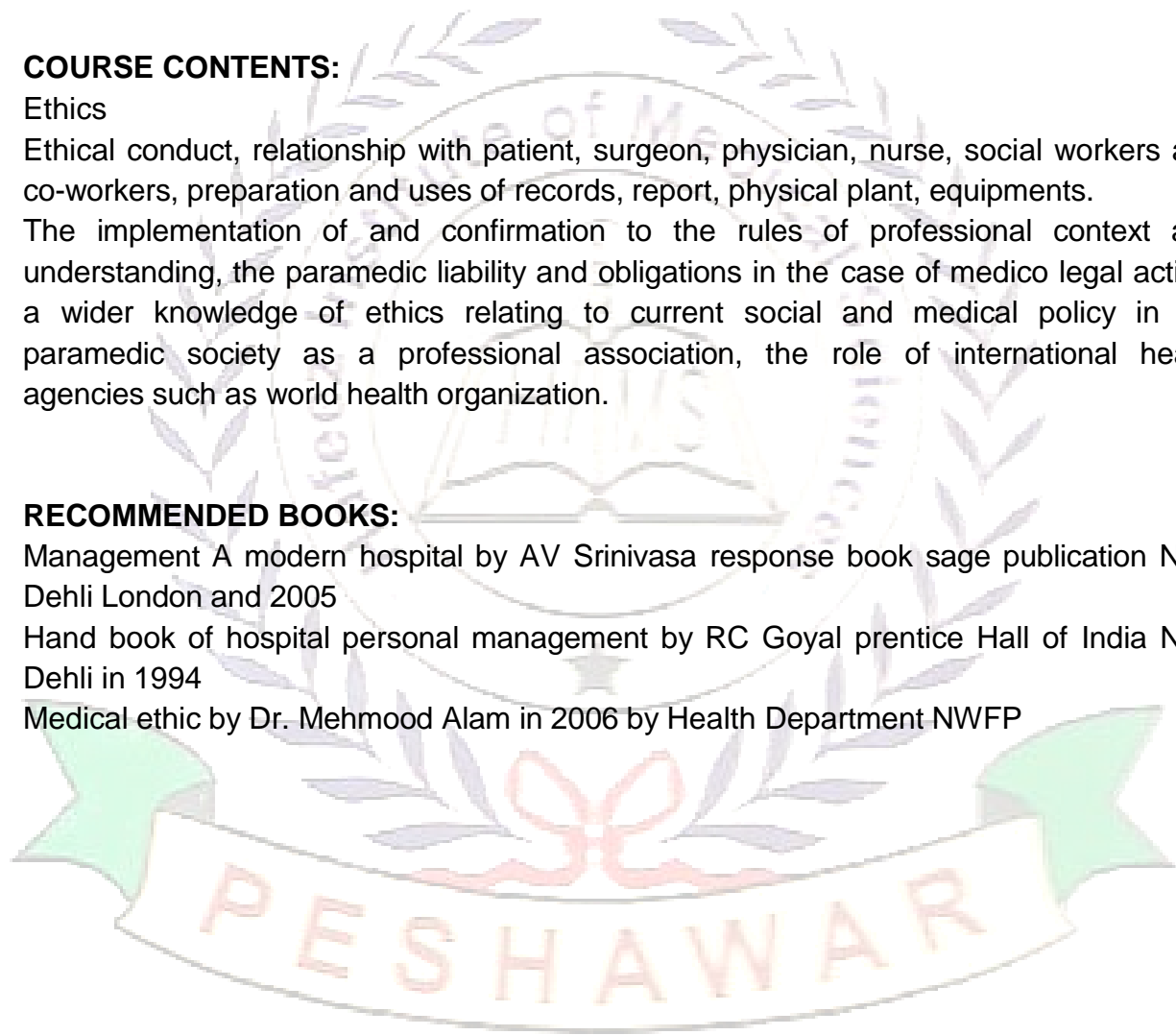
The implementation of and confirmation to the rules of professional context and understanding, the paramedic liability and obligations in the case of medico legal action, a wider knowledge of ethics relating to current social and medical policy in the paramedic society as a professional association, 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 Dehli London and 2005

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

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



8TH SEMESTER

PAPER:- 1 MICROBIOLOGY - IV (VIROLOGY)

TOTAL MARKS: 100

CREDIT HOURS 3+1

INTERNAL MARKS: 40

EXTERNAL MARKS: 60

TIME 3 HOURS

COURSE OBJECTIVE:

To introduce to the students basic concepts in Virology and acquire skill in practical work. To produce a team of Medical Technologists steeped in knowledge of Pathology. To equip Medical Technologists with latest advance techniques in the field of Pathology.

COURSE CONTENTS:

Virology: introduction

Features, structure and classification of viruses

Virus isolation

Storage and transport

Tissue culture

Animal techniques

Viral disease: Its nature and difference from bacterial diseases

Common Pathogenic viruses

Hepatitis viruses: types and detailed study and laboratory diagnosis

HIV: types and detailed description and laboratory diagnosis

Herpes virus

Cytomegalovirus

Dengue haemorrhagic virus

Tumour virus

Specimen collection & isolation of viruses

Microscopy

Light microscopy. Dark field microscopy. Fluorescent microscopy

Electron microscopy

RECOMMENDED BOOKS:

Manual of Laboratory medicines AFIP, third Edition 2005 publication:

Armed Forces Institute of Pathology, Rawalpindi, Pakistan

District Laboratory Practice in Tropical Countries, Vol 1 & 2 Monica Cheesbrough
Cambridge University Press. Low price edition 2000

Medical Microbiology and Immunology, 6th Edition 2000 examination and board review.

A LANGE medical board review Warren Levinson, MD, Ph. D McGraw-Hill Companies
Inc.

De Gruchi's Clinical Hematology in Medical Practice 5th Edition 1989 Edited by Frank
Firkin, Colin Chesterman, David Penington and Bryan Rush Blackwell Scientific
Publications Oxford London Edinburgh.

HAFEEZ INSTITUTE OF MEDICAL SCIENCES

PAPER :- 2

HISTOPATHOLOGY – II

TOTAL MARKS: 100

CREDIT HOURS 3+1

INTERNAL MARKS: 40

EXTERNAL MARKS: 60

TIME 3 HOURS

COURSE CONTENTS:

To introduce to the students basic concepts in Histopathology and acquire skill in practical work. To produce a team of Medical Technologists steeped in knowledge of Pathology. To equip Medical Technologists with latest advances in techniques in the field of Pathology.

COURSE CONTENTS:

Microtome & tissue sectioning techniques

Floating water bath

Decalcification of bone

Knife sharpener

H and E staining

FROZEN SECTIONS: Procedure and importance, cryostat

SPECIAL STAINS IN HISTOPATHOLOGY

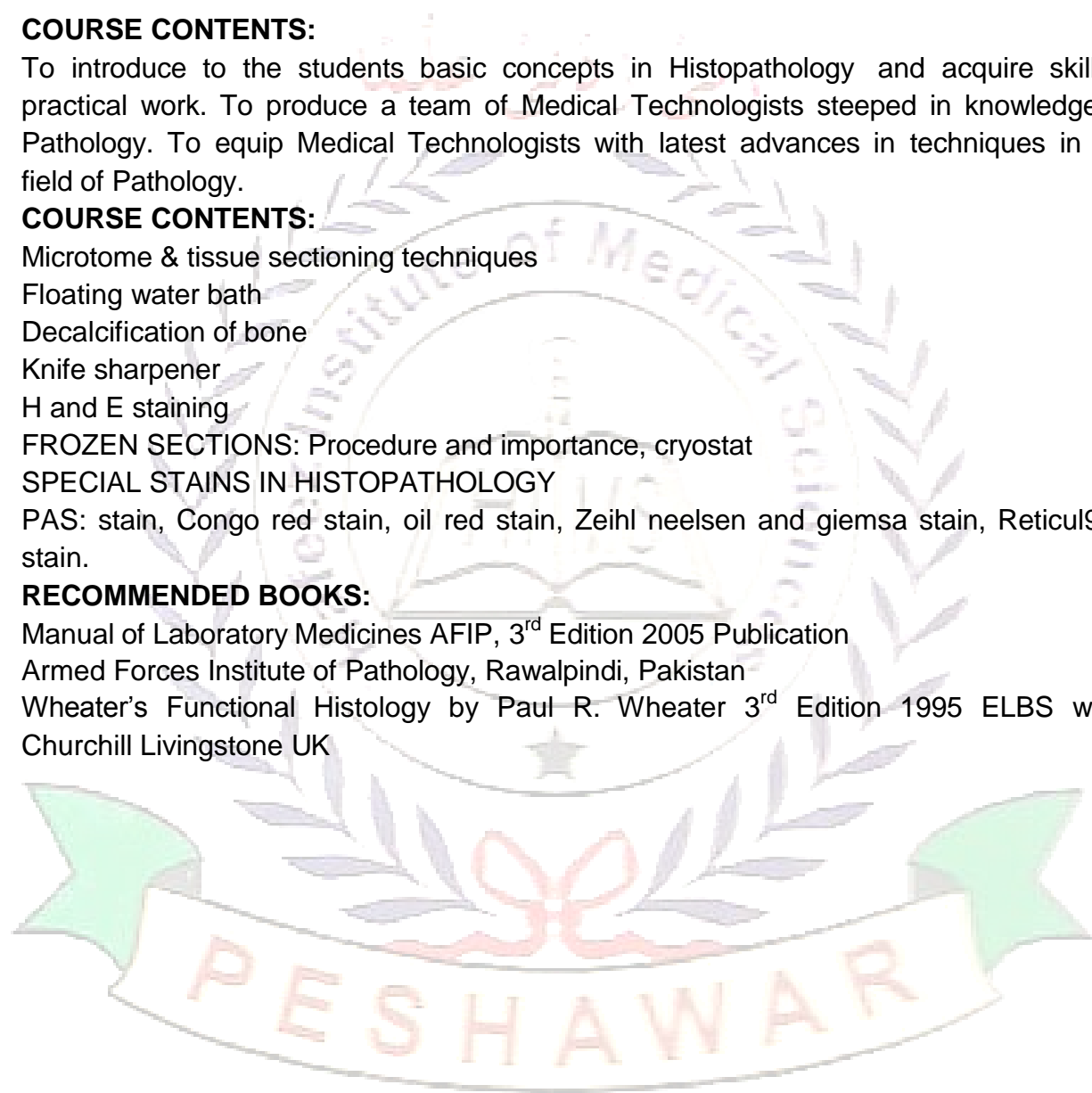
PAS: stain, Congo red stain, oil red stain, Zeihl neelsen and giemsa stain, Reticul9in stain.

RECOMMENDED BOOKS:

Manual of Laboratory Medicines AFIP, 3rd Edition 2005 Publication

Armed Forces Institute of Pathology, Rawalpindi, Pakistan

Wheater's Functional Histology by Paul R. Wheater 3rd Edition 1995 ELBS with Churchill Livingstone UK



HAFEEZ INSTITUTE OF MEDICAL SCIENCES

PAPER:3

CYTOLOGY – II

TOTAL MARKS: 100

CREDIT HOURS 3+1

INTERNAL MARKS: 40

EXTERNAL MARKS: 60

TIME 3 HOURS

COURSE OBJECTIVE:

To introduce to the students basic concepts in cytology and acquire skill in practical work. To produce a team of Medical Technologists steeped in knowledge of Pathology. To equip Medical Technologists with latest advances in techniques in the field of Pathology.

COURSE CONTENTS:

Normal cells of female genital tract

Abnormal cells other than malignant cells

Diagnosis of carcinoma of female genital tract

Pap smear

Respiratory tract:

Methods for obtaining smears and their fixation

Normal cells of respiratory tract

Abnormal cells other than malignant cells

Diagnosis of cancer of respiratory tract

FNA: significance, advantages and disadvantages of FNA

Cytology of body fluids: Ascitic, Pleural, CSF, semen, synovial & pericardial fluid

RECOMMENDED BOOKS:

Manual of Laboratory medicines AFIP, third Edition 2005 Publication

Armed forces institute of Pathology Rawalpindi

PAPER:- 4 PUBLIC HEALTH

TOTAL MARKS: 100

CREDIT HOURS 3+1

INTERNAL MARKS: 40

EXTERNAL MARKS: 60

TIME 3 HOURS

COURSE OBJECTIVE:

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

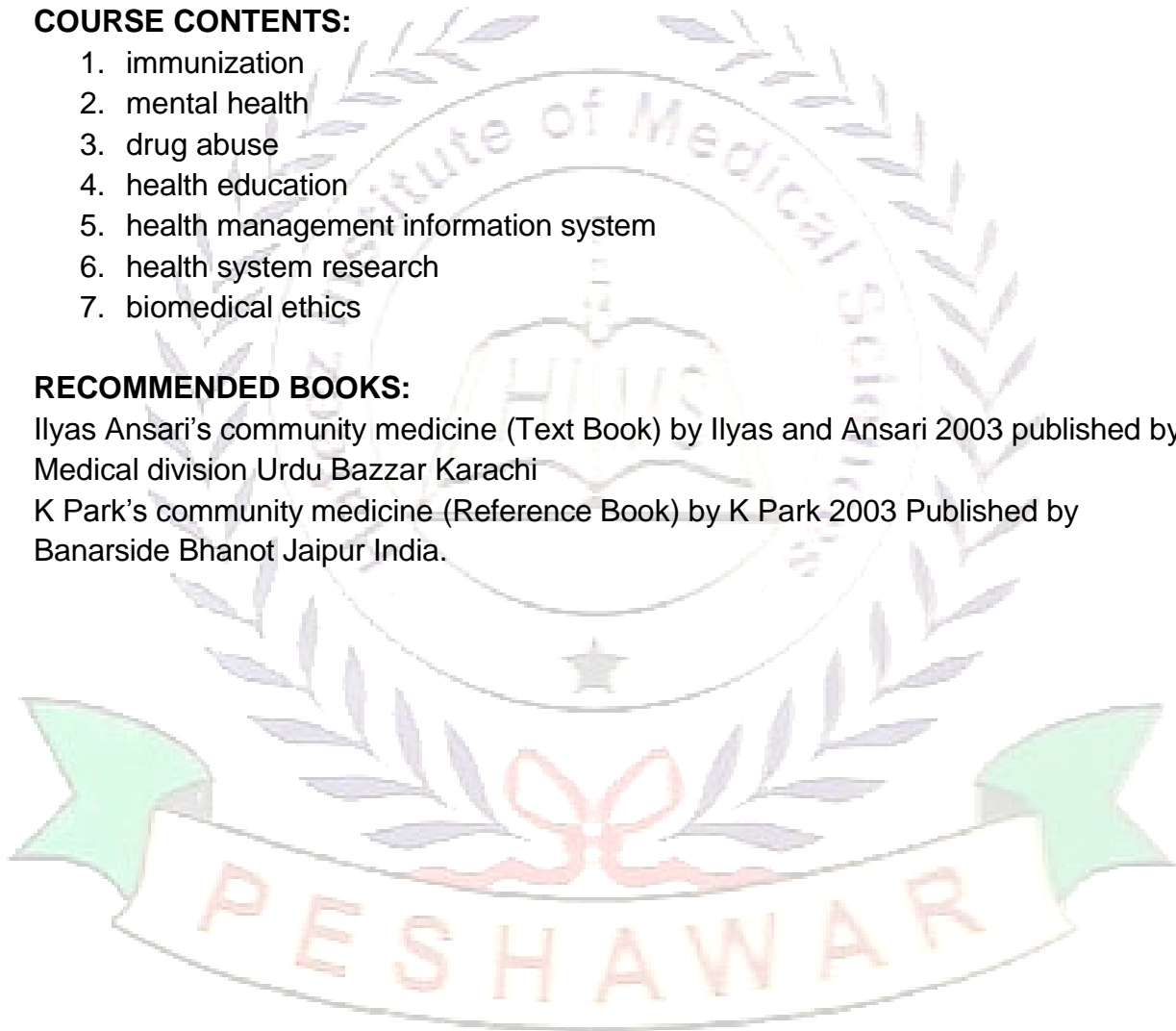
COURSE CONTENTS:

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.



HAFEEZ INSTITUTE OF MEDICAL SCIENCES

PAPER:- 5

RESEARCH METHODOLOGY

TOTAL MARKS: 100

CREDIT HOURS 3

INTERNAL MARKS: 40

EXTERNAL MARKS: 60

TIME 3 HOURS

COURSE SUBJECTIVE:

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.

(C)) HYPOTHESIS TESTING

(D) SAMPLING

Probability and non-probability and their sampling, advantages and disadvantages of probability and non-probability sampling, bias in sampling.

(E) RESEARCH PROTOCOLE

(F) DATA COLLECTION

Purpose and techniques, why do we collect data, data collection procedure, step and data collection survey questionnaire, starting questionnaire.

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 Dehli, Singapore.

PAPER:- 6

ETHICS AND MANAGEMENT

TOTAL MARKS: 100

CREDIT HOURS: 3

INTERNAL MARKS: 40

EXTERNAL MARKS: 60

TIME 3 HOURS

COURSE SUBJECTIVE:

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, continuous quality control.

RECOMMENDED BOOKS:

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

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

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