SYLLABUS

for Courses affiliated to the Kerala University of Health Sciences

Thrissur 680596

MASTER OF SCIENCE IN

MLT-PATHOLOGY

Course Code 290

(2024-2025 Academic year onwards)

2.COURSE CONTENT

2.1 Title of course:

Name of the course shall be the**''Master of Science in Medical Laboratory Technology-Pathology'' (MSc MLT-Pathology)**

2.2 Objectives of course

Post Graduate programme in Medical Laboratory Technology (Biochemistry, Microbiology and Pathology) gives opportunity for specialized study in the field ofMedical Laboratory Technology for B.Sc (MLT) graduates.Candidates who successfully complete MSc(MLT) course shall be able to

1. Learn theories and principles of Medical Laboratory science and Technology
2. Demonstrate the ability to plan and effect the change in laboratory practice and health care delivery system.
3. Setup and manage specialized clinical laboratories and to deliver better health care System to the public.
4. Practiceas Specialized Technologists in the concerned subject.
5. Function as effective educators in the field of Medical Laboratory Technology
6. Conduct in depend entre search works and utilize the research findings in Laboratory practice and education.
7. Evaluate various educational programmes in Medical Laboratory Technology.
8. Demonstrate interest in continued learning and research for personal and professional advancement.
9. Establish collaborative relationship with Clinicians and members of otherdisciplines.

2.3 Medium of instruction:

Medium of instruction shall be English

2.4 Course outline

The course of study ensures student's knowledge and skills in several major categorical areas of medical laboratory technology. The post graduate degree in medical laboratory technology provides specialised skills to practicing laboratory professionals in health administration, leadership, quality assurance, managementsand health informatics. It is a two year professional post graduate Degree course comprising four papers in first year and two papers and dissertation in second year. Total course duration is 4500 hours including 200 hours of training in reputed external Hospitals/institutes. There will be three internal examinations conducted by the Institutes/Colleges and one public examination at the end of each academic year**.**

2.5 Duration

Course of study including the dissertation work shall be for a period of two year. Thestudents shall do One year internship/service after successful completion of the course as per theGovt.norms.

Course of study including dissertation work shall be for a period of two years.

Week/Year	-	52 weeks
Leave	-	20 days.
Examination	-	2 weeks
Total weeks available	-	47 weeks
Total working hours/week	-	48 hours
Total working hours/year,	-	48 hrsx 47weeks = 2250 hours/year
Total hours for two years	-	4500 hours

2.6 Subjects

Paper-I	Haematology
Paper-II	Histopathology

Paper-III	Clinical Patholgy &Cytogenetics
PaperIV	Cytology
Paper-V	Blood banking & Immuno pathology
Paper - VI	Laboratory Organization, QC,and Recent Advances in Pathology
	Dissertation

The concept of health care counseling shall be incorporated in all relevant areas.

2.7 Total number of hours

Week/Year	-	52weeks
Leave	-	20 days.
Examination	-	2 weeks
Totalweeks available	-	47weeks
Totalworkinghours/week	-	48hours
Totalworkinghours/year,	-	48 hrs x47 weeks = 2250 hours/year
Totalhoursfortwoyears	-	4500 hours

2.8 Branches if any with definition:

There will be no further specialization in MSc MLT-Pathology

2.9 Teaching learning methods:

During a period of two years, intensive theoretical and practical training will be imparted to thecandidatesas follows.

Cognitive

1 Attending didactic lectures:one lecture (followed by discussion).

2 Seminar: one seminar (followed by discussion) of 1h duration weekly.

3 Journal club: for 1h (including discussion) weekly.

☆

4 Case presentation

5 Tutorials/group discussions/review clubs.

Presentation skill

1 Seminars: MSc trainees present seminars under th emoderation of a Faculty Member. Each trainee presents a minimum of 6 seminars,

2 Journal club: MSc trainees presentatleast6journal clubs in two years.

Training/visit

1. Clinical Laboratory Practices/duty in the concerned sub specialties of the Hospital/college.
2. Training / visit in concerned sub specialty Laboratories of national or international reputed Institutions in India

Qualification of teacher

i. Professor in MLT- M Sc. MLT with PhD in the concerned subject having 8 yearsof full time teaching experiencein the subject after the acquisition of M.Sc (MLT)degree,

OR

M.Sc. MLT with 10 years of teaching experience in the concerned subject after the acquisition of MSc (MLT).

ii. Associate Professor in MLT-M.Sc (MLT) in the concerned subject (Biochemistry,Microbiology, Pathology) having 8 years of full time teaching experience in the subject after the acquisition of M.Sc (MLT).

iii. Assistant Professor-M.Sc (MLT)in the concerned subject (Biochemistry/Microbiology /Pathology).

2.10 Content of each subject in each year

MSc Medical Laboratory Technology (Pathology)

☆

(**Detailed Syllabus)**

PART-I (First year)

Paper-I HEMATOLOGY (Theory and Practicals)

Haemopoiesis

Collection, handling of blood, preparation of various reagents used in hematology

Anaemia and other disorders of Erythropoiesis Disorders of

Leucopoiesis

Haemostasis & its investigations

Investigations of Thrombotic tendency

Laboratory control of Anticoagulant ,

Thrombotic and platelet herapy

Collection and handling of Blood

All Routine and special Haematological

Investigations Blood and Bone Marrow preparations

Leucoproliferative disorders with special references to Leukaemias

Automation in Haemtology

Cytochemistry of Leukaemic cells Amniocentesis

Bone marrow transplantation

Application of different Microscopes

Preparations of various Reagents and Stains used in Haematology

Immuno pheno typing

Flow cytometry

Molecular techniques in Haematology

Automation in haematology

Quality control

Biomedical waste management in hematology

Paper-II-HISTOPATHOLOGY

(Theory and Practicals)

Organisation of Histology Laboratory

Histological equipment

Reception and recording of tissue specimen

☆

Tissue processing and Microtomy including frozen

Theory of staining

Preparation and quality control of all routine and special stains used in Histopathology

All staining techniques and their interpretation Immuno histo chemistry

Molecular markers of malignant neoplasms

Moleculart echniques

Immuno fluorescent techniques Enzyme histo chemistry

Museum techniques

Autopsy Techniques

Automationin Histological Techniques

Tissue micro array

Molecular markers of malignant neoplasms.

Quality control

Decalcification

Biomedical waste management in histopathology

Paper-III-CLINICAL PATHOLOGY AND CYTO GENETICS

(Theory and Practicals)

Collection, transport, preservation and processing of various clinical specimens

Examination of Urine - Routine and Special tests

Examination of Stool - Routine and Special testsExamination of Sputum - Routine and Special tests

Semen examination - Routine and Special tests

ExaminationofCSF- Routineand Specialtests

Examination of various body fluids-Pleural Fluid, Pericardial Fluid, Synovial Fluid, Ascetic Fluid

Various methods of detecting HCG levels

Structure and molecular organization of Chromosomes

Identification of human chromosomes

Karyotyping

- Direct chromosome preparation of Bone Marrow cells

☆

- Culture techniues

Banding techniques

Sex Chromatin bodies

Cancer Cytogenetics

INTERNATIONAL SYSTEM OF CYTOGENETIC NOMENCLATURE (ISCN)

Auto radio graphyof human chromosomes

Chromosome Identification by image analysis and

Quantitative cytochemistry Clinical Manifestations of chromosome disorders

Paper-IV-CYTOLOGY

(Theory and Practical)

Morphology and Physiology of cell

Cytology of

- Female genital Tract
- Urinary Tract
- Gastrointestinal Tract
- Respiratory Tract
- Effusions
- Miscellaneous Fluids

Collection,Preservation,Fixation and Processing of various Cytological Specimen Preparation and Quality control of various stains and reagents used in cytology

All routine and special Staining techniques in cytology

FNAC

Immuno cyto chemistry Flow cytometry Automation in Cytology

cytospin centrifuge

Biomedical waste management in cytology

PART-II (Second year)

Paper-V- BLOOD BANKING& IMMUNO PATHOLOGY

(Theory and Practical)

☆

- Blood banking
- Basic principles of Immuno haemeatology
- ABO Blood group systems
- Rh Blood group systems
- Other blood group systems
- All materials and reagents used for different investigations in blood bank
- Blood grouping techniques
- Antibody screening and Identification
- Compatibility testing
- Blood collection and processing
- Preservation and storage of blood
- Blood component preparation and therapy
- Screening tests
- Transfusion reactions
- HDN
- NAT test
- Quality assurance in Transfusion Service Special investigations in Transfusion technology

Immunopathology

- History of Immunology and Immunopathology
- Review of Basic Immunology
- Transplantation Immunology
- Immune response to infectious diseases
- Vaccines
- Immuno deficiencies- B cell, T cell , Combined, Phagocytic &Compliment Cancer and the immune system
- Hyper sensitivity
- Auto immune diseases
- Clinical Laboratory methods for the detection of antigens and Antibodies Clinical Laboratory methods for the detection of cellular immunity
- Histocompatibility testing
- Molecular genetic techniques for clinical analysis of the immune systems

☆

- Experimental animal methods
- Raising antibodies in laboratory animals
- Recombinant DNA Technology
- Gene trans ferto Mammalian cells
- Separation serum protein by different electrophoresis Separation of different cells in the blood
- Immuno phenotyping

PAPER- VI - LABORATORY ORGANIZATION, QUALITY CONTROL AND RECENT ADVANCES IN PATHOLOGY

(Theory and Practical)

Different levels of laboratories

Basic requirements and functions of a laboratory

Purchasing of equipment and chemicals

Open and closed system analyzers

National and international accreditation of laboratories

Laboratory safety

Quality control, External and internal quality controls, quality control materials, filing of QC charts

Artificial Intelligence (AI) and Machine Learning (ML)

Principles of Instrumentation

Automation in Hematology, Cell counters, coagulation analyzers, ESR by automation,

Blood collection and delivery to different laboratories in a hospital

Automation in Histopathology – New generation microtomes, tissue processing, paraffin,Embedding, Station, tissue -tek systems, image analysis, stainers and cover slippers.

Use of micro wave oven

Automation and recent advances in different disciplines of pathology new generation equipment used in blood banks

Laboratory statistics

Clinical Laboratory Informatics

All aspects Laboratory management including financial management

CLSI standards

Artificial Intelligence (AI) and Machine Learning (ML)

Genomic Sequencing,Lab-on-a-Chip Technology,Next-Generation Sequencing (NGS) Laboratory

☆

ethics and universal safety precuations

Biomedical waste managements

Books Recommended:

1. Theory and practice of histological Techniques John.D.Bancroft
2. Hand book of histopathological Techniques. CFA Culling
3. Practical haematology. Davie & Lewis
4. Wintrobes Practical haematology
5. Lynch‟s Medical Laboratory Technology
6. Haematology Charles E David
7. Diagnostic Cytology Koss. Volume I & II
8. de Gruchy‟s Clinical Haematology
9. Atlas of Haematology.
10. . Henry‟s Clinical Diagnosis&Management by Laboratory method.
11. Basic Histopathology – Stevens.
12. Practical Cytology – Astarita.
13. Atlas of Haematology – Mc Donald-Paul Anderson.
14. Recent Advances in Haematology – Choudhary.
15. Hand book of Medical Laboratory Technology – Robert H. Carman
16. Compendium of Transfusion Medicine.- Dr.R.N. Makroo
17. Immunology – Kuby.
18. Cytogenetics by Yunis.

Paper.VII–Dissertation.

No:of hours per subject

Paper	***Subject***	***Theory***	***Practical hours***	***Clinical Laboratory Practice***	***Total hrs***
FIRST year					
Paper-I	Haematology	100 hrs			

☆

Paper-II	Histopathology	100 hrs	600 hrs	1250 hrs	2250 hrs
Paper-III	Clinical Patholgy & Cyto Genetics	100 hrs			
Paper IV	Cytology	100 hrs			
SECOND year					
Paper-V	Blood banking & Immuno Pathology	100 hrs			1650 hrs
Paper - VI	Laboratory Organization, QC, and Recent Advances in Pathology	100 hrs	300 hrs	1150 hrs	
	Dissertation				600 hrs
Total	First and second year including Dissertation				4500 hrs

2.12 Practical training

As per"No.of hour's per subject " above.

2.13 Records

To be maintained for all Practical Work

2.14. Dissertation:

As per dissertation Regulations of KUHS

(1) Synopsis

Every candidate undergoing M.Sc(MLT) course shall carry out work on a selected research project under the guidance of a recognized guide. The results of such a work shall be submitted in the form of a dissertation.

The dissertation is aimed to train a post graduate student in research methods and techniques. It includes identification of problem, formulation of hypotheses, search and review of literature, getting acquainted with recent advances, designing ofa research study, collection of data, critical analysis and comparison of results and drawing conclusions.

Every candidate should submit a synopsis to the registrar of the University in the prescribed format containing particulars of proposed dissertation work after obtaining ethical clearance from the Institutional Ethical Committee comprising principal and senior professor of the college within nine months from the date of commencement of the course on or before the date notified by the university. The synopsis shall be sent through the proper channel. Such synopsis will be reviewed and thedissertation topic will be registered by the university.

(2) Dissertation submission

The candidate should submit their dissertation work at the end of 9 months of second year of the M.Sc.(MLT)course. The Scientific Committee of the college/Department should scrutinize and evaluate the dissertation work and make required correction if necessary and accept with modification before submitting to the university.

Four copies of the dissertation work shall be submitted to the registrar on the 21st month of the commencement of course. Hall ticket for the Second year examination will be issued to the candidate only after the submission of dissertation to the university.

(3) Dissertation Valuation

Dissertation valuation of the candidates will be conducted by the internal andexternal examiners together on the basis of work, presentation and defense viva at thetime of second year M.Sc. (MLT) practical examination. The mark distribution is as follows.

Project Content	200
Presentation	50
Defense Viva	100
Continuous Evaluation	50
TOTAL	400

☆

Tentative Schedule for dissertation

Sl No	Activities	Scheduled Time
1	Submission of the research proposal	End of 9th month of 1st year
2	Submission of dissertation – Final	End of 9th month of II nd Year

Research Guide

1) Qualification of Guide

(i) Guide: Faculty in Medical Laboratory Technology / expert in the same Specialty with a minimum of 2 years' experience in teaching in the Post Graduate Programme in MLT and a minimum of 5 years of experience after Acquiring MD/M.Sc (MLT) degree.

(ii) Co-Guide: A Co-Guide is a Faculty/expert in the field of study.

(iii) Either Guide or Co-Guide should be a regular faculty in the concerned subject Having Post Graduate qualification in Medical Laboratory Technology.

2) Guide – Students Ratio

Maximum of 1:4 (including as co-guide)

3) Change of Guide– Guide may be changed only on unavoidable situations with prior permission from the University.

☆

No change in the dissertation topic/Guide shall be made without prior approval from the university.

2.15. Speciality training if any:

Additional Specialty training is not applicable for MSCMLT Pathology.

2.16. Project work to be done if any

Project work is not mandatory for MScMLT-Pathology

2.17. Any other requirements [CME, Paper Publishing etc.]

A minimum of 2 CME should be attended during the period of study.

2.18. Prescribed/recommended textbooks for each subject

As per ["Content of each subject in each year "] above. (Attached at the end of each syllabus)

2.19. Reference books

As per ["Content of each subject in each year "] above. (Attached at the end of each syllabus)

2.20. Journals

As per ["Content of each subject in each year "] above. (Attached at the end of each syllabus)

2.21. Logbook

All the candidates shall maintain a Log Book for recording performance of activities, seminars, journal Club and other presentations. The Log Book verified by the course coordinator / concerned faculty in-charge shall be certified by the Head of department and presented in the University Practical Examination.

3. EXAMINATIONS

3.1 Eligibility to appear for exams

(a) Attendance and condonation option

All the candidates joining the postgraduate programme should have 80% attendance to appear the University examination. No condonation benefit for MscMLT--Pathology

(b) Internal Assessment

Internal assessment will be based on assessment examination, Projects, presentation of seminars, Tutorials, Journal Clubs and work assessment during clinical postings. In the case of candidates who fail in the University Examination, fresh internal assessment marks should be sent (without carrying over the previous marks), before each attempt of University examination. The minimum internal assessment marks required for appearing the University examination shall be 50%. The statement of internal assessment marks of all students in a year countersigned by the Head of department and forwarded to the University when required.

(c) Log Book

All the candidates shall maintain a Log Book for recording performance of activities, seminars, journal Club and other presentations. The Log Book verified by the course coordinator / concerned faculty in-charge shall be certified by the Head of department and presented in the University Practical Examination.

3.2 Schedule of Regular/Supplementary exams

(1) Theory Examination

Duration of theory examination for all the papers will be three hours each. Maximum marks of each paper shall be 100.

(2) Practical & viva

After the theory examination, Practical and Viva examination in each specialty shall be conducted on three consecutive days, at the end of every year.

(3) Dissertation

The evaluation of the dissertation work will be on the basis of project content, Presentation, defense viva and valuation by the internal and external examiners together, appointed by the University.

(4) Supplementary Examination

No supplementary batch will be conducted for M Sc(MLT) course but supplementary examination will be conducted within six months after each regular examination. Candidate failing to secure minimum pass mark in any theory paper shall reappear for that paper only. Candidates who fail in the practical examination shall reappear for both practical and Viva voce in the supplementary examination.

Maximum number of attempts per subject is three inclusive of first attempt

3.3 Scheme of examination showing maximum marks and minimum marks

Scheme of evaluation

Evaluation system for M.Sc (MLT) Degree is Centralized double valuation by examiners of affiliated Colleges. The average of marks of the two valuations is taken as the mark of the theory paper. There will be third valuation if the average marks of first and second valuation is at or between 45% and 49% marks and the discrepancy of not less than 15% marks should undergo a third valuation, and the average of aggregate of the highest two will be counted. Practical and Oral examination shall be evaluated jointly by the examiners appointed by the University. No re- evaluation is permitted, only re-totaling can be allowed on request by the candidate.

Scheme of Examination of MSc (MLT)-Pathology

First year

Year	*Paper*	*Maximum Marks*	*Minimum Marks*
	Paper- I Haematology Internal Assessment	 100 50	 50 25

	Paper- II Histopathology Internal Assessment	 100 50	 50 25
	Paper- III Clinical Pathology & Cytogenetics Internal Assessment	 100 50	 50 25
	Paper- IV Cytology Internal Assessment	 100 50	 50 25
	Practical Internal Assessment Viva	300 50 50 400	150 25 200
	Total for PART I	**1000**	**500**

Second year

2nd Year (Part II)	Paper -V Blood Banking & Immunopatholgy Internal Assessment	 50 150	 20 75
	Paper -VI Laboratory Organization ,QC, and Recent Advances in Pathology	 100 50 150	 50 20 75
	Practical Internal Viva voce Total	200 50 50 300	100 20 150
	Dissertation	400	200
	TOTAL for PART II	**1000**	**500**
GRAND TOTAL		**2000**	**1000**

3.4 Papers in each year:

As per (“Papers in each year “) above

3.5 Details of theory exams

As per (“Papers in each year “) above

☆

3.6 Model question paper for each subject with question paper pattern

Question paper setters –

Shall be a regular faculty member of the College/Department with MD / MSc (MLT) degree in the concerned subject and having a minimum of 5 years of teaching experience after acquiring Post graduate degree.

Setting of Question paper

All the question paper shall be of standard type. Each theory paper will be of 3 hours duration and shall consist of ten question carry equal mark with a maximum of 100 marks. Theory paper in all the subjects will consists of ten questions of 10 marks each or two sub questions in a ten mark main question.

KERALA UNIVERSITYOF HEALTH SCIENCES

FIRST YEAR M.Sc (MLT) - PATHOLOGY DEGREE EXAMINATION

MODEL QUESTIONS

PAPER I – HAEMATOLOGY

Time: 3 Hours **Maximum marks: 100**

Answer all questions. Each question carries 10 marks
Draw diagrams wherever necessary

1. Classify Anaemia. Describe the laboratory diagnosis of iron deficiency anaemia
2. Romanowsky stains
3. Trouble shootings of Hematology analyzers
4. Applications of PCR in Haematology
5. Total leucocytes counting techniques
6. APAAP technique
7. Histograms
8. Laboratory investigations required prior to Bone marrow transplantation
9. Applications of fluorescent dyes in Haematolog)
10. Anticoagulants

KERALA UNIVERSITYOF HEALTH SCIENCES

FIRST YEAR M.Sc (MLT) - PATHOLOGY DEGREE EXAMINATION

MODEL QUESTIONS

PAPER II - HISTOPATHOLOGY

Time: 3 Hours **Maximum marks: 100**

Answer all questions. Each question carries 10 marks
Draw diagrams wherever necessary

1. Reception of histology specimen in a histopathology laboratory
2. Micro anatomical fixatives
3. Dehydrating agents
4. Embedding techniques
5. Faults and remedies in section cutting
6. Use of microwave oven in histopathology and its advantages
7. In situ hybridization
8. Direct Immuno flourscent techniques in histopathology
9. Autopsy techniques
10. Flow cytometry

KERALA UNIVERSITYOF HEALTH SCIENCES

FIRST YEAR M.Sc (MLT) - PATHOLOGY
DEGREE EXAMINATION

MODEL QUESTIONS

PAPER III CLINICAL PATHOLOGY & CYTOGENTICS

Time: 3 Hours **Maximum marks: 100**

Answer all questions. Each question carries 10 marks
Draw diagrams wherever necessary

1. Fluorescent In situ Hybridization for chromosome analysis
2 Microscopic Examination of urine
3. Various methods of detecting HCG levels
4. Collection and examination of CSF
5. Klinefelter syndrome
6. Concentration techniques for the detection of Ova & Cysts
7. Barr Body
8. Examination of synovial fluid
9. Semen analysis
10. Detection of Bence-Jones protein (10X10=100 marks)

KERALA UNIVERSITYOF HEALTH SCIENCES

FIRST YEAR M.Sc (MLT) - PATHOLOGY DEGREE EXAMINATION

MODEL QUESTIONS

PAPER IV - CYTOLOGY

Time : 3 Hours **Maximum marks : 100**

Answer all questions. Each question carries 10 marks
Draw diagrams wherever necessary

1. Normal cytology of female genital tract
2. Collection, preservation and processing of pleural fluid
3. Cytocentrifuge preparations
4. Automation in cytology
5. Fine needle aspiration cytology
6. Shorr's staining
7. Quality control in cytology
8. Density gradent sepearation of malignant cells
9. Spray fixatives
10 Immunocyto chemistry (10x10 = 100 marks)

KERALA UNIVERSITYOF HEALTH SCIENCES

SECOND YEAR M.Sc (MLT) - PATHOLOGY DEGREE EXAMINATION

MODEL QUESTIONS

Paper - V: BLOOD BANKING AND IMMUNOPATHOLOGY

Time: 3 Hours **Maximum marks: 100**

Answer all questions. Each question carries 10 marks
Draw diagrams wherever necessary

1. ABO blood group system.

2. Blood Component Preparation.

3. Quality Assurance in Tansfusion Service *S*

4. Transfusion Reactions

5. Screening tests

6. Recombinant DNA Technology

7. Molecular genetic techniques for clinical Analysis of the immune systems.

8. Type I hyper sensitivity Reactions

9. Experimental Animal methods to raise Antibodies

10. AIDS

QP Code: **Reg. No.:.....**

Second Year M.Sc MLT Degree Examination (Pathology)

(Model Question Paper)

PAPER V – Blood Banking & Immuno Pathology

Time: 3 hrs Maximum marks: 100

- ***Answer all questions***
- ***Draw diagrams wherever necessary***

Essays **(10x10=100)**

1. ABO blood group system.
2. Blood component preparation.
3. Quality assurance in transfusion services
4. Transfusion reactions
5. Screening tests
6. Recombinant DNA technology
7. Molecular genetic techniques for clinical analysis of the immune systems.
8. Type I hyper sensitivity reactions
9. Experimental animal methods to raise antibodies
10. AIDS

****

QP Code: **Reg. No.:.....**

Second Year M.Sc MLT Degree Examination (Pathology)

(Model Question Paper)

PAPER VI. Laboratory Organization, Quality Control, and Recent Advances in Pathology

Time: 3 hrs Maximum marks: 100

- ***Answer all questions***
- ***Draw diagrams wherever necessary***

Essays **(10x10=100)**

1. Open and closed system analyzers,
2. Purchasing of laboratory equipments and chemicals
3. Quality control systems.
4. Molecular techniques in histopathology.
5. Computerization in histopathology laboratory use of software's.
6. Laboratory safety.
7. Organization of central laboratory in 300 bedded hospital
8. Recent advances in cytogenetic.
9. New generation equipments used in blood bank.
10. Maintenance of laboratory records and statistics.

****

3.7 Internal assessment component

Internal assessment will be based on assessment examination, Projects, presentation of seminars, Tutorials, Journal Clubs and work assessment during clinical postings. In the case of candidates who fail in the University Examination, fresh internal assessment marks should be sent (without carrying over the previous marks), before each attempt of University examination. The minimum internal assessment marks required for appearing the University examination shall be 50%. The class average of internal assessment marks the whole class should not exceed 75% of maximum marks for regular examination and 80% for supplementary examination. The statement of internal assessment marks of all students in a year countersigned by the Head of department and forwarded to the University when required.

3.8 Details of practical/clinical practicum exams

As per ("Papers in each year ") above

3.9 Number of examiners needed (Internal & External) and their qualifications

External Examiners-

External Examiner should be a regular faculty member of the College/Department with MD in Biochemistry/Microbiology/Pathology or MSc (MLT) degree in Biochemistry/Microbiology/Pathology having 5 years of teaching experience after acquiring Post graduate degree.

Internal Examiner-

Internal Examiner should be a regular faculty member of the College/Department with MSc (MLT) degree in the concerned subject having 5 years of teaching experience after acquiring Post graduate degree.

3.10 Details of viva:

As per ("Papers in each year ") above

4. INTERNSHIP

4.1 Eligibility for internship

The students shall do One year internship/service after successful completion of the course as per the Govt. norms.

4.2 Details of internship

Duration: The students shall do One year internship/service after successful completion of the course as per the Govt. norms.

4.3 Model of Internship Mark lists

Internship completion certificate: It will be dcided by KUHS when the internship is implemented by the Govt.

Extension of internship: Internship shall be extended by the number of days the students remains absent. These extended days of Internship should be completed in the respective external/internal Institution. Any other leave other than eligible leave has to be compensated by extension granted by Principal.

4.4 Extension rules:

Any other leave other than eligible leave has to be compensated by extension granted by the Principal. However the course shall be completed within double the duration of the course.

4.5 Details of Training given

Tutorials in Lecture and practical classes

Regular clinical Laboratory practice to ensure practical skill in diagnostic investigations, laboratory responsibility, quality evaluations, managements and supervision.

Students should present seminars in various clinical subjects in medical laboratory technology to attain presentation skill

5. ANNEXURES

5.1 Check Lists for Monitoring: Log Book, Seminar Assessment etc. to be formulated by the curriculum committee of the concerned Institution

5.2 Any detils which are not mentioned in the above will be decided by the KUHS after considering the KUHS ACT and Statues, Governing Council decisions, Guidelines of the respective Councils, the government and directives of the Hon'ble Courts.

Annexure-I

KERALA UNIVERSITY OF HEALTH SCIENCES MEDICAL COLLEGE P.O., THRISSUR – 680 596

PROFORMA FOR RECOGNITION OF POST GRADUATE TEACHER

[Read the instructions carefully before filling up the proforma]

1	**NAME (in Block Letters)**
2	**DATE OF BIRTH:AGE** **(Attested copy of SSLC marks card / proof of date of birth to be enclosed)**
3	**PRESENT DESIGNATION:**
4	**DEPARTMENT:**
5	**ADDRESS:** **Phone (o) :** **Email: Hospital:**
6	**Present Residential** **Address**

6. QUALIFICATION:

(Attested Xerox copies of all the certificates to be enclosed)

Sl No.	Name of the Degree and	Year of Passing	Nameof college	Name of the University	Apex body recognition
UG					
PG					
Ph.D.					

7. Teaching Experience

Designation	Name of the Institution	Duration of teaching		Subject / „s taught
		UG	PG	
Total teaching experience				
Total teaching experience		Before PG____After PG_____Total		

Note:

1. Only full time teaching in a teaching institution affiliated to KUHS / other A university established by law in India is considered as teaching experience.
2. Attested copies of appointment order, service certificate, promotion order & PG Degree, to be enclosed to claim teaching experience.
3. Application is to be submitted through proper channel.
4. The envelope should be super scribed as _Proforma for Recognition as Post Graduate Teacher„.
5. Any other relevant information: (Attach a separate sheet)

(Regarding additional qualifications, achievements, publications, awards etc.,)

Declaration by the Teacher

I hereby declare that the above information provided by me is true and correct. I shall take the sole responsibility f o r any wrong information provided and liable for any action taken by the university.

Place :

Date : Signature of the Teacher

Endorsement by the Principal

The information provided by the teacher is verified from the office records and found to be correct. He/She is eligible to be recognized as a PG teacher to guide the dissertation work of PG students.

Place :

Date : Signature of the Principal

INSTRUCTIONS:

1. The Prescribed Performa must be duly filled by the applicant in his/her own handwriting and submitted to the university through the principal„s office.
2. The Principal should verify all the informations provided especially the date of birth, qualification, experience, and service details before sending the proforma to the university.
3. Ensure that attested copies of all relevant documents are furnished along with the application.
4. The Principal will be held responsible for any false information provided.
5. Incomplete and incorrect applications and applications with false information will be rejected and they are liable for disciplinary action by the university.

Annexure-II

KERALA UNIVERSITY OF HEALTH SCIENCES MEDICAL COLLEGE P.O., THRISSUR – 680 596

POST GRADUATE DISSERTATION – PROFORMA TO BE SUBMITTED FOR CHANGE OF GUIDE

1. Particulars of Candidate, and Existing Guide

☆

Candidate's Name & Address :

Name of the Institution :

Course of Study & Subject :

Date of Admission to Course :

Title of the Topic :

Name & Designation of Existing Guide :

Signature of the Candidate :

3.Particulars of proposed and Existing Guide

Name & Designation of proposed Guide :

Has the proposed guide been recognized as PG teacher by KUHS: Yes / No

If yes, please furnish the particulars of university letter & If No, Please send his/her proforma for recognition as PG teacher

Signature of the proposed Guide:

Name & Designation of Co-Guide if present: Signature of the Co-Guide: Endorsement for change of guide

1. Remarks and Signature of the HOD :

2. Specific Reason for change of Guide:

3. Remarks and Signature of the Principal:

5.3 Template for Dissertation

Standard format of dissertation

The written text of dissertation shall not be less than 100 pages and shall not exceed 150 pages excluding references, tables, questionnaires and annexure. It should be neatly typed (font size 12 – Time New Roman or font size 123 Arial) in double line spacing on one side of the bond paper (A-4 Size) and bound properly. The Guide and the head of the institution shall certify the dissertation.

☆ 30

The dissertation should be written under the following headings:

(1) Introduction
(2) Objective of study
(3) Review of Literature
(4) Methodology
(5) Analysis and Interpretation
(6) Results
(7) Discussion
(8) Conclusion
(9) Summary
(10) Reference
(11) Appendices

Proforma for Submission of M. Sc (MLT) Dissertation Proposal/ Synopsis

1. Name & Address of Student:

2. Email ID of the Student:

3. Registration Number:

4. Name & Address of Recognized Institution:

5. Title of the Dissertation:

6. Name of the Guide:

7. Address, phone number and E-mail ID of the Guide:

8. Educational Qualification of the Guide:

9. Experience of teacher in guiding postgraduate students. (in years):

10. Name of the Co-Guide:

11. Address, phone number and E-mail ID of the Co-Guide:

12. Educational Qualification of the Co-Guide:

13. Synopsis of the study: Attached – Yes/No

Date: Signature of the Guide

Enclosures:

I.) Bio- Data of the Guide

II.) Synopsis of the study (maximum 4-6 pages)

☆ 32

Proposal/Synopsis Outline

1. Title
2. Background /significance of the problem.
3. Purpose of the study
4. Statement of the problem
5. Objectives of the study
6. Operational Definitions
7. Conceptual Framework
8. Assumptions/ Hypotheses
9. Research Methodology
    a) Research Approach
    b) Research Design
    c) Setting
    d) Population, Sample & Sampling Technique
    e) Tools & Technique
    f) Pilot Study
    g) Plan for data collection
    h) Plan for data analysis
10. Work Plan
11. Budget
12. Ethical Considerations

13. References

14. Appendices

Guidelines in writing synopsis

1. The research protocol should be of about 1200 words (4-6 pages of A4 size) on the topic. The research protocol should be submitted with a covering letter signed by the candidate and guide.
2. The work on and writing of protocol/ dissertation should be done under the Guide approved by the University.
3. The guide must be as per University norms.
4. The synopsis should be signed by the candidate and forwarded through the Guide, Departmental head and Principal of the Institution.

Format for the submission of Dissertation Hard &Soft copy

Instructions to candidates

Although your dissertation may be prepared on a computer, consider the following requirements for meeting the standards.

Paper

Use only one side of high-quality, plain white (unlined in any way) bond paper, minimum 20-lb weight, and 8 ½ || x 11|| in size. Erasable paper should not be used.

Type Size and Print

Select fonts type Times New Roman and a size of 12 characters. The size of the titles should be 14 and Bold, the size of subtitles should be 12 and bold. Print should be letter quality or laser (not dot matrix) printing with dark black characters that are consistently clear and dense. Use the same type of print and print size throughout the document.

Pagination

Number all of the pages of your document, including not only the principal text, but also all plates,

tables, diagrams, maps, and so on. Roman numerals are used on the preliminary pages (pages up to the first page of text) and Arabic numerals are used on the text pages. The numbers themselves can be placed anywhere on the page, however they should be consistent.

Spacing

Use double spacing except for long quotations and footnotes which are single-

Margins

To allow for binding, the left-hand margin must be 1.5‖. Other margins should be 1.0‖. Diagrams or photographs in any form should be a standard page size, or if larger, folded so that a free left-hand margin of 1.5‖ remains and the folded sheet is not larger than the standard page.

Photographs

Professional quality black-and-white photographs are necessary for clear reproduction. Colors are allowed, but you should be certain the colored figure will copy clearly and will not be confusing when printed in black and white.

FILE FORMAT

Dissertation format should be in .Doc (Ms Word Document) or PDF (Portable Document Format), Image files in JPG or TIFF format and Audio Visual in AVI (Audio Video Interleave), GIF, MPEG (moving picture expert) files format.

Labeling on CD

CD-ROM Labeling should be standard and should contain title, name of the candidate, degree name, subject name, guide name, name of the department, college, place and year.

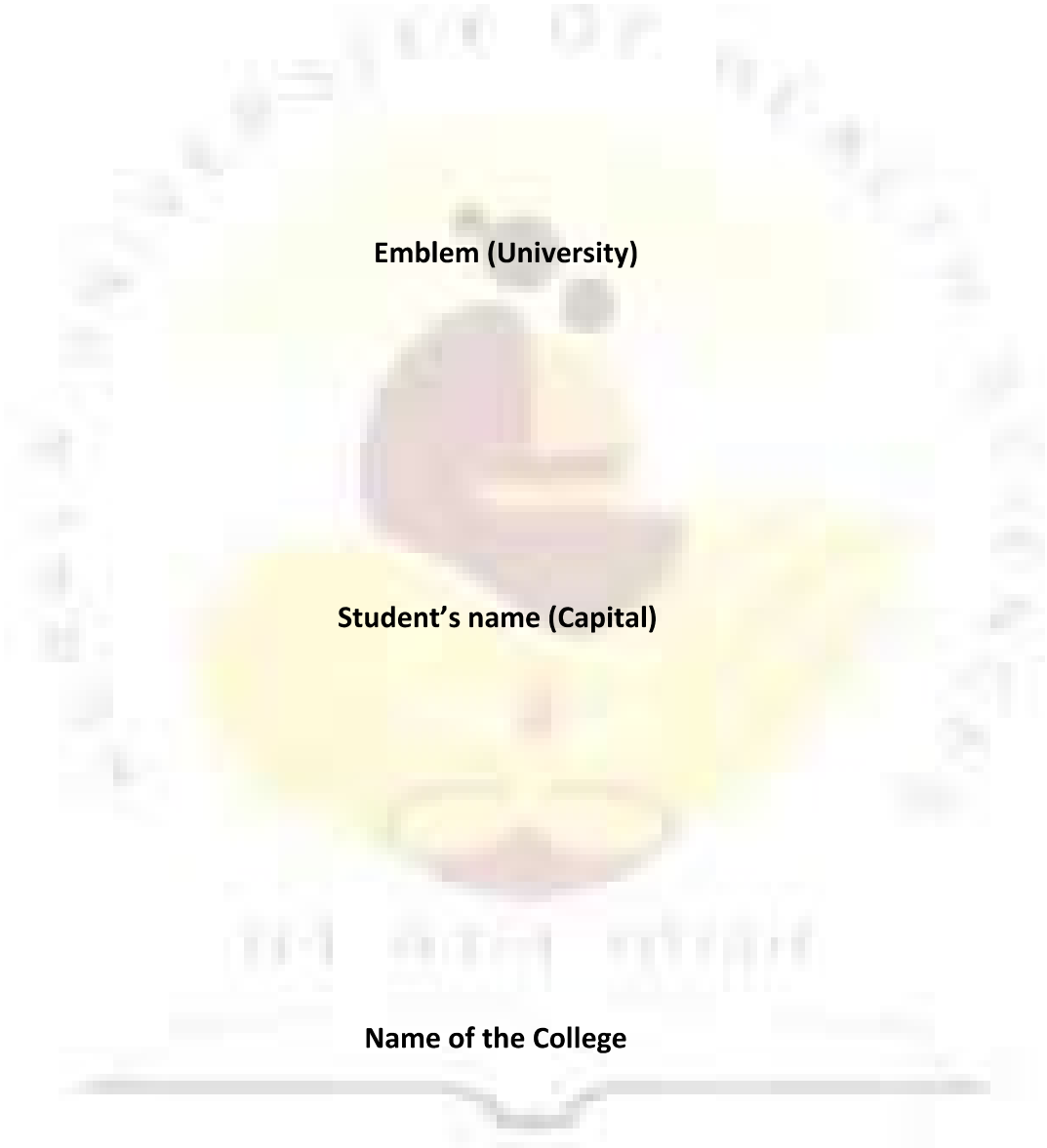
References

Vancouver style format.

GUIDELINES OF DISSERTATIONS FOR M.Sc (MLT) DEGREE

Title (Capital)

Emblem (University)



Student's name (Capital)

Name of the College

DISSERTATION SUBMITTED IN PARTIAL FULFILMENT OF THE

REQUIREMENTS FOR THE DEGREE OF

☆

MASTER OF SCIENCE IN MEDICAL LABORATORY TECHNOLOGY KERALA UNIVERSITY OF HEALTH SCIENCES

Year

☆ 37

<----------Title---------->

by

Name of the Candidate

Dissertation Submitted to the

KERALA UNIVERSITY OF HEALTH SCIENCES THRISSUR

Inpartialfulfillment

of the requirements for the degree

of

Degree Name

in

Subject Name

Under the guidance of

Name of the Guide

Name of the Department

Name of the College

Place

Year

☆ 39

DECLARATION BY THE CANDIDATE

I hereby declare that this dissertation/thesis entitled -<----------Title-

---------->" is a bonafide and genuine research work carried out by me under the guidance of **Name & designation of the Guide**.

Signature of the candidate

Place:

Date :

CERTIFICATE BY THE GUIDE

This is to certify that the dissertation entitled –<----------Title---------

----------> –is a bonafide research work done by **Name of the Candidate** in partial fulfillment of the requirement for the degree of **Degree Name**.

Signature of the Guide

Place

Date : Name and Designation

☆ 41

ENDORSEMENT BY THE HOD, PRINCIPAL/HEAD OF THE INSTITUTION

This is to certify that the dissertation entitled ----------Title---------

---------- -is a bonafide research work done by **Name of the Candidate** partial fulfillment of the requirement for the degree of **Degree Name**.

Seal & Signature of the HOD

Seal & Signature of the Principal

Name

Name

☆

Place:

Date:

Place:

Date:

☆

COPYRIGHT

Declaration by the Candidate

I hereby declare that the Kerala University of Health Sciences, Kerala shall have the rights to preserve, use and disseminate this dissertation in print or electronic format for academic / research purpose.

Date : **Signature of the candidate**

Place: **Name**

ACKNOWLEDGMENT

Not lengthy. Avoid Superlatives.

Signature of the Candidate

Place:

Date **Name**

☆ 45

ABSTRACT

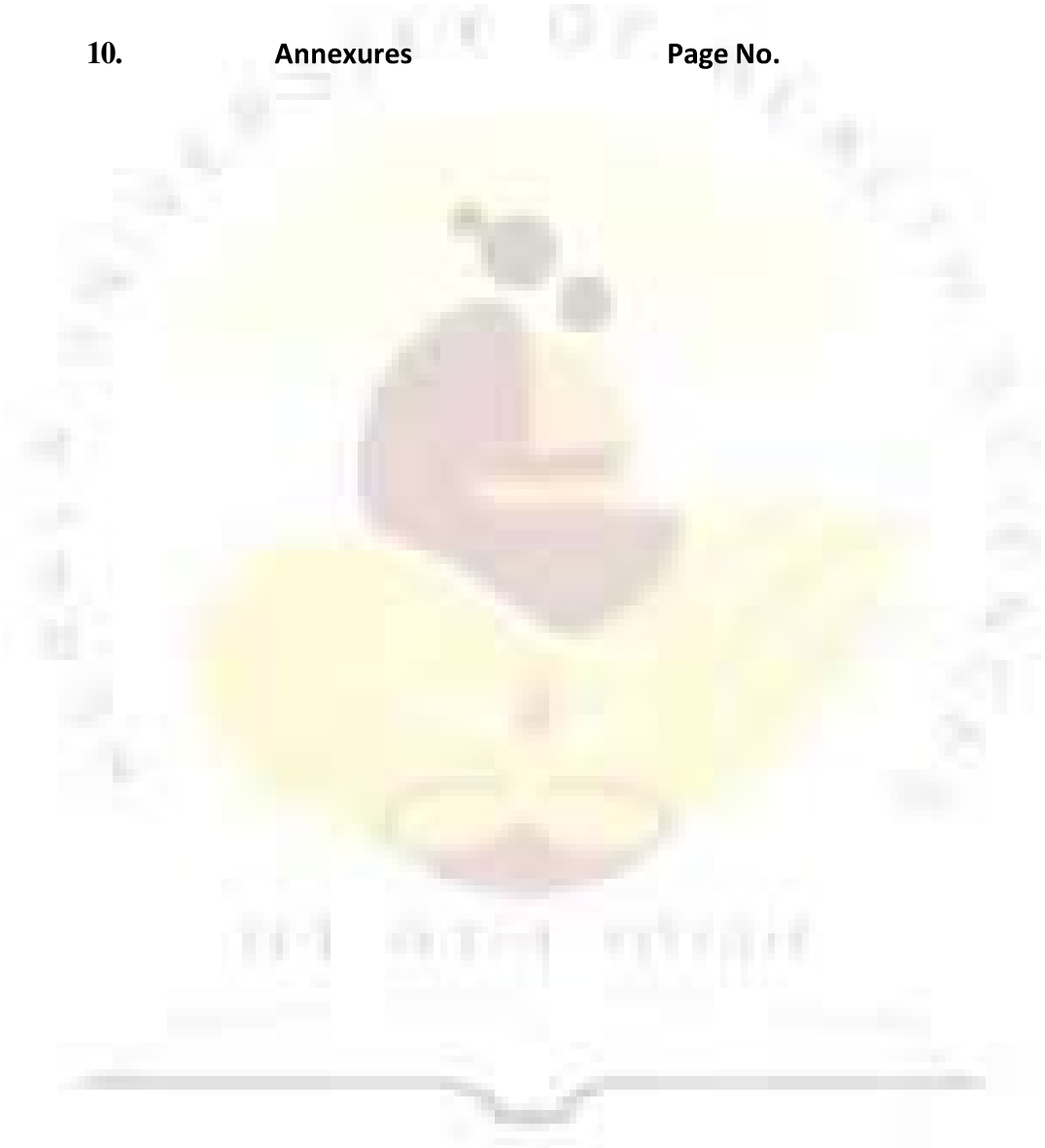
(Include problems and objectives, methodology, results, interpretation and conclusion in a single paragraph limited to 250-300 words)

Keywords
(Max. 10)

Keywords shall be chosen from reference Books and Text Books (Each keyword should be separated by semicolon)

TABLE OF CONTENTS

☆



LIST OF TABLES

(14 size bold)

Sl.No Tables Pages

1.

2.

LIST OF FIGURES

(14 size bold)

Sl.No	Figures	Pages
1.		
2.		

☆

LIST OF APPENDICES

(14 size bold)

Sl.No	Figures	Pages
1.		
2.		

☆

CHAPTER 1

1. **INTRODUCTION** (14 size bold)
2. **OBJECTIVES**
3. **REVIEW OF LITERATURE**
4. **METHODOLOGY**
5. **RESULTS**
6. **DISCUSSION**
7. **CONCLUSION**
8. **SUMMARY**
9. **REFERENCES**
10. **ANNEXURES**

☆

CHAPTER I

Introduction (14 sizes, Bold)

Sub Headings (12 size, bold)

Background of the problem

Need and significance of the study

Statement of the problem

Objectives

Operational definitions

Assumptions (if any)

Hypothesis (write research hypothesis)

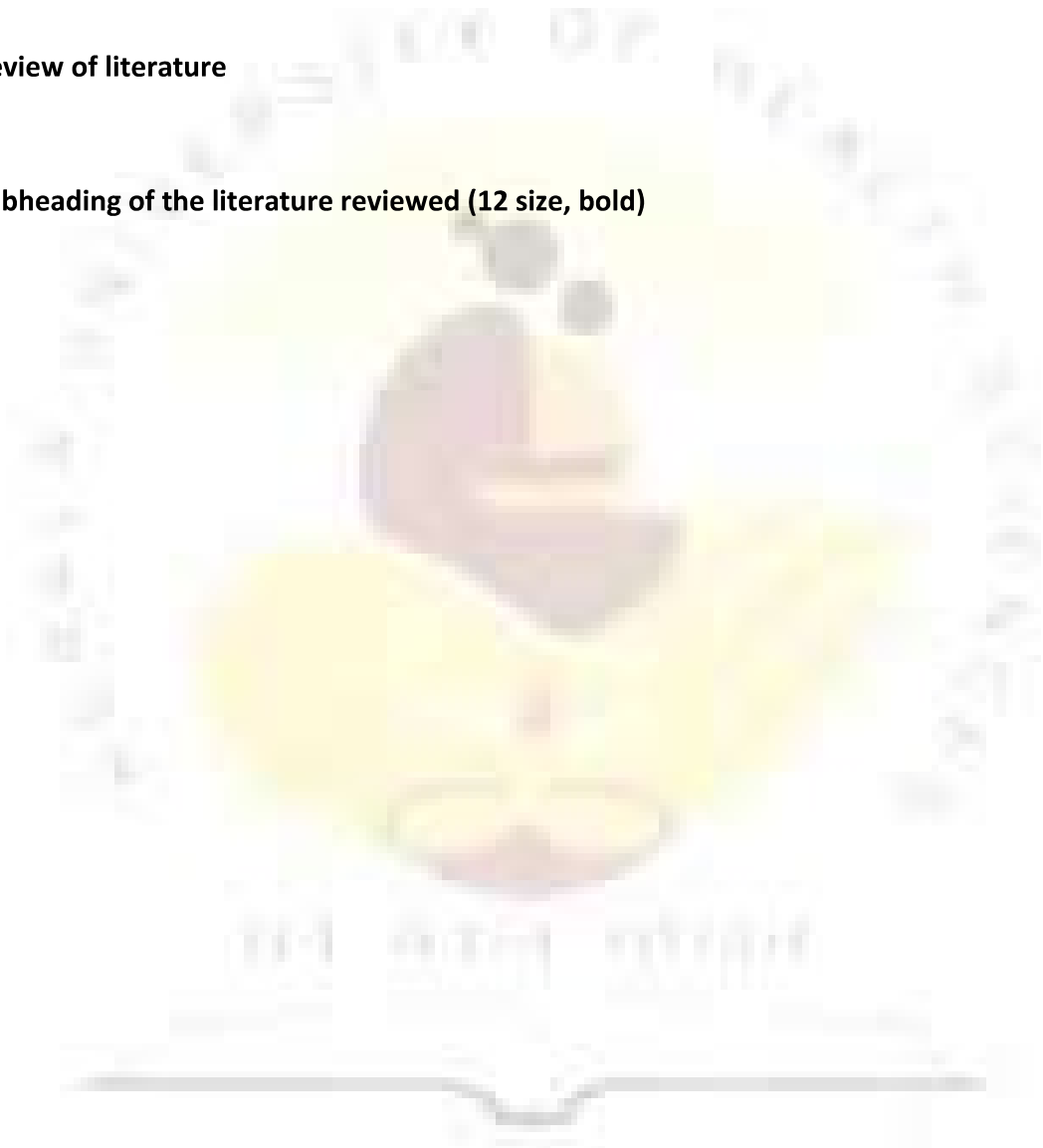
Conceptual/theoretical frame work

☆

CHAPTER.2 (14 sizes, bold)

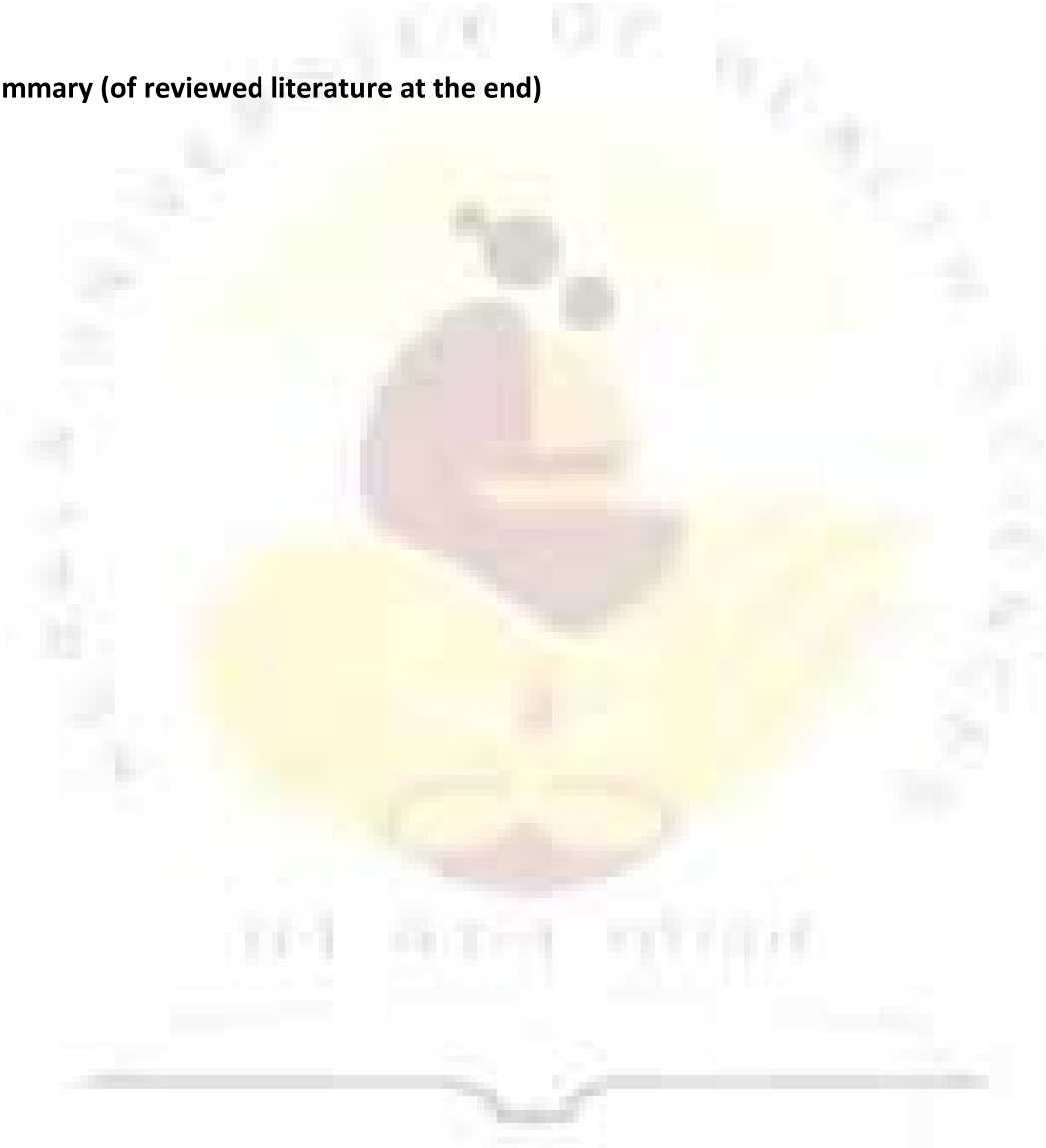
Review of literature

Subheading of the literature reviewed (12 size, bold)



☆

Summary (of reviewed literature at the end)



☆

CHAPTER 3 (14 SIZE, BOLD)

Methodology

Research approach

Research design

Variables

Schematic representation of the study

Setting of the study

Population

Sample and sampling technique

Inclusion criteria

Exclusion criteria

Tool/instruments

Development/selection of the

tool Description of the tool

Content validity

Reliability of the tool

Pilot study

Data collection process

Plan for data analysis

☆

CHAPTER 4 (14 SIZE, BOLD)

Analysis and interpretation

Section title

(Section wise presentation of data)

CHAPTER 5 (14 SIZE, BOLD)

Results Objectives

Hypothesis

Results

☆

CHAPTER 6 (14 SIZE, BOLD)

Discussion, summary and conclusion

Discussion

Summary

Conclusion

Implications

Limitations

Recommendations

☆

DISSERTATION STYLE: Vancouver style format is used Citations in the text

General rules:

1. References are numbered consecutively in the order in which it is cited in the text. Place each reference number in parentheses e.g. (5) or as superscripts Eg. …….was discovered [1.3] throughout the text, and tables. Use Arabic numerals in parentheses e.g. (5) for in-text citation; the number in parentheses links directly to the reference list at the end of the work. If the same reference is used again, re-use the original number. Either square { } or curved brackets () can be used as long as it is consistent.

2. Superscripts Number should be inserted to the left or colons and semi colons. Full stops are placed either before or after the reference number e.g…….. was discovered [1.3] or was discovered [1.3] .

3. Direct quotes are to be used very carefully. If a direct quote is necessary, place quotation marks around the quote and number the reference as usual.

4. Personal communication used as a reference should be avoided, unless it provides essential information not available from a public source. Do not number this type of reference; instead cite the name of the person and date of communication in parentheses in the text.

5. When multiple reference are cited at a given place in a text, use a hyphen to join the first and last numbers that are inclusive, e.g (6-8). Use commas to separate non-inclusive numbers e.g (2,3,4,5,7,9) is abbreviated to (2-5,7,9)
6. The same number is used for a source throughout a paper. This number is determined by the first citation of the source. So, for example, if a work is the fourth source cited in a paper, it will be referred to as (4) or by the superscript number 4 throughout that paper.

☆

7. Whatever format is chosen, it is important that the punctuation is consistently applied to the whole document.

Tables

Tables must be self-explanatory. The data must be clearly organized and should supplement and not duplicate the text. Data may be presented either in a table or pictorial form. Do not use internal horizontal or vertical lines. Explanatory matter should be given as footnotes. Statistical analysis used must be appropriate. Confidence intervals along with exact probability values must be stated for the results. Round decimals in two digits. Each table must have a title and should be numbered with Arabic numerical e.g. (1, 2) .Type or print each table with double spacing on a separate sheet of paper. Number tables consecutively in the order of their first citation in the text and supply a brief title for each. Give each column a short or an abbreviated heading. Explain all nonstandard abbreviations in footnotes. Table should not be carried over to the next page.

Example for a table

Table

18

Distribution of isolates according to Anti-fungal susceptibility pattern

Isolates	Sensitive	Resistant	Total
C.albicans	37	10(21.3%)	47
C.tropicalis	16	7(30.43%)	23
C.glabrata	9	10(52.63%)	19
C.parapsilosis	8	3(27.27%)	11

Illustrations and figures

☆

- Number each figure in the text in consecutive order

Abbreviations and symbols

Use only standard abbreviations; use of non-standard abbreviations can be confusing to readers. Avoid abbreviations in the title of the manuscripts. The
Spelled-out abbreviation followed by the abbreviation in parenthesis should be used on first mention unless the abbreviation is a standard unit of measurement.

Abstract

Abstract provides a brief summary of the dissertation/thesis, summing up clearly the problem examined, the methods used, and the main findings. The abstract is a one-paragraph, self-contained summary of the most important elements of the paper. The abstract word limit is between 250 and 300 words. All numbers in the abstract (except those beginning a sentence) should be typed as digits rather than words. Key words (max.10) should be given, chosen from subject concerned headings. Each word should be separated by semicolon.

References

- The reference list should appear at the end of the paper and provide the full bibliographic information about the sources cited.

- List all reference in order by number, not alphabetically. Each reference is listed once only, since the same number is used throughout the paper. It should be numbered consecutively in the order in which they are first mentioned in the text. Identify references in text and tables by Arabic numerals in parentheses.

- The titles of journals should be abbreviated according to the style used in the list of journals. The following information is included for journal articles: author(s), article title, abbreviated journal title, year, month(if applicable), day, volume number, issue number(if applicable), page numbers. For books author (s), title, Edition, place of publication, publisher and year.

- List each author's last name and initials; full first names are not included. List all authors, but if the number exceeds six, give the first six followed by "et al").

- For books with chapters written by individuals authors, list the authors of the chapter first, then the chapter title, followed by "In:" the editors "names, and the booktitle.

- Initials follow the family names of authors and editors, with no space or full stops between the initials of an author, e.g. Halpern SD, Ubel PA, Caplan AL.

- Commas are used to separate each author's name. Note that "and" is not used to separate the last two names.

- Minimal capitalization is used for the article title, ie only the first word and words that normally would begin with a capital letter are capitalized.

- Full stops are used after the last authors initials, after the article title, after the abbreviated journal title and at the end of the entry.
  Gerald Collee J,Andrew G Fraser,Barrie P Marmion,Anthony simmons. Mackie&Maccartney Practical medical microbiology.Newyork:Churchil Livingstone;1996.

- The date is followed by a semicolon (with no space after it) and the volume number or issue number is followed by a colon (with no space after it)
  Mardani M,Hanna HA,Girgawy,Raad I.Nosocomial candida guilliermondi fungemia in cancer patients.Infect control Hosp epidemiol.2000;21:336-337.

☆

Reference: Examples

Book (one author)

John Bernad Hendry .Clinical diagnosis and management by Laboratory methods.19 th ed. Philadelphia:W B Saunders;1996.

Book (two or more authers)

Betty A Forbes, Daniel F Sahm,Alice S.Weissfeld.Bailey & sciott‟s Diagnostic Microbiology. 10th ed.Mosby: Elsevier;2007.

Chapter in edited book

Leslie Collier, Albert BalowsMax sussman.Microbiology and microbial infections.In:Virology. Brain W J Mahy, Leslie Collier, editors. The immune response to viral infections. New York: Arnold; 1998.p173-192.

Journals

- List up to the first 6 Authors;1-6 – authors:Eg: Growther RA,Kiselev NA.Three diamontional structure of Hepatitis B virus core particles determined by electron cryomicroscopy.J Bio chem. cell. 1994; 77: 943-50

- If the article has more than 6 authors, list the first six, followed by et al. Give the first six names in full and add "et al". The authors are listed in the order in which they appear on the title page.

- If the journal carries continuous pagination throughout a volume, the month and or issue number may be omitted.

- Halpern SD Ubel PA,Caplan AL.Solid-organ transplantation in HIV infected patients.N Engl J Med.2002;347:284-87.

Journal article on the internet:

Sun Ah Lee, Jimin Kahng, Yonggoo Kim, Yeon-Joon Park, Kyungja Han, Seung-Ki Kwok.et al. Comparative Study of Immunofluorescent Antinuclear Antibody Test and Line Immunoassay Detecting 15 Specific Autoantibodies in Patients With Systemic Rheumatic Disease.J CLA.2012. July 26(4) p. 307–314[cited 2012 July 18].available from: http://onlinelibrary.wiley.com/doi/10.1002/jcla.2012.26.issue-4/issuetoc

☆

Books on the internet

Joel D Hubbard.A concise review of clinical laboratory science .2nd ed.Philadelphia : Wolters Kluwer Health/Lippincott Williams & Wilkins;c2010.Available from: http://www.docin.com/p-294624555.html.

General principles

Paper

Use only one side of high quality, plain white (unlined in any way) bond paper, minimum 20-lb weight, and 8 ½ “ x 11” in size. Erasable paper should not be used.

Type size and print

The fond size should be visible to the reader,
preferably Times New Roman 12 pt .No italicization.

☆

Size of the title should be 14 and bold,the size of sub-title should be 12 and bold. Print should be letter quality or laser (not dot matrix) printing with dark black characters that are consistently clear and dense. Use the same type of print and print size throughout the document.

Pagination

Number all of the pages of your document, including not only the principal text, but also all plates, tables, diagrams, maps and so on. Romam numerals are used on the preliminary pages (pages up to the first page of text) and Arabic numerals are used on the text pages. The numbers themselves can be placed anywhere on the page, however they should be consistent.

Spacing

Use double spacing except for long quotations and foot notes which are single spaced.

Margins

Margin size; "generous"- Use plenty of room on the top,bottom,left&right(1"minimum). To allow for binding, the left hand margin must be 1.5". other margin should be 1.0". Diagrams or photographs in any form should be a standard page size, or if larger, folded so that a free left- hand margin of 1.5" remains and the folded sheet is not larger than the standard page.

Photographs

Professional quality black-and-white photographs are necessary for clear reproduction.colors are allowed,but you should be certain the colored figure will copy clearly and will not be confusing when printed in black and white.

File Format

Dissertation format should be in Doc (Ms word document) or PDF(portable

document fomat),Image file in JPG or TIFF format and audio visual in AVI(Audio Video Interleave),GIF,MPEG (moving picture expert) files format.

Labeling on CD

CD-ROM labeling should be standard and should contain title, Name of the candidate , degree name ,subject name, Guide name, name of the department, College, place and year.

5.4 Template for Mark List showing Maximum & Minimum

M.Sc. MLT- Pathology

First Year M.Sc. MLT Pathology Exam

Sl.No.	Subject		Theory			Practical			Total			Result
	Paper		Max	Min	Awarded	Max	Min	Awarded	Max	Min	Awarded	
1	Haematology	IA	50	20		-	-	-	150	75		
		University	100	50		-	-	-				
		Viva	-	-		-	-	-				
		Group Total	150	75		-	-	-				
2	Histopathology	IA	50	20		-	-	-	150	75		
		University	100	50		-	-	-				

		Viva	-	-		-	-	-				
		Group Total	150	75		-	-	-				
3	Clinical Pathology & Cytogenetics	IA	50	20		-	-	-	150	75		
		University	100	50		-	-	-				
		Viva	-	-		-	-	-				
		Group Total	150	75		-	-	-				
4	Cytology	IA	50	20		-	-	-	150	75		
		University	100	50		-	-	-				
		Viva	-	-		-	-	-				
		Group Total	150	75		-	-	-				
5	Pathology	IA	-	-	-	50	20		400	200		
		University	-	-	-	300	150					

	Practical	Viva	-	-	-	50	-					
		Group Total	-	-	-	400	200					
Grand Total									**1000**	**500**		
(Grand Total in Words)												

Second Year M.Sc. MLT Pathology Exam

Sl.No.	**Subjects**		**Theory**			**Practical**			**Total**			**Result**
	Paper		Max	Min	Awarded	Max	Min	Awarded	Max	Min	Awarded	
1	Blood Banking & Immunopathology	IA	50	20		-	-	-	150	75		
		University	100	50		-	-	-				
		Viva	-	-		-	-	-				
		Group Total	150	75		-	-	-				
	Laboratory	IA	50	20		-	-	-				

2	Organization, QC and Recent Advances in Pathology	University	100	50		-	-	-	150	75		
		Viva	-	-		-	-	-				
		Group Total	150	75		-	-	-				
3	Pathology - Practical	IA	-	-	-	50	20		300	150		
		University	-	-	-	200	100					
		Viva	-	-	-	50	-					
		Group Total	-	-	-	300	150					
4	Dissertation	IA	-	-	-	50	-		400	200		
		University	-	-	-	350	-					
		Viva	-	-	-	-	-	-				
		Group Total	-	-	-	400	200					

GRAND TOTAL									**1000**	**500**		
(Grand Total in Words)												

☆