



**RAMAIAH  
UNIVERSITY**  
OF APPLIED SCIENCES

**M.S. Ramaiah University of Applied Sciences**

**Programme Structure and Course Details**

**Of**

**M.CH Plastic Surgery 2022 onwards**

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M.S. Ramaiah University of Applied Sciences  
Bangalore-560 054

**M.S. Ramaiah University of Applied Sciences**

**Ramaiah Medical College**

*Shalini*

Principal and Dean

M.S. Ramaiah Medical College and Hospital  
M.S. Ramaiah University of Applied Sciences  
Bangalore-560054



*MOLYao*

Dean - Academics

M.S. Ramaiah University of Applied Sciences  
Bangalore-560054



**RAMAIAH  
UNIVERSITY**  
OF APPLIED SCIENCES

**M.S. Ramaiah University of Applied Sciences**

**Programme Specifications**

**M.CH Plastic Surgery Programme 2022**

**onwards**

**Programme Code: MD159**

**M.S. Ramaiah University of Applied Sciences**

**Ramaiah Medical College**



*Shalini*  
Principal and Dean  
M.S. Ramaiah Medical College and Hospital  
M.S. Ramaiah University of Applied Sciences  
Bangalore-560054

*Madha Y Rao*  
Dean - Academics  
M.S. Ramaiah University of Applied Sciences  
Bangalore-560054

## University's Vision, Mission and Objectives

The M. S. Ramaiah University of Applied Sciences (MSRUAS) will focus on student-centric professional education and motivates its staff and students to contribute significantly to the growth of technology, science, economy and society through their imaginative, creative and innovative pursuits. Hence, the University has articulated the following vision and objectives.

### Vision

MSRUAS aspires to be the premier university of choice in Asia for student centric professional education and services with a strong focus on applied research whilst maintaining the highest academic and ethical standards in a creative and innovative environment

### Mission

Our purpose is the creation and dissemination of knowledge. We are committed to creativity, innovation and excellence in our teaching and research. We value integrity, quality and teamwork in all our endeavors. We inspire critical thinking, personal development and a passion for lifelong learning. We serve the technical, scientific and economic needs of our Society.

### Objectives

1. To disseminate knowledge and skills through instructions, teaching, training, seminars, workshops and symposia in Engineering and Technology, Art and Design, Management and Commerce, Health and Allied Sciences, Physical and Life Sciences, Arts, Humanities and Social Sciences to equip students and scholars to meet the needs of industries, business and society
2. To generate knowledge through research in Engineering and Technology, Art and Design, Management and Commerce, Health and Allied Sciences, Physical and Life Sciences, Arts, Humanities and Social Sciences to meet the challenges that arise in industry, business and society
3. To promote health, human well-being and provide holistic healthcare
4. To provide technical and scientific solutions to real life problems posed by industry, business and society in Engineering and Technology, Art and Design, Management and Commerce, Health and Allied Sciences, Physical and Life Sciences, Arts, Humanities and Social Sciences
5. To instill the spirit of entrepreneurship in our youth to help create more career opportunities in the society by incubating and nurturing technology product ideas and supporting technology backed business
6. To identify and nurture leadership skills in students and help in the development of our future leaders to enrich the society we live in
7. To develop partnership with universities, industries, businesses, research establishments, NGOs, international organizations, governmental organizations in India and abroad to enrich the experiences of faculties and students through research and developmental programme

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Shahine  
Principal and Dean  
M.S. Ramaiah Medical College and Hospital  
M.S. Ramaiah University of Applied Sciences  
Bangalore-560054

MeoL4/20

Dean - Academics  
M.S. Ramaiah University of Applied Sciences  
Bangalore-560054



Programme Specifications: M.Ch Plastic Surgery

Faculty	Medicine
Department	Plastic Surgery
Programme	M.Ch – Plastic Surgery
Programme Code	M.CH159
Dean of Faculty	Dr Shalini C Nooyi
Head of the Department	Dr Venkatesh M S

1. Title of the Award: M.Ch in Plastic Surgery
2. Mode of Study: Full-Time
3. Awarding Institution /Body: M. S. Ramaiah University of Applied Sciences, Bengaluru
4. Joint Award: Not Applicable
5. Teaching Institution: Ramaiah Medical College
6. Date of Programme Specifications: September 2022
7. Date of Programme approval by the academic Council of MSRUAS : 27<sup>th</sup> September 2022
8. Programme Approving Regulating Body and Date of Approval: National Medical Council of India
9. Rationale for the Programme

The purpose of PG education is to create specialists who would provide high quality healthcare and advance the cause of science of Plastic Surgery through research & training. Plastic Surgery is a highly specialized and technical discipline in clinical practice comprising treatment with multiple sub specialties in itself, which includes Microsurgery, Hand Surgery, Cancer reconstruction, Cleft and Craniofacial surgeries and cosmetic surgeries. With a view to update, by inclusion of newer topics, and to provide a uniform syllabus and course contents in Indian universities and teaching medical institutions, the proposed guidelines provide course outlines based on recent developments in clinical practice and other disciplines related to Plastic Surgery.

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Programme objectives (PO) for M.Ch Plastic Surgery Postgraduate students

**PO1.** Develop the knowledge, skills and attitude to be a competent Plastic Surgeon.

**PO2.** Demonstrate a commitment to excellence and continuous professional development with integrity. To be compassionate and sensitive to patient care.

**PO3.** To be able to Acquire and develop the knowledge, skills and attitude required to be a competent Plastic Surgeon and ethical researcher and teacher.

**PO4.** To be able to independently perform surgical procedures applicable to Plastic Surgery speciality with a reasonable degree of professionalism and competence.

Programme specific outcome (PSO) for M.Ch Plastic Surgery Postgraduate students

**PSO1.** To acquire clinical skills in taking proper clinical history, clinical examination, relevant investigations. To diagnose reasonable surgical conditions.

To be able to perform common plastic surgical procedures independently and able to perform major procedures with the help of senior plastic surgeon.

To be able to manage acute burns, fasciomaxillary injuries and limb trauma.

**PSO2.** To be able to advise specific investigation like CT scan, MRI and Doppler studies for particular cases and should be able to diagnose with reasonable accuracy.

**PSO3.** To be able to handle plastic surgery equipments like magnifying loupe, operative microscope, liposuction machine, basic plastic surgery instruments.

**PSO4.** To be able to teach and assess undergraduates and broad speciality surgical postgraduates with the help of senior surgeons and also be able to conduct fundamental research activities independently or as a team member.

**PSO5.** To apply skills learnt in the advanced learning center for patient care, application of principles of professionalism, ethics and effective communication in the conduct of routine plastic surgery services, teaching activities and research.

**PSO6.** To be able to perform basic plastic surgery procedures independently.

**Note:** A- Affective Domain, C- Cognitive Domain & P- Psychomotor Domain



Shalini

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M.S. Ramiah University of Applied Sciences

Bangalore-560054

## Course- PO-PSO- Mapping

Course Code and name	Program Outcomes				Program Specific Outcomes					
	POs				PSOs					
	PO1	PO2	PO3	PO4	PSO1	PSO 2	PSO 3	PSO4	PSO 5	PSO 6
MCHC513A General principles and basic sciences relevant to plastic and reconstructive surgery.	3	3	3	2	3	2	2	3	2	3
MCHC514A Clinical part- 1	3	3	3	3	3	2	3	2	3	3
MCHC515A Clinical part – 2	3	3	3	3	3	3	3	3	2	3
MCHC516A Recent Advances in Plastic and Reconstructive Surgery	3	3	2	3	3	3	3	3	2	3
3: Very Strong Contribution, 2: Strong Contribution, 1: Moderate Contribution										

Shalini

Principal and Dean

M.S. Ramaiah Medical College  
M.S. Ramaiah University of Applied Sciences  
Bangalore-560054



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**10. Regulations:****(A) Attendance, Progress and Conduct**

1. A candidate pursuing degree course should work in the concerned department of the institution for the full period as a full time student. No candidate is permitted to run or work in clinic/laboratory/nursing home while studying postgraduate course. No candidate shall join any other course of study or appear for any other examination conducted by this university or any other university in India or abroad during the period of study.
2. Each term shall be taken as a unit for the purpose of calculating attendance. Attendance of 80% every term is mandatory for appearing in the final university examination.
3. Every student shall attend symposia, seminars, conferences, journal review meetings, grand rounds, CPC, case presentation, clinics and lectures during each year as prescribed by the department and not absent himself / herself from work without valid reasons.
4. Every candidate is required to attend a minimum of 80% of the training during each academic term of the post graduate course. Provided further, leave of any kind shall not be counted as part of academic term without prejudice to minimum 80% attendance of training period every term.
5. Any student who fails to complete the course in the manner stated above shall not be permitted to appear for the University Examinations.

**(B) Monitoring of progress of Studies**

1. Work diary / Log Book - Every candidate shall maintain a work diary and record of his/her participation in the training programmes conducted by the department such as journal reviews, seminars, etc. as per the model checklists and logbook specimen copy.
2. Special mention may be made of the presentations by the candidate as well as details of clinical or planning procedures, if any conducted by the candidate. The work diary shall be scrutinized and certified by the Head of the Department and Head of the Institution, and presented in the university practical/clinical examination.
3. Procedure for defaulters: There will be a committee constituted by all teachers to review such situations. The defaulting candidate is counselled by the guide and head of the department. In extreme cases of default, the departmental committee may recommend that defaulting candidate will be withheld from appearing the examination, if she/he fails to fulfil the requirements in spite of being given adequate chances to set himself or herself right.



Shalini

Principal and Dean

M.S. Ramiah Medical College and Hospital  
M.S. Ramiah University of Applied Sciences  
Bangalore-560054

H. K. Rao

Dean - Academics  
M.S. Ramiah University of Applied Sciences  
Bangalore-560054

### 11. Teaching Learning Methods:

This being a highly dedicated PG super specialty introducing several new concepts/subjects in the course, it is recommended to divide the entire course into two components consisting of First Year of BASIC CONCEPTS OF THE SPECIALTY and the next two years of INTENSIVE CLINICAL TRAINING IN THE SPECIALTY.

Didactic lectures are of least importance; seminars, journal clubs, symposia, reviews, and guest lectures should get priority for acquiring theoretical knowledge. Bedside teaching, grand rounds, interactive group discussions and clinical demonstrations should be the hallmark of clinical/practical learning. Students should have hands-on training in performing various procedures and ability to interpret results of various tests/investigations.

Exposure to newer specialized diagnostic/therapeutic procedures should be given. Importance should be attached to ward rounds especially in conjunction with emergency admissions. Supervision of work in outpatient department should cover the whole range of work in the unit. It is particularly necessary to attend sub-specialty and symptom specific clinics. The development of independent skills is an important facet of postgraduate training. Joint meetings with physician colleagues, e.g. radiologists and pathologists play a valuable part in training.

The training techniques and approach should be based on principles of adult learning. It should provide opportunities initially for practicing skills in controlled or simulated situations. Repetitions would be necessary to become competent or proficient in a particular skill. The more realistic the learning situation, the more effective will be the learning.

Clinical training should include measures for assessing competence in skills being taught and providing feedback on progress towards a satisfactory standard of performance. Time must be available for academic work and audit. The following is a rough guideline to various teaching/learning activities that may be employed:

1. Intradepartmental and interdepartmental conferences related to case discussions.
2. Ward rounds along with emergency admissions.
3. Attendance at sub-specialty programme
4. external rotation postings in Onco reconstruction, Hand Surgery and Cleft surgeries.
5. Skills training
6. Conferences, Seminars, Continuing Medical Education (CME) Programmes.
7. Journal Club
8. Research Presentation and review of research work.
9. A postgraduate student of a postgraduate degree course in super specialties would be required to present one poster presentation, to read one paper at a national/state conference and to present one research paper which should be published/accepted for publication/sent for publication during the period of his postgraduate studies so as to make him eligible to appear at the postgraduate degree examination.
10. Participation in workshops, conferences and presentation of papers etc.
11. Maintenance of records. Log books should be maintained to record the work done which shall be checked and assessed periodically by the faculty members imparting the training.

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12. Postgraduate students shall be required to participate in the teaching and training programme of undergraduate students and interns.

14. Department should encourage e-learning activities.

### 12. Innovative teaching learning practices

1. Theme based teaching learning activities eg.. Hands on Microsurgery

2. Focused discussion during journal club inculcates culture in the areas of research and publication

4. Faculty Lecture during 4th week: Helps in bridging the gap between what is presented during the month and what is not about particular topic. Also it reinforces learning

**13. Assessment:** It is essential to monitor the learning progress of each candidate through continuous appraisal and regular assessment. It not only also helps teachers to evaluate students, but also students to evaluate themselves. The monitoring will be done by the staff of the department based on participation of students in various teaching/learning activities.

1. Regular formative assessments which includes Open book exams, OSCE , Impact: SWOT analysis can be done and timely counselling can be done.
2. Theory paper covering basic topics in plastic surgery at the end of 1st year. FA at the end of second year will be on common plastic surgical procedures. Mock summative assessment will be conducted in the same pattern as university exams three months before the final exams.
3. Teaching skills: Candidates are encouraged to teach undergraduate medical students and paramedical students, if any. In addition, the second year student acts as a mentor for the immediate junior in all aspects of the course.
4. Blue printing of the question for the formative assessment
  - 1<sup>st</sup> year – Basic sciences and general plastic surgery
  - 2<sup>nd</sup> year – Regional and systemic reconstruction and repair
  - 3<sup>rd</sup> year – Recent advances and Regional/systemic reconstruction and repair
5. Assessment of seminar and journal club presentations by faculty
6. Documentation in log books with periodic monitoring by faculty
7. Formulation and conduct of a research project
8. Summative university examination



Shalini

Medh 4/20  
Dean - Academics

M.S. Ramaiah University of Applied Sciences  
Bangalore-560054

Principal and Dean  
M.S. Ramaiah University of Applied Sciences  
Bangalore-560054

Scheme of Examination:**A. Theory (Written Paper) 400 marks**

There shall be four question papers, each of three hours' duration. Each paper shall consist of 10 short essay questions each carrying 10 marks. Total marks for each paper will be 100. Questions on recent advances may be asked in any or all the papers. Details of distribution of topics for each paper will be as follows.

Name of the course	Course Code	Topics	Marks
General principles and basic sciences relevant to plastic and reconstructive surgery.	MCHC513A	Should have basic knowledge about flaps, grafts, burns and craniofacial surgery. Should be able to understand the pathophysiology of burns, clinical and pathological anatomy of craniofacial anomalies.	100
Clinical part- 1	MCHC514A	a) Burns b) Fasciomaxillary fractures c) Limb injuries d) Hand injuries	100
Clinical part – 2	MCHC515A	Trunk upper limb and lower limb reconstruction	100
Recent Advances in Plastic and Reconstructive Surgery	MCHC516A	Recent advances in Plastic Surgery covering all sub specialities	100

**A. Clinical:200marks**

One long case of 80 and three short cases of 40 each.

**B. VivaVoice: 100 marks****1) Viva-Voce Examination:(100Marks)**

All examiners will conduct viva-voce conjointly on candidate's comprehension, analytical approach, expression and interpretation of data. It includes all components of course contents. In addition, candidates may be also be given case reports, charts, gross specimens, pathology slide, Instruments, X-rays, ultrasound, CT scan images for interpretation.

**C. Total Marks Distribution:**

Maximum marks for M.Ch degree course	Theory	Practical	Viva	Grand Total
	400	200	100	700



Shalini

Principal and Dean

M.S. Ramiah Medical College and Hospital  
M.S. Ramiah University of Applied Sciences  
Bangalore-560054

M. K. A. 9/20

Dean - Academics  
M.S. Ramiah University of Applied Sciences  
Bangalore-560054

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Annexures

- Annexure 1\_Overall course plan year-wise
- Annexure 2\_Sample of monthly schedules
- Annexure 3\_PG outside posting policy
- Annexure 4\_Logbook entry



Shalini

Medha.9/20  
Dean - Academics  
M.S. Ramaiah University of Applied Sciences  
Bangalore-560054

**Annexure 1****MONTHWISE TEACHING SCHEDULE FOR POST GRADUATES DEPARTMENT OF PLASTIC SURGERY**

MONTH	TOPICS	Teacher
January	According to the rotation of the post graduates which includes subject seminars, Journal club, Recent advances and clinical case discussions	Moderator
February	According to the rotation of the post graduates which includes subject seminars, Journal club, Recent advances and clinical case discussions	Moderator
March	According to the rotation of the post graduates which includes subject seminars, Journal club, Recent advances and clinical case discussions	Moderator
April	According to the rotation of the post graduates which includes subject seminars, Journal club, Recent advances and clinical case discussions	Moderator
May	According to the rotation of the post graduates which includes subject seminars, Journal club, Recent advances and clinical case discussions	Moderator
June	According to the rotation of the post graduates which includes subject seminars, Journal club, Recent advances and clinical case discussions	Moderator
July	According to the rotation of the post graduates which includes subject seminars, Journal club, Recent advances and clinical case discussions	Moderator
August	According to the rotation of the post graduates which includes subject seminars, Journal club, Recent advances and clinical case discussions	Moderator
September	According to the rotation of the post graduates which includes subject seminars, Journal club, Recent advances and clinical case discussions	Moderator
October	According to the rotation of the post graduates which includes subject seminars, Journal club, Recent advances and clinical case discussions	Moderator
November	According to the rotation of the post graduates which includes subject seminars, Journal club, Recent advances and clinical case discussions	Moderator
December	According to the rotation of the post graduates which includes subject seminars, Journal club, Recent advances and clinical case discussions	Moderator

**Note:**

1. The respective faculty will be in charge of the entire process planning, implementation and assessment.
2. It is preferable to put the time table latest by 25<sup>th</sup> of previous month.
3. PGs are expected to keep in touch with the respective teachers well ahead of the class.



Shalini

Manojao

Dean - Academics  
M.S. Ramaiah University of Applied Sciences  
Bangalore - 560054



Annexure 2

## Sample of monthly schedules

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Clinical Case discussion by Final year post graduates	OT day	Subject Seminar/ Journal Club/ Recent Advances	OT day	Log book review, ALC	OT day



Shalini

K. P. L. Rao

Dean - Academics

M.S. Ramiah University of Applied Sciences  
Bangalore-560054

ANNEXURE – 3  
DEPARTMENT OF PLASTIC SURGERY

POLICY FOR OUTSIDE PG POSTINGS

Final year post graduates will be posted for

- ❖ One month for cleft and craniofacial surgical speciality
- ❖ One month for onco plastic reconstruction
- ❖ One month for Hand reconstruction



Shalini

Yashwanth Rao

Dean - Academics

M.S. Ramaiah University of Applied Sciences

Principal and Dean

M.S. Ramaiah Medical College and Hospital  
M.S. Ramaiah University of Applied Sciences  
Bangalore-560054

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## LOG BOOK

Admission Year:

College:

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*Handwritten signature:* H. K. Rao  
Dean - Academics  
M.S. Ramaiah University of Applied Sciences  
Bangalore-560054

Table 2 : Academic presentations made by the student

Admission Year:

College:

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## LOG BOOK

Table 3 : Diagnostic and Operative procedures performed

Name:

Admission Year:

College:

Date	Name	ID No.	Procedure	Category O, A, PA, PI*

- \* Key: O - Washed up and observed  
 A - Assisted a more senior Surgeon  
 PA - Performed procedure under the direct supervision of a senior surgeon  
 PI - performed independently

Student's signature

Guide's Signature



Shalini

M. L. Rao

 Dean - Academics  
 M.S. Ramaiah University of Applied Sciences  
 Bangalore-560054

 Principal and Dean  
 M.S. Ramaiah University of Applied Sciences  
 Bangalore-560054



## Course Specifications

### M.Ch Plastic Surgery 2022 onwards

Course Code: M.CH513A



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Course Specifications

Course Title	General principles and basic sciences relevant to plastic and reconstructive surgery.
Course Code	MCHC513A
Department	Plastic Surgery
Faculty	Ramaiah Medical College

Course summary:

This course is designed in such a way that student will master the basics of plastic surgery like primary suturing, basic planning of the flaps, basic management of the burns, basic principles in congenital and hand reconstruction.

Course Outcomes:

**CO 1:** Student should be well versed with common plastic surgical conditions.

Should also have basic knowledge about flaps, grafts, burns and craniofacial surgery.

**CO 2:** The student should demonstrate integrity, accountability, respect, compassion and dedicated patient care, commitment to excellence.

Course Content:

History of Plastic Surgery
Clinical history and examination – <b>detailed systematic history taking, clinical examination of various systems, coming to a provisional working diagnosis</b>
<b>Informed consent / Medico Legal issues</b> – understanding the implications of acts of omission and commission in practice. Issues regarding Consumer Protection Act – implications in a medico-legal case like accidents, assaults etc.
Communication skills with patients – <b>understanding clarity in communication, compassionate explanations and giving emotional support to at the time of suffering and bereavement</b>
Principles of Surgical audit – <b>understanding journal based literature study; the value of text book, reference book articles; value of review articles; original articles and their critical assessment.</b>
Research Methodology & Biostatistics - <b>understanding the value of retrospective, prospective, randomized controlled and blinded studies understanding the principles and meanings of various biostatistical tests applied in these studies</b>
Medical Ethics/Social responsibilities of surgeons
Use of Computers in Plastic Surgery – <b>Components of a Computer; its use in practice – principles of word processing, spreadsheet functions, database and presentation; the internet and its uses. The value of computer based systems in bio medical equipment value of computer in imaging and mock surgery</b>
Preoperative workup – <b>concept of fitness for surgery; principles of planning, basic medical workup; workup in special situations like, diabetics, renal failure, cardiac and respiratory illness; risk stratification</b>





<b>Principles of operative surgery</b> like sepsis, asepsis, antisepsis, sterilization surgical sutures, drains prosthetic grafts. Hepatitis, AIDS.
<b>Postoperative care</b> – concept recovery room care; airway management; assessment of wakefulness; management of cardiovascular instability in this period; criteria for shifting to a ward; pain management.
<b>Basic Plastic surgical instrumentation – Principles of surgical instrumentation; their maintenance and sterilization</b>
<b>Surgical diathermy</b>
<b>Principles of Lasers and its use in plastic surgery</b>
<b>Wound management</b> – wound healing; factors influencing healing; basic surgical techniques; properties of suture materials; appropriate use of sutures
<b>Fluid and electrolyte balance / Acid – Base balance</b> - the body fluid compartments; Metabolism of water and electrolytes; factors maintaining homeostasis; causes for and treatment of acidosis and alkalosis. Both in adult and children.
<b>Blood Transfusion</b> – blood grouping; cross matching; blood component therapy; complications of blood transfusion; blood substitutes; auto transfusions; cell savers.
<b>Principles of Burn management</b> – Types of thermal injury; assessment of extent; immediate management; late management; skin cover; rehabilitation including post burns complications.
<b>Genito Urinary Surgery</b>
<b>Airway obstruction / management</b> – anatomy of the airway; principles of keeping the airway patent; mouth to mouth resuscitation; oropharyngeal airway; endotracheal intubation; cricothyroidectomy; tracheostomy.
<b>Assessment of trauma</b> – poly trauma patients, closed abdominal and chest injuries / penetrating injuries/head injury, urological injuries; trauma scores management of polytrauma cases including lower limb trauma.
<b>Critical care-</b> Cardiorespiratory failure – management of shock; including monitoring; sepsis scores; pharmacological supports.

### Operative Skills

A list of operative procedures have been given in the following tables. It is also recommended that graded responsibility be given depending upon on the knowledge and the skills already acquired by the student. The year wise distribution of the skills recommended are to be used as a general guideline and some overlap is inevitable. List of skills in various specialty subjects has been made. These skills in specialty subjects may be acquired both during the specialty postings (External postings which will be selected as per the aptitude and request from individual candidate based upon their interest and hence it will be a dynamic process) and in the parent department. The list within the tables, indicates the surgical procedures that the student should, by the end of the course, be able to perform independently (P) by himself/herself or should have performed with assistance (PA) during the course. The other categories of the surgical procedures that the student should either have observed (O) or have assisted the operating surgeon (A) are also mentioned. Note for all categories, the student washes up in the operating room.

### Key for abbreviations used

O	-	Observe
A	-	Assist senior
PA	-	Performs with assistance from a senior or under supervision
P	-	Performs independently



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## Basic techniques of Plastic Surgery

1. Elliptical excision
2. Multiple excision
3. Wedge excision
4. T excision
5. Circular excision
6. Cautery Electro Surgery
7. Skin suturing techniques
  - A. interrupted,
  - B. mattress,
  - C. subdermal buried

List of Procedures indicating minimum number to be observed (O), Assisted (A), Performed under assistance (PA) and Performed independently (P) during the course, (year wise)

Skills	I Year	II Year	III Year
<b>FLAPS</b>			
Local flaps-Advancement	O -3, PA - 3	PA - 3	P - 5
- Single	O -2, PA - 2	PA - 2	P - 4
- Bipedicle	O - 3	PA - 1	P - 1
- Transposition flap	O - 3, PA - 2	PA - 2, P - 1	P - 3
- Rotation Flap interposition flap	O -2, PA - 1	PA - 1, P - 1	P - 3
Z Plasty	O - 3, PA - 5	PA - 5, P - 3	P - 5
V-Y Plasty	O - 3, PA - 1	PA - 2	P - 2
Rhemboid flap	O - 5, PA - 3	PA - 4	P - 5
Axial Flaps D.P. Flaps	O - 3, PA - 3	PA - 3, P - 1	P - 5
Fascio cutaneous flaps	O - 2, PA - 1	PA - 2, P - 1	P - 2
Septocutaneous flaps	O - 2, PA - 2	PA - 2, P - 1	P - 2
Musculocutaneous flaps	O - 2, A - 2	O - 2, PA - 1	PA - 2, P - 2
Muscle pedicle	O - 2, A - 2	O - 2, PA - 1	PA - 2, P - 1
<b>Tissue transplantation</b>			
Auto	O - 3, PA - 3, P - 2	PA - 3, P - 5	P - 10
Homo			
Xeno grafts			
Implants	O - 2, PA - 1	O - 2, PA - 1	PA - 2
Metals	O - 2	O - 2, PA - 2	PA - 2, P - 2
Silicones	O - 2	O - 2	O - 2
Tissue expanders	O - 2	O - 1, PA - 1	PA - 2
Screws and plates	O - 2, A - 2	O - 2, A - 2, PA - 1	PA - 2, P - 2

Registrar  
M.S. Ramaiah University of Applied Sciences  
Bangalore - 560 054

MedL 4/ao

Dean - Academics

M.S. Ramaiah University of Applied Sciences  
Bangalore - 560 054

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Principal and Dean

M.S. Ramaiah Medical College and Hospital  
M.S. Ramaiah University of Applied Sciences  
Bangalore-560054

Course Mapping (CO-PO-PSO Mapping)

Course Codes and name	Course Outcomes	Program Outcomes				Program Specific Outcomes					
		PO1	PO2	PO3	PO4	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
M.CHC513A General Principles and basic sciences relevant to plastic and reconstructive surgery	CO 1	3	3	3	2	3	2	2	3	2	3
	CO 2	2	3	3	2	3	3	3	3	3	2
3: Very Strong Contribution, 2: Strong Contribution, 1: Moderate Contribution											



Shalini

*Yash Y Rao*  
Dean - Academics  
M.S. Ramiah University of Applied Sciences  
Bangalore-560054

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## Course Specifications

### M.Ch Plastic Surgery 2022 onwards

Course Code: M.CH514A



Shalini

Yash Rao

Dean - Academic  
M.S. Ramaiah University  
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Course Specifications

Course Title	Clinical part- 1
Course Code	MCHC514A
Department	Plastic Surgery
Faculty	Ramaiah Medical College

Course Summary:

This course is designed in such a way that the student will master the basic management of burns, craniofacial and maxillofacial injuries and limb trauma reconstruction.

Course Outcomes:

**CO 1:** Should know standard operating procedures for common plastic surgical conditions like Burns, Fasciomaxillary fractures, Limb injuries and Hand injuries.

**CO 2:** To be able to perform skin grafting, local flaps, pedicle flaps. Should have basic knowledge about upper limb and head and neck reconstruction.

**CO 3:** Should have a basic knowledge about research methodology so as to conduct fundamental and applicable research in accordance with instructions as accepted by international standards.

Course Content:

<b>Management of keloids and hypertrophic scars.</b>
<b>Surgical infections</b> sepsis and asepsis and antisepsis; microbiological principles; rational use of antibiotics; special infections like synergistic gangrene and diabetic foot infections. Hepatitis and AIDS. Septicaemia and its management
<b>Nutrition in health and disease</b> – nutritional assessment; metabolic response to stress; need for nutritional support; enteral nutrition; routes of access to GI tract; parenteral nutrition; access to central veins for nutritional support.
<b>Principles of oncology</b> - cell kinetics; causation of tumours; principles of oncologic surgery; radiotherapy and chemotherapy; paraneoplastic syndromes; cancer pain management; palliative care.
<b>Principles of Burn management</b> – Types of thermal injury; assessment of extent; immediate management; late management; skin cover; rehabilitation including post burns complications.
<b>Principles of fracture management</b> – fracture healing; principles of immobilization; complications; principles of internal and external fixation; hand and maxillo-facial injuries including AO method.
<b>Genito Urinary Surgery</b>
<b>Shock and Pulmonary failure</b> – types of shock; diagnosis resuscitation; pharmacologic support; ARDS and its causes; prevention; ventilatory support.
<b>Anaesthesia</b> – stages of anaesthesia; pharmacology of inhalation; intravenous and regional anaesthesia; muscle relaxants. Pediatric anaesthesia and problems related to that.
<b>Assessment of trauma</b> – poly trauma patients, closed abdominal and chest injuries / penetrating injuries/head injury, urological injuries, trauma scores management of polytrauma cases including lower limb trauma.
<b>Critical care</b> - Cardiorespiratory failure – management of shock; including monitoring; sepsis

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scores; pharmacological supports.
<b>Breast disease</b> – physiology and breast anatomy; benign and malignant disease; diagnosis; investigation; screening for cancer; genetics of breast cancer; principles of reconstruction, soft tissue neoplasms. Reduction and augmentation mammoplasty. Gynaecomastia and its management
<b>Neurosurgery</b>
<b>Cranio-facial deformities</b> including craniostenosis, complex craniofacial clefts & Skull Base Surgery, craniofacial injury management. Management of calvarial defect
<b>Peripheral Nerve Injuries</b> including anatomy and physiology of repair and regeneration. Brachial plexus injury
<b>Undescended testis</b>
<b>Hypospadias/Epispadias</b>
<b>Urinary diversion</b>
<b>Infertility</b>
Vasectomy
Surgery for impotence
<b>Imaging</b> - principles, investigations, including CT/ MRI CT guided FNAB/C
<b>Tumour - biology and management of including chemotherapy and adjuvant therapy</b>
<b>Breast – benign &amp; malignant conditions</b>
Chemotherapy / adjuvant therapy
<b>Head and neck tumours</b> , pathology and its management
Skin tumours - including basal cell carcinoma, squamous cell carcinoma and melanoma, including oral cancer and tongue cancer.
Salivary gland tumors including parotid tumours.
Post tumor excision- surgical reconstruction
Principals of radiotherapy
Cardio thoracic surgery
Flail chest, thoracic trauma
AV malformations- aetiology, pathology, classification and its management
Varicose veins
Chronic venous insufficiency
<b>Vascular emergencies</b> – trauma, embolism
Microvascular surgery – principles including /Free flap and replantation, Reanimation of face, functional muscle transfer
Vascular imaging
Meningo-mylelcoels,encephalocoels
Spinal fusion defects.
Ventral defects
Ano rectal anomalies.
<b>Implants</b> – Biocompatibility
Biology including surgical implants, alloplastic metal and synthetic.
<b>Bone and cartilage</b>
Hair transplant
Face lift
Rhinoplasty
Laser surgery
<b>Endoscopy</b> and minimally invasive surgery in plastic and reconstructive surgery.





**Operative Skills**

A list of operative procedures have been given in the following tables. It is also recommended that graded responsibility be given depending upon on the knowledge and the skills already acquired by the student. The year wise distribution of the skills recommended are to be used as a general guideline and some overlap is inevitable. List of skills in various specialty subjects has been made. These skills in specialty subjects may be acquired both during the specialty postings (External postings which will be selected as per the aptitude and request from individual candidate based upon their interest and hence it will be a dynamic process) and in the parent department. The list within the tables, indicates the surgical procedures that the student should, by the end of the course, be able to perform independently (P) by himself/herself or should have performed with assistance (PA) during the course. The other categories of the surgical procedures that the student should either have observed (O) or have assisted the operating surgeon (A) are also mentioned. Note for all categories, the student washes up in the operating room.

**Key for abbreviations used**

O	-	Observe
A	-	Assist senior
PA	-	Performs with assistance from a senior or under supervision
P	-	Performs independently

List of Procedures indicating minimum number to be observed (O), Assisted (A), Performed under assistance (PA) and Performed independently (P) during the course, (year wise)

Skills	I Year	II Year	III Year
<b>Head and neck</b>			
Facial hemiatrophy	O - 2	O - 2	A - 2
Hemi facial microsomia	O - 1	O - 1	O - 1
Apert's syndrome/ Treacher Collin's Syndrome		O - 1	O - 1
Complex facial cleft		O - 2	A - 2
Maxillofacial surgery			
Intermaxillary wiring	O - 2, A - 2	A - 2, PA - 1	PA - 2, P - 2
Screw plate fixation	O - 1, A - 1	A - 2, PA - 1	P - 2
Blowout fracture treatment	O - 1	O - 1	PA - 1
Pan facial fractures treatment	O - 2, A - 1	O - 1, PA - 1	PA - 1, P - 1
<b>Scalp</b>			
Reconstruction - 1. SSG	PA - 5	PA - 2, P - 5	P - 5
2. Local flaps	PA	PA - 2,	P - 2
3. Tissue expanders	O - 1	O - 1, A - 1	PA - 1
<b>Oculoplastic surgery</b>			
Eyelid - traumatic loss - reconstruction / malignant excision - reconstruction	O - 1	O - 1	PA - 1
Facial paralysis - fascia lata sling/ any other reanimation	O - 1	O - 1	O - 1
Ptosis correction	O - 1	O - 1, PA - 1	PA - 1
Blepharoplasty	O - 1	O - 1	O - 1
Otoplasty			

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Ear reconstruction –congenital –traumatic	O - 1	O - 1	O - 1
<i>Head and neck tumors</i>			
Oral malignancy			
Composite excision reconstruction	O - 1 A - 2	A - 2, PA - 1	PA - 1, P - 1
Jaw tumours – excision – reconstruction	O - 1	O - 1, A - 1	PA - 1
Radical Neck dissection	O - 1, A - 1	O - 1, A - 2	A - 2, PA - 1
<b>Cosmetic surgery</b>			
Chemical peel/Derma abrasion	O - 1	O - 1	O - 1
Face lift		O - 1	O - 1
Laser	O - 1	O - 1	O - 1
Liposuction and body contouring	O - 1	O - 1	O - 1
Blepharoplasty	O - 1	O - 1	O - 1
Tangential excision	O - 3, A - 3, PA - 2	A - 3, PA - 3	PA - 3, P - 3
<b>Integument</b>			
SSG	O - 5, A - 5, P - 5	P - 5	P - 5
Hairy naevous excision and SSG	O - 1, A - 1	A - 1, PA - 1	P - 2
Hypertrophic scar	O - 4, PA - 4	PA - 4, P - 3	P - 5
Keloids	PA - 4	P - 4	P - 5
Tattoos	O - 1, PA - 1	PA - 2, P - 1	P - 2
<b>Hand</b>			
Finger tip injuries	O - 3, A - 2, PA - 2	PA - 2, P - 5	P - 5
Amputations	O - 2, A - 3	PA - 2, P - 3	P - 5
Infections			
Fractures and joint injuries of the hand	O - 2	A - 2, PA - 2	P - 2
Stiff finger joints			
Tendon injuries in forearm and hand-flexor-extensor	O - 2, A - 2	A - 2, PA - 3	PA - 2, P - 3
Nerve injuries	O - 1	A - 2,	PA 1, A - 4
Nerve graft	O - 1	O - 1	O - 1
Tumours of the hand – benign – malignant	O - 2	O - 2, A - 2	A - 2, PA - 1
<b>Microvascular surgery</b>			
Free flaps	O - 2	O - 2, A - 1	A - 2
Muscle flaps		O - 1	O - 1, A - 1
Skin flaps	O - 2	O - 2, A - 1	A - 2, PA - 1
Micro-neural repair		O - 1	A - 1
Replantation Microvascular Lab work	O - 3	O - 4, A - 2	PA - 2, P - 2
Rhinoplasty			
Cosmetic surgery / Reduction / Augmentation	O - 2	O - 2, A - 2	A - 3, PA - 2
Corrective surgery	O - 2	A - 2, PA - 1	A - 2, PA - 2
Nose tip plasty	O - 1	A - 1, PA - 1	PA - 1
<b>Ear</b>			
Microtia		O - 1	O - 1
Lobule reconstruction / Repair	O - 2, A - 2	A - 2, PA - 2	PA - 2, P - 4
Burn external ear reconstruction	O - 1	O - 1, A - 1	A - 1, PA - 1
Burn injuries			

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Tangential excision	O - 2, PA - 1	A - 4, PA - 2	PA - 4, P - 4
Tracheostomy			
Escharotomy - circumferential burns	O - 3, A - 4	A - 2, PA - 2	P - 2
Escharectomy	O - 2, A - 4	A - 2, PA - 2	P - 4
Skin grafting	O - 2, A - 3	O - 2, A - 2, PA - 2	PA - 2, P - 5
Radiation injuries-coverage for such injuries	O - 2	O - 2	A - 2
Electrical burns	O - 1, A - 2	O - 1, A - 2, PA - 1	PA - 2, P - 1
Amputations	O - 1	O - 1, A - 1	PA - 1, P - 1
Central line placement / Intubation	O - 1, PA - 1	O - 1, PA - 1	PA - 1, P - 1
Intubation			
SKIN			
Tumours - benign - malignant	O - 2, PA - 2	A - 2, PA - 2	PA - 2, P - 3
Premalignant conditions	O - 2	O - 2	O - 2
Lymphangioma	O - 1, A - 1	O - 2, A - 1	O - 2, PA - 1
Haemangioma	O - 1, A - 1	O - 2, A - 1	O - 2, PA - 1
Giant hairy pigmented naevi	O - 1	O - 1	O - 1, PA - 1
Hypertrophic scar	O - 3	O - 3, A - 3	A - 3, P - 3



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Course Mapping (CO-PO-PSO Mapping)

Course Code and name	Course Outcomes	Program Outcomes				Program Specific Outcomes					
		PO1	PO2	PO3	PO4	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
M.CHC514A Clinical Part 1	CO1	3	3	3	3	3	2	3	2	3	3
	CO 2	3	3	3	3	3	3	3	3	2	3
	CO 3	3	3	2	3	2	3	3	3	2	3
3: Very Strong Contribution, 2: Strong Contribution, 1: Moderate Contribution											



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## Course Specifications

### M.Ch Plastic Surgery 2022 onwards

Course Code: M.CH515A



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Course Specifications

Course Title	Clinical part – 2
Course Code	MCHC515A
Department	Plastic Surgery
Faculty	Ramaiah Medical College

Course Summary:

The course is designed in such a way that the student will master multidisciplinary management of limbs, trunks (Chest and abdomen) reconstruction including both trauma and cancer reconstruction.

Course Outcomes:

**CO1:** Be familiar with SOP followed for limb trauma with special emphasis to vascular compromise and its acute management.

**CO2:** Be able to possess the knowledge of principles of microsurgical principles and its application to the clinical situations like vascular compromised limbs and chest and abdominal penetrating injuries.

**CO3:** To be able to take decision and perform minor procedures in emergency and coordinating with other specialties like orthopaedics, surgical oncology and general surgery.

**CO4:** Should demonstrate knowledge of different teaching-learning methods and be able to teach undergraduate students, paramedical staff and their own peers along with interdepartmental conferences/ CMEs as applicable to all the specific courses.

Course Content:

**Fluid and electrolyte balance / Acid – Base balance** - the body fluid compartments; Metabolism of water and electrolytes; factors maintaining homeostasis; causes for and treatment of acidosis and alkalosis. Both in adult and children.

**Surgical infections** sepsis and asepsis and antisepsis; microbiological principles; rational use of antibiotics; special infections like synergistic gangrene and diabetic foot infections. Hepatitis and AIDS. Septicaemia and its management

**Nutrition in health and disease** – nutritional assessment; metabolic response to stress; need for nutritional support; enteral nutrition; routes of access to GI tract; parenteral nutrition; access to central veins for nutritional support.

**Principles of oncology** - cell kinetics; causation of tumours; principles of oncologic surgery; radiotherapy and chemotherapy; paraneoplastic syndromes; cancer pain management; palliative care.

**Principles of Burn management** – Types of thermal injury; assessment of extent; immediate management; late management; skin cover; rehabilitation including post burns complications.

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<b>Principles of fracture management</b> – fracture healing; principles of immobilization; complications; principles of internal and external fixation; hand and maxillo-facial injuries including AO method.
<b>Shock and Pulmonary failure</b> – types of shock; diagnosis; resuscitation; pharmacologic support; ARDS and its causes; prevention; ventilatory support.
<b>Anaesthesia</b> – stages of anaesthesia; pharmacology of inhalation; intravenous and regional anaesthesia; muscle relaxants. Pediatric anaesthesia and problems related to that.
<b>Assessment of trauma</b> – poly trauma patients, closed abdominal and chest injuries / penetrating injuries/head injury, urological injuries; trauma scores management of polytrauma cases including lower limb trauma.
<b>Critical care</b> - Cardiorespiratory failure – management of shock; including monitoring; sepsis scores; pharmacological supports.
<b>Breast disease</b> – physiology and breast anatomy; benign and malignant disease; diagnosis; investigation; screening for cancer; genetics of breast cancer; principles of reconstruction, soft tissue neoplasms. Reduction and augmentation mammoplasty. Gynaecomastia and its management
<b>Neurosurgery</b>
<b>Cranio-facial deformities</b> including craniostenosis, complex craniofacial clefts & Skull Base Surgery, craniofacial injury management. Management of calvarial defects
<b>Peripheral Nerve Injuries</b> including anatomy and physiology of repair and regeneration. Brachial plexus injury
<b>Undescended testis</b>
<b>Hypospadias/Epispadias</b>
<b>Urinary diversion</b>
<b>Infertility</b>
Vasectomy
Surgery for impotence
<b>Imaging</b> - principles, investigations, including CT/ MRI CT guided FNAB/C
<b>Tumour - biology and management of including chemotherapy and adjuvant therapy</b>
<b>Breast – benign &amp; malignant conditions</b>
Chemotherapy / adjuvant therapy
<b>Head and neck tumours</b> , pathology and its management
<b>Skin tumours - including basal cell carcinoma, squamous cell carcinoma and melanoma, including oral cancer and tongue cancer.</b>
<b>Salivary gland tumors including parotid tumors.</b>
Post tumor excision- surgical reconstruction
Principals of radiotherapy
Cardio thoracic surgery
Flial chest, thoracic trauma
AV malformations- aetiology, pathology, classification and its management
Varicose veins
Chronic venous insufficiency
<b>Vascular emergencies</b> – trauma, embolism
<b>Microvascular surgery – principles including /Free flap and replantation, Reanimation of face, functional muscle transfer</b>
Vascular imaging
Meningo-mylelcoels,encephalocoels



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Spinal fusion defects.
Ventral defects
Ano rectal anomalies.
<b>Implants</b> – Biocompatibility
Biology including surgical implants, alloplastic metal and synthetic.
<b>Bone and cartilage</b>
Hair transplant
Face lift
Rhinoplasty
Laser surgery
<b>Endoscopy</b> and minimally invasive surgery in plastic and reconstructive surgery.

### Operative Skills

A list of operative procedures have been given in the following tables. It is also recommended that graded responsibility be given depending upon on the knowledge and the skills already acquired by the student. The year wise distribution of the skills recommended are to be used as a general guideline and some overlap is inevitable. List of skills in various specialty subjects has been made. These skills in specialty subjects may be acquired both during the specialty postings (External postings which will be selected as per the aptitude and request from individual candidate based upon their interest and hence it will be a dynamic process) and in the parent department. The list within the tables, indicates the surgical procedures that the student should, by the end of the course, be able to perform independently (P) by himself/herself or should have performed with assistance (PA) during the course. The other categories of the surgical procedures that the student should either have observed (O) or have assisted the operating surgeon (A) are also mentioned. Note for all categories, the student washes up in the operating room.

### Key for abbreviations used

O	-	Observe
A	-	Assist senior
PA	-	Performs with assistance from a senior or under supervision
P	-	Performs independently

List of Procedures indicating minimum number to be observed (O), Assisted (A), Performed under assistance (PA) and Performed independently (P) during the course, (year wise)

Skills	I Year	II Year	III Year
<b>Cosmetic surgery</b>			
Chemical peel/Derma abrasion	O - 1	O - 1	O - 1
Face lift		O - 1	O - 1
Laser	O - 1	O - 1	O - 1
Liposuction and body contouring	O - 1	O - 1	O - 1
Blepharoplasty	O - 1	O - 1	O - 1
Tangential excision	O - 3, A - 3, PA - 2	A - 3, PA - 3	PA - 3, P - 3
<b>Integument</b>			
SSG	O - 5, A - 5, P - 5	P - 5	P - 5
Hairy naevous excision and SSG	O - 1, A - 1	A - 1, PA - 1	P - 2

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Hypertrophic scar	O - 4, PA - 4	PA - 4, P - 3	P - 5
Keloids	PA - 4	P - 4	P - 5
Tattoos	O - 1, PA - 1	PA - 2, P - 1	P - 2
Hand			
Finger tip injuries	O - 3, A - 2, PA - 2	PA - 2, P - 5	P - 5
Amputations	O - 2, A - 3	PA - 2, P - 3	P - 5
Infections			
Fractures and joint injuries of the hand	O - 2	A - 2, PA - 2	P - 2
Stiff finger joints			
Tendon injuries in forearm and hand-flexor-extensor	O - 2, A - 2	A - 2, PA - 3	PA - 2, P - 3
Nerve injuries	O - 1	A - 2,	PA 1, A - 4
Nerve graft	O - 1	O - 1	O - 1
Tumours of the hand – benign – malignant	O - 2	O - 2, A - 2	A - 2, PA - 1
Microvascular surgery			
Free flaps	O - 2	O - 2, A - 1	A - 2
Muscle flaps		O - 1	O - 1, A -
Skin flaps	O - 2	O - 2, A - 1	A - 2, PA - 1
Micro-neural repair		O - 1	A - 1
Replantation Microvascular Lab work	O - 3	O - 4, A - 2	PA - 2, P - 2
SKIN			
Tumours – benign – malignant	O - 2, PA - 2	A - 2, PA - 2	PA - 2, P - 3
Premalignant conditions	O - 2	O - 2	O - 2
Lymphangioma	O - 1, A - 1	O - 2, A - 1	O - 2, PA - 1
Haemangioma	O - 1, A - 1	O - 2, A - 1	O - 2, PA - 1
Giant hairy pigmented naevi	O - 1	O - 1	O - 1, PA - 1
Hypertrophic scar	O - 3	O - 3, A - 3	A - 3, P - 3
BREAST			
Reduction	O - 1	A - 1	A - 1
Augmentation mammoplasty	O - 1	A - 1	A - 1
Breast reconstruction by flap	O - 1, A - 1	A - 1, PA - 1	PA - 1
Gynaecomastia	O - 1, A - 1	A - 1, PA - 1	P - 1
LOWER LIMB			
Trauma fractures with skin soft tissue loss	O - 1, A - 1	A - 2, PA - 2	PA - 2, P - 3
Flap cover, Infection / Non healing ulcer	O - 5, PA - 2	PA - 3, P - 1	P - 4
Lymphoedma surgery	O - 1	O - 1, A - 1	A - 1, PA - 1
PRESSURE SORES			
SSG	O - 1	O - 1, A - 1	PA - 1
Local flaps, fasciocutaneous flaps	O - 1, A - 1	A - 1, PA - 1	PA - 1, P - 1
Neurovascular flaps	O - 1	O - 1	O - 1
Lipectomy		O - 1	O - 1
Liposuction	O - 1	A - 1	A - 1
EXTERNAL GENITALIA			
Hypospadias	O - 1	O - 2	A - 2
Epispadias	O - 1	O - 1	A - 1
Gender dysphoria			O - 1
Inter sex			
Vaginal agenesis	O - 1	O - 1, A - 1	A - 1, PA - 1



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Course Mapping (CO-PO-PSO Mapping)

Course Code and Name	Course outcomes	Program Outcomes				Program Specific Outcomes					
		PO1	PO2	PO3	PO4	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
MCHC515A Clinical part – 2	CO 1	3	3	3	3	3	3	3	3	2	3
	CO 2	3	3	2	3	3	3	3	3	2	3
	CO 3	3	3	2	3	3	3	3	3	3	3
	CO 4	3	3	2	3	3	3	3	3	2	3
3: Very Strong Contribution, 2: Strong Contribution, 1: Moderate Contribution											



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## Course Specifications

### M.Ch Plastic Surgery 2022 onwards

Course Code: M.CH516A



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Course Specifications

Course Title	Recent Advances in Plastic and Reconstructive Surgery
Course Code	MCHC516A
Department	Plastic Surgery
Faculty	Ramaiah Medical College

Course Summary:

The course is designed in such a way that the student will master recent developments in Plastic Surgery including lasers, super microsurgery and Lymphedema surgeries.

Course Outcomes:

**CO 1:** Should be conversant with the principles of Lymphedema management, super microsurgical procedures brachial plexus injury and knowledge about recent advances in plastic surgical sub specialties.

**CO 2:** Student should be conversant with photography, record keeping and data management.

Course Content:

**Nutrition in health and disease** – nutritional assessment; metabolic response to stress; need for nutritional support; enteral nutrition; routes of access to GI tract; parenteral nutrition; access to central veins for nutritional support.

**Vaginal agenesis; Gender dysphoria**

**Shock and Pulmonary failure** – types of shock; diagnosis; resuscitation; pharmacologic support; ARDS and its causes; prevention; ventilatory support.

**Anaesthesia** – stages of anaesthesia; pharmacology of inhalation; intravenous and regional anaesthesia; muscle relaxants. Pediatric anaesthesia and problems related to that.

**Breast disease** – physiology and breast anatomy; benign and malignant disease; diagnosis; investigation; screening for cancer; genetics of breast cancer; principles of reconstruction, soft tissue neoplasms. Reduction and augmentation mammoplasty. Gynaecomastia and its management

**Neurosurgery**

**Cranio-facial deformities** including craniostenosis, complex craniofacial clefts & Skull Base Surgery, Craniofacial injury management. Management of calvarial defects.

**Peripheral Nerve Injuries** including anatomy and physiology of repair and regeneration. Brachial plexus injury

**Undescended testis**

**Hypospadias/Epispadias**

**Urinary diversion**

<b>Infertility</b>
Vasectomy
Surgery for impotence
<b>Imaging</b> - principles, investigations, including CT/ MRI CT guided FNAB/C
<b>Tumour - biology and management of including chemotherapy and adjuvant therapy</b>
<b>Breast – benign &amp; malignant conditions</b>
Chemotherapy / adjuvant therapy
<b>Head and neck tumours</b> , pathology and its management
<b>Skin tumours - including basal cell carcinoma, squamous cell carcinoma and melanoma, including oral cancer and tongue cancer.</b>

### Operative Skills

A list of operative procedures have been given in the following tables. It is also recommended that graded responsibility be given depending upon on the knowledge and the skills already acquired by the student. The year wise distribution of the skills recommended are to be used as a general guideline and some overlap is inevitable. List of skills in various specialty subjects has been made. These skills in specialty subjects may be acquired both during the specialty postings (External postings which will be selected as per the aptitude and request from individual candidate based upon their interest and hence it will be a dynamic process) and in the parent department. The list within the tables, indicates the surgical procedures that the student should, by the end of the course, be able to perform independently (P) by himself/herself or should have performed with assistance (PA) during the course. The other categories of the surgical procedures that the student should either have observed (O) or have assisted the operating surgeon (A) are also mentioned. Note for all categories, the student washes up in the operating room.

### Key for abbreviations used

O	-	Observe
A	-	Assist senior
PA	-	Performs with assistance from a senior or under supervision
P	-	Performs independently

List of Procedures indicating minimum number to be observed (O), Assisted (A), Performed under assistance (PA) and Performed independently (P) during the course, (year wise)

Skills	I Year	II Year	III Year
<b>SKIN</b>			
Tumours – benign – malignant	O – 2, PA -2	A – 2, PA - 2	PA – 2, P – 3
Premalignant conditions	O - 2	O - 2	O – 2
Lymphangioma	O – 1, A - 1	O – 2, A - 1	O – 2, PA – 1
Haemangioma	O – 1, A - 1	O – 2, A - 1	O – 2, PA – 1
Giant hairy pigmented naevi	O – 1	O – 1	O - 1, PA-1
Hypertrophic scar	O - 3	O – 3, A - 3	A – 3, P – 3
<b>BREAST</b>			
Reduction	O - 1	A - 1	A – 1
Augmentation mammoplasty	O - 1	A - 1	A – 1
Breast reconstruction by flap	O – 1, A - 1	A – 1, PA - 1	PA – 1

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M.S. Ramaiah Medical College and Hospital  
M.S. Ramaiah University of Applied Sciences  
Bangalore-560054

Maha Y. Rao

Dean - Academic  
M.S. Ramaiah University of Applied Sciences  
Bangalore-560054



Gynaecomastia	O - 1, A - 1	A - 1, PA - 1	P - 1
LOWER LIMB			
Trauma fractures with skin soft tissue loss	O - 1, A - 1	A - 2, PA - 2	PA - 2, P - 3
Flap cover, Infection / Non healing ulcer	O-5, PA-2	PA -3, P-1	P - 4
Lymphoedma surgery	O - 1	O - 1, A - 1	A - 1, PA - 1
PRESSURE SORES			
SSG	O - 1	O - 1, A - 1	PA - 1
Local flaps, faciocutaneous flaps	O - 1, A - 1	A - 1, PA - 1	PA - 1, P - 1
Neurovascular flaps	O - 1	O - 1	O - 1
Lipectomy		O - 1	O - 1
Liposuction	O - 1	A - 1	A - 1
EXTERNAL GENITALIA			
Hypospadias	O - 1	O - 2	A - 2
Epispadias	O - 1	O - 1	A - 1
Gender dysphoria			O - 1
Inter sex			
Vaginal agenesis	O - 1	O - 1, A - 1	A - 1, PA - 1



Shalini

M. S. Ramaiah  
Dean - Academics

M.S. Ramaiah University of Applied Sciences  
Bangalore-560054

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Principal and Dean

M.S. Ramaiah Medical College and Hospital  
M.S. Ramaiah University of Applied Sciences  
Bangalore - 560054

Course Mapping (CO-PO-PSO Mapping)

Course Code and name	Course outcomes	Program Outcomes				Program Specific Outcomes					
		PO1	PO2	PO3	PO4	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
MCHC516A Recent Advances in Plastic and Reconstructive Surgery	CO 1	3	3	2	3	3	3	3	3	2	3
	CO 2	3	3	3	3	3	2	2	3	3	2
3: Very Strong Contribution, 2: Strong Contribution, 1: Moderate Contribution											



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Course Materials:RECOMMENDED BOOKS AND JOURNALS**I. Essential Books**

1. Grabb & Smith's Plastic Surgery – 5<sup>th</sup> Edition.  
Editors Sherrell J.Aston, Robert W. Beasley & Charles.H.M. Thorne in  
1997 by Lippincott – Raven Publishers, New York.
2. Neligan Plastic Surgery Vol. 1 to 6  
Editor Professor Peter C Neligan, 4<sup>th</sup> edition, Elsevier science
3. Mastery of Plastic & Reconstructive Surgery Vol.1- 3 edited by Mimi Cohen & Robert M.  
Golwyn, 1944, 1 Edn., London Little Brown & Co.
4. Fundamentals of Plastic Surgery by Malcolm W. Marks & Charles Marks, 1997, London.  
W.B.Saunders Co.

**II. Reference Books****i. Flaps**

1. Grabb's Encyclopedia of Flap Vol. 1 to 3, 2<sup>nd</sup> Edition Edited by Berish Strauch, Luiso.  
Vasconez & Elizabeth J. Hall – Findlay in 1998 by Lippincott – Raven – Publisher in  
Philadelphia, New York.
2. Mc Craw & Arnolds Atlas of Muscle & Muscular Cutaneous Flaps  
Authors David G.Dibbell, G.Partick Maxwell. J.Brien Murphy  
peterpairolero & Christophapp in 1986 by John Mc Craw & P.G.Arnold.  
Publish Hampton press Publishing Company Inc.Narfol, Virginia.
3. Skin Flaps Edited by William, Brabb & M.Bert Myers in 1975 by little,  
Brown & Company, Boston.

**ii. Burns**

1. "Current Topics in Burn Care" by Thomas L.Wachtel Virginia Kahn, Hugh A.Frank in 1983  
An Aspen Publication Rockville, Maryland, London.
2. Burn Reconstruction by Bruce M.Achauer in 1991 Thieme Medical Publishers Inc New  
York.

**iii. Breast**

1. Plastic & Reconstructive Surgery of the Breast, A Surgical Atlas. Contribution by Hein?  
Bohmert & Christian J.Gabka in 1997 George Thieme Verlag Stuttgart, New York.
2. "Post mastectomy Reconstruction" 2<sup>nd</sup> Edition Edited by Thomas Dogcart & Luis  
O.Vasconez in 1998 Williams & Wilking 428 East, Preston Street, Baltimore USA.
3. Noone Plastic & Reconstructive Surgery of Breast edited by R.Barrett noone in 1991 by  
Mosby year book Inc. Philadelphia.

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**iv. Aesthetic Surgery**

1. "Aesthetic Facial Plastic Surgery" A multi disciplinary approach by Thomas Romo III & Arthur L. Millman in 2000 by Thieme Medical Publishers New York.
2. "Aesthetic Surgery of Aging face" editor William H. Beeson & E. Gaylen Mc Collough in 1986 by the C.V Mosby Company, St. Louis.
3. "The art of Aesthetic Plastic Surgery" edited by John R. Lewis, Jr. Vol. I & II in 1986 by the little, Brown & Company, London.

**v. Lasers**

1. "Lasers in Facial Aesthetic & Reconstructive Surgery"  
Edited by Brian S.B. in 1999 Williams & Wilking, a. Waverly Company, London.
2. Lasers in Plastic Surgery & Dermatology  
Editor: Brace M. Achauer, Victoria M. Vander Kam & Michael W. Berns in 1992 Thieme Medical Publisher Inc. New York, George Thieme Verlag, New York.

**vi. Tissue Expansion**

Reconstructive & Aesthetic Surgery editor Gordon H. Sasaki in 1998 by Mosby, inc., New York.

**vii. Cleft lip & Cleft palate**

1. Cleft lip & Palate Vol I & II by Samuel Berkowitz, in 1996 by Singular publishing group inc., London.
2. Cleft palate & Cleft lip: A team approach to clinical and Rehabilitation of the patient by Cooper, Hardeng, Krogman, London.

**viii. Nose**

1. "Atlas of Rhinoplasty, Open & Endonasal approaches"  
by Gilbert Aiach in 1996 quality Medical publishing Inc., St. Louis.
2. "Rhinoplasty State of the Art" editors Ronald P. Gruber & George C. Peck in 1993 by Mosby year book, Inc., London.
3. "Aesthetic Reconstruction of Nose" author Gary C. Burget & Frederick J. Menick in 1994 by mosby year book inc., London.

**ix. Leprosy**

"The surgical management of Deformities in Leprosy" & other peripheral Neuropathics" editor Noshir H. Antia Carl D. Enna & Behman M. Daver in 1992, Bombay Oxford university press, Delhi, Calcutta, & Madras.

**x. Paediatric age**

Plastic Surgery in infancy & Child hood, edited by J.G. Mustarde 2<sup>nd</sup> Edition in 1979 by Churchill Livingstone, London.

**xi. Crania facial Surgery**

1. "Comprehensive care of cranio – facial deformities"  
Jeffrey L. Marsh & Michael W. Vannier in 1985 by the C.V. Mosby Company, St. Louis.
2. "Complex Cranio facial problems" edited by Craig R. Dufresne, Benjamin S. Carson & S. James Tin Reich in 1992 Churchill Livingstone, London.



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**xii. Hand**

1. Greens Operative Hand Surgery, 4<sup>th</sup> edition Vol. I & II  
1999 by Churchill Livingstone, London.  
Author David P.Green, Robert N.Hotchiss & William G.Pederson
2. The Hand edited by Raoul Tubiana Vol. I & II in 1981 by W.B.Saunders Company, London.
3. Hand Injuries in Athletes by Strickland & Retting 1992 W.B.Saunders Company, London.

**xiii. Nerve**

1. "Micro reconstruction of Nerve injuries" by Juliak, Tezis in 1987 W.B.Saunders Company, London.
2. Management of Peripheral Nerve Problems and edition by Omer Spinner Vanbeek 1998 by W.B.Saunders Company, Philadelphia.

xiv. "Facial Scar incision, Revision & Camouflage, by J.Regan Thomas & G.Richard Holt in 1989 C.U.Mosby Company, St.Louis.

xv. Advances in Plastics & Reconstructive Surgery Vol. 11 Mutoz B.Hanal, William G.Lineawer Robert persons John E.Wood in 1995 Mosby, London.

**xvi. Cancer**

1. Cancer of Face & Mouth by Irana. Mc. Gregor, & Frances M.Mc Greger in 1986 Churchill Livingstone, London.
2. Exusion & Reconstructive of Head & Neck Cancer.  
Edited by David – S.Soutar & Rammohan Tiwari in 1994 Churchill Livingstone, London.

**xviii. Facio Maxillary injury:**

1. Facial Fractures by S.Antony wolfe for Stephan Baker 1993  
Thieme Medical Publisher INC Newyork.
2. Facial Fractures by Row & Killy

**xix. Genito Urinary**

1. Hypospadias reconstruction
2. Eposordial
3. Vaginal A Ge & vagheo plasty

*Gc*  
Registrar  
M.S. Ramaiah University of Applied Sciences  
Bangalore - 560 054

**Journals**

<i>Essential Reading</i>	<b>Desirable</b>
1) Plastic and reconstructions surgery	1) Craniofacial Surgery
2) Journal of Plastic Reconstructive and Aesthetic Surgery	2) Journal of Trauma
3) Indian Journal of Plastic Surgery	3) Micro vascular surgery
4) Clinics in plastic Surgery	4) Journal of plastic surgery
5) Burns	
6) Hand	

*Shalini*

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Principal and Dean  
M.S. Ramaiah Medical College Staff Hospital  
M.S. Ramaiah University of Applied Sciences  
Bangalore - 560054

Bangalore-560054