TABLE OF CONTENTS

CURRICULUM DEVELOPMENT COMMITTEE	2
ROAD MAP OF MS BURNS SURGERY (A Brief Summary)	5
INTRODUCTION	6
RATIONALE:	7
Need of program	8
Purpose of training	8
ENTRY CRITERIA	
Eligibility to apply for MS Burns Surgery	9
INTRODUCTION:	9
COURSE DESCRIPTION:	9
Context of Training	11
AIMS & OBJETIVES	
Aims of Training	12
Learning Objectives	12
RESEARCH	
Thesis	19
ASSESSMENT	
Formative Assessment	21
FACULTY	23
LEARNING RESOURCES	
Books:	25
Journals:	25
CONTENT OF LEARNING	
Course Content Outline	26
TABLE OF SPECIFICATION	
TOS FOR MID TERM ASSESSMENT (MTA) MS	40
TOS for Final/Exit Examination MS (Burns Surgery)	41
Mandatory Rotations	43
COURSE EVALUATION	43
ABBREVIATION	44

The Statutory Regulatory & Registration Authority for Medical & Dental Education and Practitioners a. www.pmdc.org.pk dc@pmdc.org.pk Qui PAKISTAN Po ta LE 1 **MEDICAL & DENTAL COUNCIL** G-10/4, Mauve Area, ISLAMABAD. LAN: 111-321-786 September 2012 Dated 70 (92 51) 9106151-54 (92 51) 9106159 Secretary. Ministry of National Regulations and Services, Government of Pakistan, Islamabad. INCLUSION OF QUAID-E-AZAM POSTGRADUATE MEDICAL SUBJECT: COLLEGE, PIMS, ISLAMABAD UNDER SECTION 16 OF PM&DC ORDINANCE, 1962. Dear Sir, The Inspection of Quaid-e-Azam Postgraduate Medical College PIMS, Islamabad was conducted on 09-04-2012 for recognition under Section 16 of M&DC Ordinance, 1962 of postgraduate programmes. The inspection report of this programme was considered by the Executive Committee of the Council in its meeting held on 28-08-2012. Keeping all the recommendations in view, the Executive Committee recommends that the following postgraduate programme of Quaid e-Azam Postgraduate Medical College, PIMS, Islamabad may be recognized by the Federal Government in terms of Section 16 of PM&DC Ordinance, 1962 and be included in the Third Schedule of the PM&DC Ordinance, 1952 under the Quaid-e-Azam University, Islamabad. THE THIRD SCHEDULE (See Section 16) RECOGNIZED ADDITIONAL MEDICAL QUALIFICATIONS Additional Abbreviation for registration Medical Institution Recognized Medical Qualifications 1 Quaid-e-Azam University, Islamabad Quaid-e-Azam Postgraduate Medical Sinta College, PIMS, Islamabad per on Master of Science ip M.S Burns Surgery Burns Surgery M.S Ophthalmology Master of Science in Ophthalmology M.D Histopathology Doctor of Medicine in Histopathology M.D Neonatology Doctor of Medicine in Neonatology

2

*As & when granted on or after 9th April 2012. Submitted for your further necessary action under Section 16 of PM&DC Ordinance, 1962. Thank you for your cooperation. Yours sincerely, all (Dr.Ahmad Nadeem Akbar) Registrar President, PM&DC. V.C, Quaid-e-Azam University, Islamabad. Assistant Registrar, Registration Section, PM&DC. P.S to Secretary, NRS, Islamabad. Ban, appec/PINIZ, Islamabar Area when the part 12 RETAILT ON 4 reinmen, 1' 1. 2 reddens 75 decar Phyladrene at taken to a set of animers, all soles, Pagest and the life

Web Site : www.prndc.org.pk E-mail : prndc@pmdc.org.pk PF.12-F-2012 PG/OPMIC, PIMS/237/3

The Statutory Regulatory & Registration Authority for Medical & Dental Education and Practitioners

PAKISTAN MEDICAL & DENTAL COUNCIL

G-10/4, Mauve Area, ISLAMABAD.

Dated 16 July 2012

UAN : 111-321-786 Tel : (92 51) 9106151-54 Fax : (92 51) 9106159

Dean, Qauid-e-Azam Postgraduate Medical College, Pakistan Institute of Medical Sciences, Islamabad.

Subject:

Kindly find enclosed the decision of Sub Committee of Postgraduate Medical

POSTGRADUATE PROGRAMS OF PIMS, ISLAMAEAD

Education Committee approved by the Postgraduate Committee Chairman of the PM&DC.

The students admitted in 2012 shall be allowed to continue their acadamic pursuit in the Postgraduate programs being run by the PIMS including the below mentioned programs as per case of King Edward Medical University in WP 9007/09 and the Council decision taken by the Council in its 110th meeting on 11th February, 2008 and 115th meeting dated 2nd and 3rd December, 2009 and 22nd December, 2011.

However for 2013 onwards the following courses have also been approved provisionally and final approval shall be communicated after the approval of the Council.

- 1. MJ Histopathology in Level III
- 2. MS Burn surgery in Level IV
- 3. MD Neonatology in Level III
- 4. MS Ophthalmology in Level III
- 5. MDS Pediatrics Dentistry in Level III

Details are contained in the attached minutes.

Students in 2013 can be admitted in only those programs which are approved and notified in the PM&DC schedule.

Yours sincerely, Dr. Anmad Nadeem Akbar

Dr. Anmad Madeem Akbar Registrar



INTRODUCTION:

BURN CARE CENTER PIMS IBD

A state of the art Burn Care Center (BCC) at PIMS which was inaugurated by the President of Pakistan on December 6, 2007, has managed more than 140,000 acute burn injuries up till now. This is the first of its kind in the public sector of Pakistan and rather south Asia that is established in accordance with the latest International standards for the management of Acute Burn Care and long-term sequel.

Burns surgery is a **new emerging sub-specialty of surgery** all over the world and international statistics shows that because of the dedicated and exclusively employed Burns Surgeons, there is more than 50% reduction in the mortality rate and the morbidity has reduced up to a much larger extent.

Internationally there are separate burn centers, text books, journals, societies, organizations and above all a comprehensive **international teaching program**. Moreover there are special incentives for the burn center staff as they have dedicated themselves to the difficult field of burns care.

In Pakistan the treatment of burns victims, up till now, is one of the most neglected part of the medical field both in public and private sectors and one of the main reason is that it was never properly been owned by either the general surgeons or the plastic surgeon.

The management of acute burns injury, which is life threatening in major burns, is not only the treatment of burns wounds but the patient as a whole **for which the fulltime dedicated burns surgeons / staff are required** and the patient in acute phase seldom dies due to burn wounds rather because of metabolic complications.

While preparing the PC-1 for this first state-of-the-art Burn Care Center, it was strongly recommended that for the best output of a Burns Care Center it should be managed by a **dedicated full time Burn Surgeons / staff** who are not occupied or distracted with other demands of general and plastic surgery.

Ministry of Health (by recognizing Burns as a separate specialty) has already approved / published separate recruitment rules (dually approved by the Establishment Division and FPSC) for the **02 faculty posts (Associate Professor of Burn Surgery & Assistant Professor of Burn Surgery)** for this center.

PIMS Burn Care Center is also in the process of collaboration with University of Washington Burn Center at Harborview USA where **Professor David Heimbach**, Professor of Surgery and **Professor Nicole Gibran**, Professor of Surgery / Director of Burn Center, are managing (as being practiced in USA, Canada and many other parts of world) "**Two year burns** **fellowship training program**" for general and plastic surgeon. After completing this fellowship training these surgeons becomes eligible for appointment at Burn Centers as consultant burn surgeons (reference Burn Pearls by Prof. David Heimbach, 20th Edition July 2006).

PRESENT STATUS OF BURN CARE / TRAINING IN PAKISTAN

- It's not very encouraging because somehow or others Burns remains one of the neglected field especially in public and private sector and amongst various factors one the reason is that it was never completely owned by either plastic surgeons or general surgeons.
- Almost every teaching hospital does have few beds within general surgery or plastic surgery wards with routine management of burn pts.
- Very few hospitals do have separate Burn Units but again the facilities and parameters are not up to the mark and few of these are even called as the Burn Centers.
- Burn victim's mortality rate in Pakistan is beyond proportion when compared with other countries. For instance, in our country (year 2003), Mortality rate of a major burn i.e. 40-50% body surface area is **86%**, whereas it is less than **07%** in developed world.
- There are inadequate facilities for the management of Burn patients in the existing public and private sectors hospitals. Under defense budget, there are Burns Centers at CMH Kharian, NESCOM Islamabad and POF Wah, where mostly the beneficiaries are defense personal and few civil patients who can afford heavy expenses of treatment cost.
- The cost of burn care is enormous, over and above ICU care. The cost for the medicines and supplies for these patients can be from Rs: 4000 to 12000 per day depending upon % of burn.

RATIONALE

In the public sector hospitals PIMS has established the first state-of-the-art Burn Care Center, it is strongly proposed that **PIMS should take lead by introducing a teaching / training program in this specialty to become at par with international standards** and for better care of the burn victims at large.

NEED OF PROGRAMME

Importance of establishing such centers is significant from the following clinical data of this center:

Since its start from 05-11-2007, the following are the figures till December 31, 2019:

- Total patients reported
 Male
 Female
 Admissions (Indoor)
 = 140,802
 = 140,802
 = (74194)
 = (66608)
- **Discharge/Recovered** = 4324 (76%)
- Deaths =1397 (24%)
- It may thus be seen that **overall mortality at this center has reduced markedly** to 24% and the overall recovery rate is 76%.

PURPOSE OF TRAINING

WHY THERE IS NEED TO ESTABLISH SUCH DEDICATED CENTERS WITH TEACHING PROGRAM

• Burn victim's mortality rate in Pakistan is beyond proportion when compared with other countries. For instance, in our country, Mortality rate of a major burn i.e. 40-50% body surface area is 86%, whereas it is less than 20% in developed world.

Over the past few years, working as a Burn Surgeon I came to the conclusion that in order to improve in this field **we need to have a career oriented teaching program so that young doctors can join this difficult field of surgery.** International statistics shows that because of these dedicated and exclusively employed Burns Surgeons, there is more than 50% reduction in the mortality rate and the morbidity has reduced up to a much larger extent.

The Govt. by realizing all above facts committed to establish burn centers in almost all big cities and out of these **05 centers** are near completion and will require lot of trained staff for effective functioning of these centers.

The following teaching programs are being Started:

- 1. MS Burns Surgery from SHAHEED ZULFIQAR ALI BHUTTO MEDICAL UNIVERSTY ISLAMABAD (06 years)
- 2. Primary Fellowship (FCPS) in Burns Surgery
- 3. Two years post fellowship training program for fully trained general and plastic surgeons.

MS BURNS SURGERY PROGRAMME STATUTES & REGULATIONS (SZAB Medical University PIMS Islamabad)

The SHAHEED ZULFIQAR ALI BHUTTO MEDICAL UNIVERSTY ISLAMABAD include in the schedule V of Statutes & Regulations for MD/MS/MDS offer a programme to the degree Master of Surgery abbreviated as MS, in the subject of Burns Surgery being introduced first time in Pakistan.

I. <u>PRE-REQUISITE FOR ADMISSION</u>

- To be eligible for admission to **MS Burns and Reconstructive Surgery**, a candidate shall possess an M.B.B.S or its equivalent from a recognized university and registered with PMC.
- Maximum age limit will be 45 years for admission in MS Burn Surgery program.
- The candidate must possess two years professional standing including one year house job and one year resident appointment in the concerned specialty or allied disciplines in a teaching hospital recognized for postgraduate training.
- Passed Entry Examination (both written and Oral) held by concerned institute.

II. ADMISSION AND REGISTRATION

- (a) A candidate seeking admission to **MS BURNS AND RECONSTRUCTIVE SURGERY** program shall, apply on the prescribed form after advertisement in National Press.
- (b) The application shall be submitted to the Registrar Office after advertisement in press on or before closing date.
- (c) All applications received and who fulfill the criteria shall be considered by the admission committee.
- (d) Candidate have to qualify MS Part 1 examination.
- (e) The admissions committee select candidate after interview and submit to the Registrar Office for approval of Competent Authority.
- (f) The admission shall be approved by the Advanced Studies & Research Board (AS & RB).
- (g) A "notification of admission" for each candidate approved for admission to **MS BURNS AND RECONSTRUCTIVE SURGERY** program shall be issued by the University.
- (h) Each student so selected shall be required for registration with Shaheed Zulfiqar Ali Bhutto Medical University, Islamabad within 3 months from the date of issuance of the notification of registration after depositing prescribed registration fee, failing which the admission of the selected candidate shall be deemed as cancelled.

III. <u>CURRICULUM</u>

Duration of Study

Programme of Studies & Credits

- The minimum period for completion of **MS Burns and Reconstructive Surgery**, shall be SIX years from the date of registration, and the maximum period shall be eight years for submission of thesis. Only under exceptional circumstances, to be described in detail by the candidate and supported by the supervisor, the Research Board may allow extension beyond eight years.
- The training will be full time and residential. (32 hours continuous duty followed by 16 hours off)
- The topic of thesis shall be selected by the student in a particular specialty with the approval of the supervisor, Synopsis of the Thesis will be submitted within Two year of registration, otherwise training will be stopped.

The detail program is as follows:-

Course Duration period = 46 weeks /year

FORMAL TEACHING PER WEEK WILL COMPRISE OF:-

TOPIC	DURATION
Formal Lecture	1 hour per week
Clinico-Pathological Conference	1 hour per week
Grand Round	1 hour per week
Case Presentation	1 hour per week
Journal Club	1 hour per week

CONTEXT / SCHEME OF THE COURSE

	Components	examinations
1 st & 2 nd year	Basic medical sciences Anatomy, physiology, biochemistry pathology, pharmacology , behavioral sciences , biostatistics , research methodology Training of Acute burn care Training in Burn intensive care(ICU) General surgery Fundamental concepts Training in basic clinical techniques	Midterm assessment (MTA) After completing 2 years of training • Written : Paper 1: General surgery 50 MCQs Paper 2: Burn surgery 50 MCQs
3 rd 4 th 5 th 6 th years	 Professional education in burn reconstructive surgery Training in burn reconstructive surgery during 3rd 4th 5th 6th years. Duration with department Compulsory rotations in relevant fields Research component Research work/thesis writing project must be completed and thesis be submitted before end of training 	 Part 2 examination This exam is specialized component of MS Burns and Reconstructive surgery program Paper I: 100 One Best type of MCQs 100 Marks Paper II: 100 One Best type of MCQs ACTS/TOACS/OSEC 8 – 10 Stations, minimum 60% Interactive 100 Marks Long Case: One Long case (Duration 50 Minutes) 100 Marks Short Cases: 04 Short Case (Duration 40 Minutes 100 Marks Defense of Thesis(Duration 20 Minutes) 100 • Log book

PRACTICAL TRAINING

This includes:-

- History taking
- Clinical examination
- Detail laboratory investigations
- Pre-op, post-opp and operation theatre work
- Attending the out patients department
- Follow up of patients
- Rehabilitation

AIMS OF TRAINING

Post Graduate Training program is fulltime & Residential and the candidate will perform 32 hours duty at stretch and then 16 hours off.

The duration of **MS Burns and Reconstructive Surgery** course shall be 6 years, can be divided in two half's. First half comprises of first two years and at the end student shall appear in MTA exam. Second half consists of $3^{rd} 4^{th} 5^{th and} 6th$ year. After that student shall appear in part 2 exam.

First part is structured for first 2 calendar years, candidate shall undertake training in basic medical sciences, behavioral sciences, biostatistics and research methodology. Candidate shale also undertakes clinical training in fundamental basic surgical concepts. He shall also get training in acute burn care and intensive care of burn patient in burn center ICU.

Second part of training consists of 3rd 4th 5^{th and} 6th year in burn Reconstructive surgery training. Along with compulsory rotations in relevant field, candidate will spend total time equivalent to one year in research.

Module	Course Title	Duration
	YEAR -1	III WCCK5
M1-BS	Lectures in Basic Sciences - Anatomy Regional and Applied - Applied Physiology - Surgical Pathology including Bacteriology and Parasitology - Common Lectures to M.S Students - Medicine, Surgery, Pathology & Pharmacology	4
M2-BS	 Lectures in Burns Surgery (Acute Burn Care) History of Treatment of Burns Teamwork for total Burn Care: Achievement, Directions and Hopes Epidemiological, Demographic and Outcome characteristics of Burn Injury Prevention of Burn Injuries Burn Management in Disaster and Humanitarian crises Care of Out Patients Burn Pre-Hospital Management, Transportation and Emergency Care Pathology of Burn Shock and Burn Edema Fluid Resuscitation and Early Management 	6
M3-BS	Burn Wounds Management - Evaluation of the Burn Wound: Management Decisions - Wound Care - Treatment of Infection in Burns - Operative Wound Management - Anaesthesia for Burned Patients - The Skin Bank	6

LEARNING OBJECTIVES

	- Alternative Wound Covering s	
	- AlloDerm	
M4-BS	Inhalation Burns	6
	- The Pathophysiology if Inhalation Injury	
	- Diagnosis and Treatment of Inhalation Injury	
	- Barotruama	
	- Respiratory Care	
	- The Systemic Inflammatory Response Syndrome	
	- The Immunological and Strategies for Intervention	
M5-BS	Pathophysiology of Burns	4
	- Hematologic, Hematopoietic and Acute Responses	
	- Significance of the Adrenal and Sympathetic Response to Burn Injury	
	- The Hepatic Response to a Thermal Injury	
	- Effects of Burn Injury on Bone and Mineral metabolism	
M6-BS	Nutrition in Burns	5
	- Vitamin and Trace Element Homeostasis Following Severe Burn	
	Injury	
	- Hypophosphatemia	
	- Nutritional Support of the Burned Patients	
M7-BS	MOSF in Burns	6
	- Modulation of the Hypermetacbolic Response after Burn Injury	
	- Etiology and prevention of Multisystem Organic Failure	
	- Renal Failure in Association with Thermal Injuries	
	- Critical Care in the Severely Burned: Organ Support and Management	
	of Complications	
	- Burn Nursing	
M8-BS	Burns in Extreme Ages	3
	- The Pediatric Burned Patients	
	- Care of Geriatric Patients	
	- Surgical Management of Complications of Burn Injury	
M9-BS	Electrical Burns	6
	- Electrical Injuries	
	- Electrical Injury: Reconstructive Problems	
	- Cold-Induced Injury	
	- Chemical Burns	
	- Radiation Injuries, Vesicant Burns and Mass Casualties	
	YEAR-2	
M10-	Burns Problems	Δ
BS	- Exfoliative and Necrotizing Diseases if the Skin	-
	- The Burn Problem: A Pathologist's Perspective	
	- Wound Healing	
	- Molecular and Cellular basis of Hypertrophic Scarring	
	- Pathophysiology of the Burn Scar	
M11-	Rehabilitation	5
BS	- Comprehensive Rehabilitation of the Burn Patient	5
	- Musculoskeletal Changes Secondary to Thermal Burns	
	- Mitigation of the Burn-Induced Hypermetabolic Response During	
	Convalescence	

M12-	Burns Reconstruction	6
BS	- Overview of Burn Reconstruction	
	- Reconstruction of the Burned Hand	
	- Reconstruction of the Head and Neck	
	- Reconstruction of the Burned Scalp Using Tissue Expansion	
M13-	Burns Contractures	6
BS	- Management of Contractural Deformities Involving the Axilla	
	(Shoulder), Elbow, Hip, Knee and Ankle Joints in Burn Patients	
	- Reconstruction of Burned Breast	
	- Management of Burn Injuries of the Perineum	
	- Reconstruction of the Burn Deformities if the Foot and Ankle	
M14-	Ethical Dimension	4
BS	- The Ethical Dimension of Burn Care	
	- Maltreatment by Burning	
	- Functional Sequelae and Disability Assessment	
	- Cost-Containment and Outcome Measures	
M15-	Pain Management	5
BS	- Management of Pain and Other Discomforts in Burned Patients	
	- Psychiatric Disorders	
	- Psychosocial Recovery and Reintegration of Patient with Burn Injuries	
M16-	Lectures in General Surgery	8
BS	- Principal of Clinical Surgery	
	- Radiological techniques for diagnosis of surgical disorders to their	
	clinical application	
	- Principal of operative surgery	
	- Burns and Plastic surgery	
	- Diseases of lymphatic's and lymph nodes	
	- Diseases of Blood Vessels	
	- Trauma-general and Regional aspects	
	- Amputations	
	- Complications in Surgery	
	- Diseases of hand and foot	
	- Facio maxillary problems	
M17-	Lectures in Special Surgery	4
BS	- Diseases of Salivary Glands	
	- Diseases of Breast	
	- Diseases of Endocrine Glands	
	- Diseases of Chest, Lung and Pleura	
	- Diseases of Abdomen & Alimentary Tract	
	- Diseases	
M18-	Lectures in Allied Surgery	4
BS	- Orthopedic diseases	
	- Neurosurgical diseases	
	- Pediatric surgical problems	
	- Urology	
	YEAR-3	
	Professional education in burn reconstructive surgery	
	• Training in burn reconstructive surgery during 3 rd year	

Formal Teaching per week = 4 hours	
i.e 1 hour per day x 4 days a week	
This will comprise of:-	
Clinico-Pathological Conference, Clinico-Radiological Conference, Grand	
Round, Journal Club and Death Review Meeting	
YEAR-4	

Acute and intensive care in burn ICU during 1ST AND 2ND Year of training (compulsory) Professional education in burn reconstructive surgery

- Training in burn reconstructive surgery during 3rd 4th 5th and 6th year
- 4 years of training with compulsory and optional rotations in relevant fields

EXEMPTION OF TRAINING FOR MD/MS/MDS

- 1. A candidate already registered with CPSP in FCPS program will not be simultaneously inducted/ registered in MD/MS/MDS program as per PM&DC Postgraduate Regulations 2011.
- 2. Candidates who have passed FRCS/MRCP/American Boards/MD/MS/FCPS or equivalent examination will be considered for relaxation in training programme or examination as per following scenario.

Scenario	Exemption	Additional Requirement
	Recommended	
Holder of FCPS/ MRCP/	- $2-3$ years of training.	- 2 years training.
FRCS/ Diplomat American		
Board or equivalent	- Mid Term Assessment	- Thesis
qualification as recognized by	(MTA)	
PMDC in the same Specialty.	Part-II	- Final Examination including
	-Mandatory Workshops	written & Clinical.
Holder of FCPS/ MD/MS /	- Two years training.	- 2-3 years of training.
MDS/ FRCS/ MRCP or		- Thesis
Equivalent qualification in	- Mid Term Assessment	- Final examination written &
General Medicine/General	(MTA).	Viva voce, short and long cases
Surgery and want admission	Part-II	ACTS (OSCE). Including written
in MD/ MS/ MDS in allied	-Mandatory Workshops	&Clinical.
sub-specialty.		
Holder of Diploma / MCPS	One year training	3-5 years training
(level II b) in same specialty	Mandatory Workshop	Thesis
		Final examination written & Viva
		voce, short and long cases ACTS
		(OSCE). Including written &
		Clinical.

Any other subject with the approval of Advanced Studies and Research Board.

ENTRY CRITERIA & QUALIFICATION FRAME WORK AND DEGREE AWARDING

The frame work helps to provide public assurance that qualification bearing these qualifications suitable for academic Practioners. The candidates enter in these programs after completing 19 years of Education (F.Sc., 12 Years), M.B.B.S. (05 years), 02 Years recognized experience (01 years House Job and 01 year resident experience), and achieve attending outcome for the programs in minimum period of six years. These clinical and research degrees are equivalent to Ph.D. program and in addition undergo professional training as well. Degree awarding after successful completion of the course will reflect specialty i.e. **MS Burn Surgery and reconstructive Surgery.**

SUBJECT OF SPECIALIZATION

- MS (Surgery & Allied Subjects)
 - XXIV MS Burns & reconstructive Surgery

SUPERVISOR, SYNOPSIS AND THESIS TITLE

- The topic of thesis shall be selected by the student in a particular specialty with the approval of the supervisor and Ethical Review Board as well. Synopsis of the Thesis will be submitted within one year of registration, which has to be approved by Supervisor & AS&RB of the University.
- The synopsis is a brief out line (about four A-4 size pages or 1000 words is the maximum limit) of your future work.
- The Research Board shall appoint a supervisor (and a co-supervisor, if necessary) from the relevant field of specialization and approved the field of research/ title on the recommendations of the Institute concerned.
- The Supervisor (and a co-supervisor, if necessary) shall be a Professor/Associate Professor having the qualifications of MD/ MDS/MS/ Ph.D/ FCPS/ FRCS/ MRCP/ MRCOG /M.Phil, (old courses of four years) or any other equivalent terminal qualification with five years' experience in the relevant field and Asstt. Professor with five years teaching experience shall stand eligible to become supervisor of the programme.
- Number of candidate in each department.

The Professor / head of the department/ unit can have upto two trainees per year and Associate Professor will have one per year.

i. From the date of registration, and the maximum period shall be six years for submission of thesis. Only under exceptional circumstances, to be described in detail by the candidate and supported by the supervisor, the Research Board may allow extension of one year beyond seven years. The candidate shall appear in final examination within eight year of his/her registration.

ii. The training will be full time and residential.

REWARD FOR SUPERVISOR.

Psychological satisfaction and of giving Education to the candidate. Opportunity to promote sciences and research in the field of interest.

NUMBER OF CANDIDATE IN EACH DEPARTMENT

As approved by PMDC

The Professor / head of department / unit can have upto two trainees per year and Associate Professor will have one per year.

LONGITUDINAL EVALUATION (LOGBOOK, ASSIGNMENTS, ASSESSMENTS)

- a) Throughout the length of the course the performance of the candidate will be recorded on the log book. The log book will reflect the performance of the candidate in the following parameters:
 - a. Record of competence of technical skills.
 - b. Record of the assignments.
 - c. Record of affective and interpersonal behaviors.
 - d. Record of Journal clubs, conferences and lectures attended.

These will be developed by concerned Institute/ Centre/ College, and submitted to university at the end of training by the candidate.

MANDATORY WORKSHOPS

During training candidate will attend the following mandatory workshops:

- i. Communication skills.
- ii. Research methodology, Biostatics & Medical writing
- iii. Computer and internet skills.
- iv. Basic Life Support
- v. Surgical skills (For Surgery & allied disciplines)

Candidate will submit copy of certificate of attendance of above mentioned workshops to the University.

<u>MID TERM ASSESSMENT (MTA)</u>:

The Mid Term Assessment (MTA) examination is mandatory eligibility requirement for all Postgraduate Final examination. Candidates are required to complete two years training in respective specialties, get approval of their Synopsis from AS&RB and take the MTA Examination.

In case of failure in the MTA examination, the trainees are permitted to continue their training in the chosen specialty but must pass the MTA examination prior to appear in the final examination.

Required Documents for Appearing in MTA Examination

- 1. Copy of CNIC/ Passport (foreigners only).
- 2. Copy of MBBS/BDS Degree.
- 3. Copy of PMDC valid registration.
- 4. Copy of registration card issued by the registrar office
- 5. Copy of workshop certificates
- 6. Copy of Letter stating completion of two years satisfactory training with the Registrar Office duly signed by the supervisor.
- 7. Letters of Synopsis Approval issued by Meeting Section.
- 8. 4 passport size attested photographs

All these documents must be attested from any faculty member.

FORMAT OF EXAMINATION:

MTA Examination consists of the following components:

	ASSESSMENT	
Written	Paper:100 One Best MCQs (100 Marks) Part-A: 50% MCQs from General Principles Part-B: 50% MCQs from Specialty Oriented	Pass Marks 60% Aggregate and Not Less than 55% in any Part(A Or B)

At the end of second year, Mid Term Assessment will be conducted by concerned university. It will include two written papers as under:-

MS Burns Surgery MTA

- Principal of Surgery 50 MCQs Paper-I **Paper-II**
 - Specialty concerned 50 MCQs

Three chances will be given to each candidate at the six monthly intervals. In case of three consecutive failures, the candidate will be removed from training.

THESIS

The thesis submitted by all post graduate residents shall comply with the following conditions:

- i. It shall form a distinct contribution to knowledge and afford evidence of originality, shown by the discovery of new facts, by the exercise of independent critical judgment and / or by the invention of new methods of investigation.
- ii. It shall not include research work for which a degree has already been conferred in this or any other university/college.
- iii. It shall be written in English and the presentation must be satisfactory for publication.
- iv. Any part of the thesis which has been published before submission of the thesis may be appended at the end of the thesis.
- v. The thesis shall be typed on A4 size (11.69"x8.27") paper with margins of 1-1/2" on the left and 1" to the right, top and bottom of each page. The thesis shall be hard bound with the black cloth cover and golden lettering on the front and the back.

THESIS EVALUATION

- (i) There shall be a standing list of external examiners for each discipline consisting of persons of eminence in the respective field of research. The list shall be suggested from time to time by the Board of Studies of the department/ institute, Board of faculty concerned and approved by the Research Board. The external examiners will be requested to critically examine the thesis for its suitability for acceptance.
- (ii) The candidate shall in the first instance submit four unbound copies of his/her complete thesis along with an application on prescribed form for the evaluation of his/ her thesis, duly forwarded by his/her supervisor and the Dean/ Principal/ Director of the institute/ department, along with prescribed Thesis Evaluation fee. The university will pay to each evaluator for the thesis evaluation.
- (iii) The Vice Chancellor shall appoint three external examiners from the approved list of external examiners.
- (iv) The reports of the examiners shall be placed before the Research Board for consideration.
- (v) If two of the three examiners find that the thesis is wholly inadequate it may

be rejected by the Research Board.

- (v) If any of the examiners suggests modification/ revision of the thesis, the candidate shall be required to resubmit a revised version of the thesis duly certified by the supervisor, within one year.
- (vii) The revised version of the thesis shall be approved by the same examiners (s) who suggested modification/ revision of the thesis.
- (viii) If any examiner finds the thesis adequate but suggests minor modification/ revision, this may be incorporated without referring again to the examiners as required in clause (i).
- (x) The candidate will submit the research thesis in final year of training six months before completion of the training.

THESIS EVALUATION CRITERIA FOR AS & RB

In pursuance of recommendations of Academic Council meeting decision were taken about thesis evaluation of MS/MD/MDS/M.PHIL thesis. Three (03) copies of thesis send to three (03) external examiners for evaluation (28th February for Aug/Sep exam & 31st August for Mar/Apr Exam). Consideration of thesis evaluation reports in respect of MS/MD/MDS/M.PHIL Postgraduate Students. Board's decision for thesis evaluation.

- i. If three examiners accepted thesis as minor/present/accepted form thesis should be sent to the Advanced Studies & Research Boards (AS & RB) committee for further necessary action.
- ii. In case of two external examiner accepted thesis as minor/present/accepted form and third examiner reject the thesis. (All thesis report should be rejected) student must rewrite thesis.
- iii. In case of two minor and one major correction students will resubmitted the thesis after three months.
- iv. Time required for Thesis evaluation is one year.
- v. Defense of thesis can be done after completing all pre requisites and over declared successful

X. FINAL EXAMINATION

1. MD/MS/MDS FINAL EXAMINATION

> ELIGIBILITY FOR MD/MS/MDS/ Final EXAMINATION:

The eligibility requirements for candidates appearing in MD/MS/MDS Final Examination are:

- 1. To have passed MD/MS/MDS Part-I in respective Discipline, or been granted official exemption.
- 2. To have undertaken of the specified training in Respective Specialty, all of which should be after passing Part-I (a certificate testifying attendance is obligatory for admittance to examination) in an institution affiliated with SZABMU
- 3. To provide a certificate of attendance of mandatory workshops.
- 4. To submit a completed and duly signed logbook from respective supervisor.
- 5. To provide a certificate of having passed the MTA Examination.
- 6. To provide a certificate of approval of Thesis

> REQUIRED DOCUMENTS FOR APPEARING IN FINAL EXAMINATION

- 1. Copy of CNIC/Passport
- 2. Copy of MBBS/BDS Degree
- 3. Copy of PMDC valid registration
- 4. Copy of registration card issued by the registrar office
- 5. Copy of Certificate of completion of required training issued by the registrar office duly signed by the supervisor.
- 6. Pass Certificate of Mid Term Assessment (MTA)
- 7. Copy of Certificate of approval of thesis issued by the meeting section.
- 8. LOG Book duly signed by the concerned supervisor.
- 9. 4 passport size attested photographs
- 10. Attested copies of mandatory workshop certificates.

All these documents must be attested from faculty member.

> FORMATIVE ASSESSMENT

i. THEORY EXAMINATION:

The written examination will comprise of two theory papers of 3 hours duration each:

Paper I:	100 One Best type of MCQs	100 Marks
Paper II:	100 One Best type of MCQs	100 Marks

A candidate of MS/MD/MDS/M.Phil/M.Sc final examination can avail three consecutive clinical examinations after passing a final theory examination of his own discipline same is applicable for TOACS. A candidate availing/missed all the three consecutive chances of clinical examination after passing a theory examination, he should have to appear again in the theory examination

CLINICAL EXAMINATION i.

Only those candidates who pass the theory examination will be eligible to appear in the clinical examination. The Clinical Examination consists of

- ACTS/TOACS/OSEC 8 10 Stations, minimum 60% Interactive 1. 100 Marks 2.
 - 100 Marks Long Case: One Long case (Duration 50 Minutes)
- 3. Short Cases: 04 Short Case (Duration 40 Minutes 10Minutes each) 100 Marks 100 Marks
- 4. Defense of Thesis (Duration 20 Minutes)

Standard Settings / Pass Scores Cutoff		
% Pass	60% Overall	
% Pass in Written	60% Aggregate and Not Less than 55% in any Paper	
Long Case / Short Cases	60% Aggregate and Not Less than 55% in anyone (long case/short cases)	
ACTS/TOACS/OSCE	Pass 60%	
Thesis	Pass 60%	

RESULT DECLARATION AND AWARDING **CERTIFICATES/DIPLOMA/DEGREE:**

- ✤ The result will be announced immediately after the examination.
- ✤ Congratulation letters will issued within one week.
- Transcript / DMC will be issued within one month of result declaration.
- Degree / Diploma will be awarded in the convocation.

FACULTY

INTERNAL:

Ministry of Health has already approved following 02 faculty posts to start this teaching program and also published their separate recruitment rules:

- 1. Professor of Burn Surgery (BS-20)
- 2. Associate Professor of Burn Surgery (BS-19)
- 3. Assistant Professor of Burn Surgery (BS-18)

Following Surgeons are working on these posts:

- 1. Prof. Dr Tariq Iqbal FRCS, FCPS, FACS Professor of Burns Surgery
- 2. Dr Muhammad Saaiq FCPS(Gen.Surgery), FCPS(Plastic Surgery) Assistant Professor of Burns Surgery

Associated internal faculty:

- 1. Professor Imran Sikandar Head of Anesthesia Department PIMS
- 2. Professor Nadeem Akhtar Head of Pediatric Surgery PIMS

EXTERNAL:

The following consultants, who are actively involved in acute burn care, will be available to assist this teaching program:

- Professor Saleem Akhtar Malik Diplomat American Board of Surgery Professor Emeritus for Burn Care Center PIMS Ibd
- 2. Professor Mughese Amin Professor of Plastic & Burns Surgery Victoria Hospital Bahalwalpur.
- 3. Prof Mustahsan Bashir Professor of Plastic & Burns Surgery Mayo Hospital Lahore.

- 4. Prof Tahir Khan Professor of Plastic & Burns Surgery Peshawar.
- Professor Hamid Hassan FRCS Former Head of Surgery, BBH Hospital Rawalpindi
- Professor Moazam Tarar FRCS, FCPS Former Head of Jinnah Hospital Burn Center Lahore
- Dr Rafi Fakhand FRCS Former Assistant Professor / Head of Burn Center HFH Rawalpindi.
- Dr Fahim Abidi FRCS Former Head of Burn Center NESCOM Islamabad
- Dr Ali Sharik FRCS Former Head of Burn Center Civil Hospital Karachi.
- Gen. Shahid Hamid FRCS, FCPS Former Head of Burn Center Kharian

PROGRAM DIRECTOR

PROF. DR. TARIQ IQBAL

Professor of Burns & Reconstructive Surgery Burns Care Centre PIMS SZAB Medical University Islamabad

BOOKS & JOURNALS

BOOKS:-

S.No	Book Title	Author	Edition	Year
1.	Total Burn Care	David.N.Hernden	5th	2018
		M.D FACS		
2.	Plastic and burn reconstructive surgery of	Viktor		2021
	burns	M.Grishkevich		
		Max Grishkevich		
3.	Color atlas of burn reconstructive surgery	Hiko Hyakusoku		2021
		Denis P.Orgill		
4.	Burn Reconstruction	Bruce M.Achauer		2006
5.	Burn Trauma	Robert H.Demling	VOL-4	1989
6.	Head & Neck Surgery	Maran's & Stell	4 th	2000
7.	Indication, Operations and Outcomes	Bruce.M.Achaur		2000
8.	Planning and Designing A Burn Care	Irving Feller M.D		2002
	Facility			
9.	Emergency Surgery	Baileys, Hamilton	13 th	2006

JOURNALS:-

S.No	Name of Journal
1.	JSM Burns and Trauma
2.	Burn's journal of International Society for Burns Injuries
3.	Burn Care & Research by American Burn Association
4.	Journal of American Society of Plastic & burn Reconstructive Surgery
5.	Indian Journal of Burn Surgery
6.	The Canadian Journal of Plastic Surgery
7.	Srilankan Journal of Burn Surgery
8.	All associated Journals available online

<u>COURSE CONTENT OUTLINE</u> (MS BURNS AND RECONSTRUCTIVE SURGERY) BASIC MEDICAL SCIENCES: FOR 1ST AND 2ND YEAR

Student appearing in MTA MS burns and plastic surgery is expected to acquire comprehensive

knowledge of Anatomy, Physiology, Pathology, Microbiology, Biochemistry, pharmacology

relevant to surgical practice appropriate for Burns and plastic surgery.

- ✓ Anatomy regional and applied
- ✓ Applied physiology
- ✓ Biochemistry
- ✓ Pharmacology
- ✓ Surgical pathology including bacteriology and parasitology
- ✓ Biostatistics and research methodology
- ✓ Behavioral sciences

1. ANATOMY

- Detailed Anatomy of the organ systems of body, their blood supply, nerve supply, lymphatic drainage and important gross relations to other organs as appropriate for surgical operations.
- Developmental Anatomy and associated common congenital abnormalities.
- Features of Surface, Imaging and Applied Anatomy within each organ system.
- Relate knowledge to assessment of clinical situation or progress of disease condition

CARDIOVASCULAR:

- Embryogenesis of heart and major vessels, and formation of the lymphatic system.
- Common anatomical variations of heart chambers, valves and major vessels.
- Surgical anatomy of heart and major arteries + veins in thorax, neck, abdomen and groins.

RESPIRATORY:

- Embryogenesis of trachea and bronchial tree
- Lung development
- Development and defects of diaphragm
- Common anatomical variations of respiratory tree and lungs to include vascular anomalies
- Surgical anatomy of pleura, lung and trachea and bronchial tree

GASTROINTESTINAL TRACT AND ABDOMINAL WALL:

- Embryogenesis of the GIT to include formation of the solid organs, anorectum, and abdominal wall
- Common anatomical variations in the formation of the GIT and abdominal wall
- Surgical anatomy of the GIT and its relations to other systems

RENAL:

- Embryogenesis of the upper and lower renal tract to include male and female genital development
- Common anatomical variations of the renal tract and genitalia
- Surgical anatomy of the renal tract, and associated genital structures to include relationships to other systems

NEUROLOGICAL:

- Embryogenesis of the brain and spinal cord, and of the supporting structures (skull, vertebral column)
- Common anatomical variations of the brain and spinal cord
- Surgical anatomy of the brain, spinal cord and major somatic nerves (to include relationships to other systems)

MUSCULO SKELETAL:

- Embryogenesis of the skeleton and muscle development
- Common anatomical variations of skeleton
- Surgical anatomy of skeleton where relevant to other systems

ENDOCRINE:

Development, defects and surgical anatomy of endocrine organs

2. PHYSIOLOGY

- Cellular organization, structure function correlations and physiological alterations in the organ systems of body
- Relate knowledge to assessment of clinical situation or progress of disease condition

FLUID BALANCE:

- Basic requirements of fluid and electrolytes at different ages
- Mechanisms of homeostasis
- Influence of disease states
 - o Renal
 - o Cardiac
 - \circ Gastrointestinal
 - o Trauma
- Mechanisms of homeostasis
- Abnormalities encountered in disease

ACID-BASE BALANCE:

- Basic requirements of fluid and electrolytes at different ages
- Mechanisms of homeostasis
- Influence of disease states

OXYGEN TRANSPORT:

- Airway function in health and disease
- Alveolar function and gas exchange
- Effect of disease
 - o R.D.S.
 - Infection
 - o Barotrauma
 - o Prematurity
- Effect of foetal circulation

GASTROINTESTINAL TRACT:

- Motility of different regions of gut
- Secretion and absorption
- Function of sphincter regions
 - G.O. junction

- Pylorus
- Ileocaecal region
- o Anorectum
- Defecation and continence

HEPATOBILIARY FUNCTION AND PANCREATIC FUNCTION:

- Metabolic and synthetic hepatic function
- Bile production and transport
- Exocrine pancreatic function
- Effect of disease on normal function

RENAL TRACT:

- Renal mechanisms for maintenance of homeostasis
- Effect of disease
- Bladder function and continence
- Transitional renal physiology in neonate and young child

GROWTH AND METABOLISM:

- Nutritional requirements at different ages
- Endocrine factors influencing growth
 - o Thyroid
 - Pituitary
 - Pancreatic
 - o Adrenal
 - o Gonadal
- Effect of disease states including
 - o Chronic disease
 - o Trauma
 - Response to operation
- Influence and use of parenteral and enteral feeding

AUTONOMIC NERVOUS SYSTEM:

- Differing effects of sympathetic and parasympathetic innervations
- Effects on differing physiological processes

3. BIOCHEMISTRY

• Membrane biochemistry and signal transduction

- Gene expression and the synthesis of proteins
- Bioenergetics; fuel oxidation and the generation of ATP
- Carbohydrate metabolism
- Lipid metabolism
- Nitrogen metabolism
- Enzymes and biologic catalysis
- Curriculum/Statutes & Regulations-MS Plastic Surgery 24 Tissue metabolism
- Biotechnology and concepts of molecular biology with special emphasis on use of recombinant DNA techniques in medicine and the molecular biology of cancer

4. PHARMACOLOGY

- The Evolution of Medical Drugs
- British Pharmacopeia
- Introduction to Pharmacology
- Receptors
- Mechanisms of Drug Action
- Pharmacokinetics
- Pharmacokinetic Process
- Absorption
- Distribution
- Metabolism
- Desired Plasma Concentration
- Volume of Distribution
- Elimination
- Elimination rate constant and half-life
- Creatinine Clearance
- Drug Effect
- Beneficial Responses
- Harmful Responses
- Allergic Responses
- Drug Dependence, Addiction, Abuse and Tolerance
- Drug Interactions
- Dialysis
- Drug use in pregnancy and in children

5. PATHOLOGY

Pathological alterations at cellular and structural level

- Inflammation
- Wound healing
- Cellular injury
- Vascular disorders
- Disorders of growth, differentiation and morphogenesis
- Tumours
- Surgical immunology
- Surgical haematology

Microbiology:

- Surgically important microorganisms
- Sources of infection
- Asepsis and antisepsis
- Sterilization
- Antibiotics
- High risk patient management

6. BIOSTATISTICS & RESEARCH METHODOLOGY

- Introduction to Bio-Statistics
- Introduction to Bio- Medical Research
- Why research is important?
- What research to do?
- Selecting a Field for Research
- Drivers for Health Research
- Participation in National and International Research
- Participation in Pharmaceutical Company Research
- Where do research ideas come from
- Criteria for a good research topic
- Ethics in Health Research
- Writing a Scientific Paper
- Making a Scientific Presentation
- Searching the Literature

7. BEHAVIOURAL SCIENCES

- Bio-psycho-social (BPS) model of health care
- Use of non-medicinal interventions in clinical practice
- Communication skills

- Counselling
- Informational skills
- Crisis intervention/disaster management
- Conflict resolution
- Breaking bad news
- Medical ethics, professionalism and doctor-patient relationship
- Hippocratic oath
- Four pillars of medical ethics (autonomy, beneficence, non-maleficence and justice)
- Informed consent and confidentiality
- Ethical dilemmas in a doctor's life
- Delivery of culturally relevant care and cultural sensitivity
- Psychological aspects of health and disease
- Psychological aspect of health
- Psychological aspect of disease
- Stress and its management
- Psychological aspect of pain
- Psychological aspect of aging

GENERAL SURGERY:

PRINCIPLES

- The metabolic response to injury
- Shock and blood transfusion
- Wounds, tissue repair and scars
- Surgical infections
- Surgery in tropics
- Principles of pediatric surgery
- Principles of oncology
- Surgical audit and research
- Surgical ethics

ANTIBIOTICS PROPHYLAXIS INVESTIGATION AND DIAGNOSIS

- Diagnostic imaging
- Gastrointestinal endoscopy
- Tissue diagnosis

WOUND CARE ORGAN TRANSPLANTATION TRAUMA

- Introduction to trauma
- Early assessment and management of trauma

- Head injury
- Neck and spine injury
- Trauma to the face and mouth
- Chest and abdomen
- Extremity trauma
- Burns
- Plastic and reconstructive surgery
- Disaster surgery

PERIOPERATIVE CARE

- Preoperative preparation
- Anesthesia and pain relief
- Care in the operating room
- Perioperative management of high risk surgical patient
- Nutrition and fluid therapy
- Basic surgical skills and anastomosis
- Principals of laparoscopic and robotic surgery
- Post-operative care

COURSE CONTENT OUTLINE FOR 3RD 4TH 5TH 6TH YEAR <u>BURNS SURGERY</u> BURNS SURGERY LECTURES (TOTAL BURN CARE):

History of acute burn care management Teamwork for total burn care (multidisciplinary burn team) Epidemiology, Demography and outcome characteristics of burn injury Prevention of burn injuries Burn management in disasters and humanitarian crises Care of outpatient's burn Pre hospital management, transportation and emergency Pathophysiology of burn shock and burn edema Fluid resuscitation and early management **BURN WOUNDS MANAGEMENT:** Evaluation of burn wound management and decision Burn wound care

Infections in burns and treatment

Operative wound management

Anesthesia for burned patients

The skin bank

Skin substitute and the next level

INHALATION INJURY:

Pathophysiology of inhalation injury Diagnosis treatment of inhalation injury Barotrauma Respiratory care The systemic inflammation response syndrome Host defense antibacterial effector cells influenced by massive burns

PATHOPHYSIOLOGY OF BURNS:

Biomarkers in burn patients

Hematological, hemostasis, thrombo prophylaxis and transfusion medicine Significance of hormonal, adrenal and sympathetic response to burn injury

Hepatic response to thermal injury

Effects of burn injury on bone and mineral metabolism

NUTRITION IN BURNS:

Vitamins and trace element homeostasis following severe burns Hypophosphatemia Nutritional support of burn patients

MOSF IN BURNS:

Modulation of the hyper metabolic responses after burn injury Etiology and prevention of multi systemic organ failure Renal failure in association with thermal injury Critical care in the severely burned: organ support and management of complications

BURN NURSING

BURNS IN EXTREME AGE:

The Pediatric burn patient Care of Geriatric patients Care of burned pregnant patient Surgical management of complications of burn injury

OTHER BURNS:

Electric injuries Electric injury reconstructive problems Cold induced injuries Chemical burns Radiation injuries, vesicant burns Exfoliated and necrotizing skin disease Burn injury of eye

BURN PROBLEMS:

The pathologist perspective Wound healing Molecular and cellular basis of hypertrophic scars Pathophysiology of burn scar

REHABILITATION:

Burn rehabilitation Musculoskeletal changes secondary to thermal injury Mitigation of the burn induced hyper metabolic response during convalescence

BURNS RECONSTRUCTION:

Overview of burn reconstruction Reconstruction of head and neck Management of post burn alopecia Deformity face, scalp and reconstruction, and use of tissue expansion

BURNS CONTRACTURES:

Management of contractual deformities involving axilla, shoulder, elbow, hip, knee and ankle joints in burn patients Acute care and reconstructive surgery of hand Management of burn injury of premium Reconstruction of burned breast Reconstructive surgery of lower extremity

ETHICAL DIMENSIONS:

The ethical dimensions of burn care Maltreatment Functional squeal and disability assessment Coast containment and outcome measures LASER FOR BURN SCAR TREATMENT Pain management

Aesthetic reconstruction overview Psychiatric disorders associated with burns Psychological recovery and regeneration of patient with burns

GENERAL TOPICS IN BURN SURGERY

- General Principals of Burn surgery
- Mechanism of healing of tissue and factors affecting the Wound healing.
- Wound healing, wound care, dressings and splints
- Tissue loss, distortion and its management
- Plastic surgery instruments and equipment's
- Tissue expansion and tissue distraction
- Advances, recent advances and current trends in burn surgery
- Principals of surgical audit understanding journal and review articles, text books and reference books, critical assessment of articles
- Research methodology and biostatistics
- Escharotomy
- Grafts
- Flaps

GRAFTS

- Classification
 - Auto graft
 - Allo graft
 - Xenograft
- Skin graft
 - Split thickness skin graft(STSG)
 - Full thickness skin grafts(Wolfe grafts)
 - Composite grafts
- Nerve grafts
- Tendon grafts

FLAPS

- Classification of flaps
 - According to blood supply
 - Advancement flaps
 - Rotational flaps
 - Trans positional flaps
 - Z Plasties
- According to distance
 - Local flaps
 - Distant flaps (axial flaps, free flaps)
- According to tissue type
 - \circ Skin flap

- Muscle flaps
- Composite flaps

COMMON SURGICAL SKILLS

- Incision of skin and subcutaneous tissue
 - Ability to use scalpel, diathermy and scissors
 - Langer's lines
 - Healing mechanism
 - Choice of instruments
 - Safe practice
- Closure of skin and subcutaneous tissue
 - Accurate and tension free apposition of wound edges
 - Options of closure
 - Suture and needle choice
 - Safe practice
- Surgical scrubbing
- Gowning and gloving for surgery
- Skin preparation
- Knot typing
 - Choice of material
 - Single handed
 - Double handed
 - o Superficial
 - o Deep
- Wound management
- Tissue retraction
 - Choice of instruments
 - Placement of wound retractors
 - Tissue forceps
- Use of drains
 - Indications
 - o Types
 - Insertion
 - Fixation
 - Management
 - o Removal
- Hemostatic at wound site
 - Control of bleeding vessels(superficial)
 - Diathermy
 - Suture ligation

- Tie ligation
- Clip application
- Plan investigations
- Clinical decision making
- o Case work up and evaluation , risk management
- Pre-operative care
 - Diabetes mellitus
 - Renal failure
 - Pathophysiology of blood loss
 - Pathophysiology of sepsis
 - Risk factors of surgery
 - Principal of day surgery
 - Management of co morbidity
- Intraoperative care
 - Safety in theatre
 - Sharps safety
 - Diathermy and laser use
 - Infection risk
 - Radiation use and risk
 - Tourniquets
 - o Principal of local, regional and general anesthesia
- Post-operative care of patient
 - Monitoring of post-operative patient
 - Postoperative analgesia
 - Fluid and electrolyte management
 - Detection of impending organ failure
 - Initial management of organ failure
 - Complications specific to particular operation
 - Critical care
- Blood products
 - Components of blood
 - Alternatives to use of blood products
 - Management of the complications of blood product transfusion including children
- Tetanus prophylaxis
- Antibiotics
 - Common pathogens in surgical patients
 - o Antibiotic sensitivity
 - Antibiotics side effects
 - Principals of prophylaxis and treatment
- Assessment of multi trauma patient

- History and examination
- \circ Investigation
- o Resuscitation and early management
- Referral to appropriate surgical specialty
- Practical sutures techniques and suture materials
- Management of cellulitis and abscess

SURGICAL SEPSIS

• Drainage of superficial abscesses

SURGERY OF THE SKIN & INTEGUMENT

- Excision of skin lesions
- Split and full thickness skin grafting

VASCULAR SURGERY

- Vascular suture/anastomosis
- Control of venous bleeding
- Amputations of the lower limb
- Fasciotomy

OTHERS

- Skin and skeletal traction
- Open fracture debridement
- Nerve repair
- Flexor and extensor tendon repair

MS BURNS AND RECONSTRUCTIVE SURGERY EXAMINATIONS

MTA EXAMINATION

All candidates admitted in MS BURNS AND PLASTIC SURGERY shall appear in MTA examination after completing two years of training.

Topics included in papers A and B:

Principles of General surgery Burns and Reconstructive Surgery

Paper A: 50 MCQ (SINGLE BEST TYPE)

(Principle of Surgery for Surgery and Allied Disciplines)

50 MARKS

Topics

•	Infections-types and treatment	10 MCQS
•	Antibiotic prophylaxis	10MCQS
•	Wound care	10MCQS
•	Organ transplantation	10MCQS
•	Trauma	20 MCQS
•	Blood transfusion, fluid	10MCQS
•	Electrolytes	10MCQS
•	Burns	10MCQS
•	Perioperative care	10MCQS

Paper B: 50 MCQ (SINGLE BEST TYPE)

(Burns and Reconstructive Surgery)

50 MARKS

Topics

•	EMERGENCY CARE OF BURN INJURY (ALL BURN TYPES)	10 MCQS
•	BURN WOUND HEALING	5 MCQS
•	BURN SHOCK AND BURN EDEMA	5 MCQS
•	FLUID RESUCITATION	10 MCQS
•	PATHOPHYSIOLOGY OF BURNS	10 MCQS
•	INHALATION INJURY	5 MCQS
•	MOSF IN BURN	10 MCQS
•	ELECTRIC BURN	5 MCOS

PART 2 EXAMINATION

MS BURNS AND RECONSTRUCTIVE SURGERY EXAMINATIONS

All candidates admitted in MS Burns and Reconstructive Surgery shall appear in Part 2 examination at the end of structured training programmer (end of 6^{th} calendar year and after clearing MTA examination.

There shall be two written papers in form of 100 MCQS each, practical/ clinical examination. Log book assessment and thesis examination.

COMPONENTS OF PART 2 EXAMINATION

Topics included in Paper 1 (Acute Burns)

History of acute burn care management Teamwork for total burn care (multidisciplinary burn team) Epidemiology, Demography and outcome characteristics of burn injury Prevention of burn injuries Burn management in disasters and humanitarian crises Care of outpatient's burn Pre hospital management, transportation and emergency Pathophysiology of burn shock and burn edema Fluid resuscitation and early management Burn wounds management Inhalation injury Pathophysiology of burns Nutrition in burns MOSF in burns Burn nursing Burns in extreme age Electric injuries Electric injury reconstructive problems Cold induced injuries Chemical burns Radiation injuries, vesicant burns Exfoliated and necrotizing skin disease Burn injury of eye Burn problems: Rehabilitation: Ethical dimensions: Laser for burn scar treatment Pain management

TOPICS INCLUDED IN PAPER 2 (BURN RECONSTRUCTIVE SURGERY)

- Principal aspects of surgery in burns
- Burns reconstruction
- Overview of burn reconstruction
- Reconstruction of head and neck after burns
 - o Scalp
 - Burn of face
 - o Ear
 - Eye lids
 - Eye brows
 - Nose reconstruction
 - Lip and mouth reconstruction
 - Neck reconstruction
 - Management of Post burn alopecia
- Use of tissue expansion
- Reconstruction of Deformity of trunk
 - o Thorax
 - o Burned breast
 - o Abdomen
- Management of post burn contractures involving
 - Shoulder, axilla
 - o Elbow
 - o Hip
 - Knee joints
- Acute care and reconstruction of hand deformity
- Perennial Burn injury
- Reconstruction of deformity of lower extremity
- Reconstruction of deformity of upper extremity
- Burn hypertrophic scar, keloid and treatment
- Aesthetic reconstruction
- Laser for burn scar
- Pediatric burn reconstructive surgery

OSCE/VIVA CLINICAL Four short cases One long case LOG BOOK THESIS DEFENSE

MANDATORY ROTATIONS:

Sr #	DEPARTMENT	DURATION
1	General Surgery (1 st 24 months)	6 Months
2	Plastic Surgery	6 Months
3	Orthopedics	2 Months
4	Anesthesia	2 Months
5	Dermatology	2 Months

COURSE EVALUATION

- Postgraduate students are assessed 3 monthly and their reports are sent to university.
- Yearly performance reviews are done by the supervisor.
- The record is maintained as per SZABMU Policy.

LIST OF ABBRIVATION

SZABMU	Shaheed Zulfiqar Ali Bhutto Medical University
BCC	Burn Care Center
PIMS	Pakistan Institute of Medical Sciences
ASRB	Advance Study & Research Board
ERB	Ethical Review Board
MTA	Mid Term Assessment
ICU	Intensive Care Unit
СМН	Combined Military Hospital
POF	Pakistan Ordinance Factory
NESCOM	National Engineering and Scientific Commission
Govt.	Government
MS	Master in Surgery
FCPS	Fellowship of college of Physician & Surgeons
MBBS	Bachelor or Medicine, Bachelor of Surgery
РМС	Pakistan Medical Commission
MD	Doctor of Medicine
MDS	Master of Dental Surgery