



**RAMAIAH
UNIVERSITY**
OF APPLIED SCIENCES

M.S. Ramaiah University of Applied Sciences
Programme Structure and Course Details
Of
MS General Surgery 2022 onwards

M.S. Ramaiah University of Applied Sciences

Ramaiah Medical College

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

Principal and Dean
M.S. Ramaiah Medical College and H.O. J.M.M.
M.S. Ramaiah University of Applied Sciences
Bangalore-560054

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

MS General Surgery Programme 2022

onwards

Programme Code: MD145

M.S. Ramaiah University of Applied Sciences

Ramaiah Medical College



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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 programmes



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Programme Specifications

Faculty	Ramaiah Medical College
Department	General Surgery
Programme	MS General Surgery
Programme Code	MS145
Dean of Faculty	Dr Shalini C Nooyi
Head of Department	Dr H K Rudresh

1. **Title of The Award:** MS in General Surgery
2. **Mode of Study:** Full Time
3. **Awarding Institution /Body:** M.S. Ramaiah University of Applied Sciences
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 MSRUA :** 27th September 2022
8. **Programme Approving Regulating Body and Date of Approval:** National Medical Council of India

9. Rationale for the Programme

The Department of General Surgery is a tertiary care surgical center with 18 faculty divided between five units of General surgery and support all subspecialties including Oncosurgery, Neurosurgery, Paediatric surgery, Plastic surgery, Urology, Cardiothoracic surgery and Vascular Surgery.

Currently the department consists of 3- Professors, 4- Associate Professors, 9- Assistant Professors and 5 Senior Residents.

Five faculty are recognised as post-graduate guides and one faculty is MEU trained.

The department offers both undergraduate and postgraduate programmes (M.B.B.S and M.S) and teaches 150 undergraduate students and guides 12 post-graduate students annually.

Post-graduate intake to start with was two in the year 1991 and gradually increased to eight seats in the year 1998 and 12 from 2021.

Apart from the scheduled under and post graduate teaching the faculty are actively involved in research and academic activities in collaboration with universities, industries, foreign institutions.



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Educational Aims of the Programme

The Goal of MS in General Surgery is to train a doctor to become a competent teacher and researcher in who:

- Is aware of *contemporary advances and developments* in the field of General Surgery.
- Has *acquired the competencies* pertaining to the subject of General Surgery that are required to be practiced at all levels of health system.
- Is able to discharge responsibilities and participate in National Health Education Programme.
- Is oriented to the *principles of research methodology*.
- Has acquired *skills in educating* medical and paramedical professionals.
- Has acquired *skills in effectively communicating* with the students and colleagues from various medical and paramedical fields.
- Has acquired skills of integrating General Surgery with other disciplines as and when needed.
- Has acquired qualities of a good teacher capable of innovations in teaching methodology.
- Has been able to demonstrate adequate management skills to function as an effective leader of the team engaged in teaching and research.

Program Outcomes (PO) for MS General Surgery post graduate students

At the end of the program the postgraduate students should

PO1. Develop the knowledge, skills and attitude to be a competent General Surgeon (C, P).

PO2. Demonstrate a commitment to excellence and continuous professional development with integrity, compassion and sensitivity to patient care. (A)

PO3. Acquire and develop the knowledge, skills and attitude required to be a competent and ethical researcher and teacher. (A, C, P)

PO4. Be able to independently perform diagnostic and surgical procedures applicable to his specialty with a reasonable degree of professionalism and competence. (P)

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Programme specific outcome (PSO) for MS General Surgery Postgraduate students

At the end of the Program, the students should be able

PSO 1. Demonstrate adequate understanding of the anatomy and physiology and its clinical applications related to the speciality and to be able to assimilate this knowledge into Clinical practice. (C,P)

PSO2. Demonstrate the ability to evaluate scientific/clinical information in General Surgery and critically analyze conflicting data and hypothesis. (C,P)

PSO3. Practice his/her speciality efficiently and effectively, backed by scientific knowledge and skills with sufficient understanding of basic sciences, recent advances and clinical applications, keeping in mind the requirement of the patient, community and people at large. (A,C,P)

PSO4. To acquire a strong clinical basis with sound knowledge base to develop the cognitive, psychomotor, research, promotive, preventive, curative and rehabilitative aspects of health and diseases in the specialty of General Surgery required to enable a postgraduate to undertake the independent practice of General Surgery at a specialist level. (A,C,P)

PSO5. To acquire skills in teaching, research methodology, epidemiology, biostatistics, paper & poster preparation, writing research papers, thesis and participate in national health education programs. (C,P)

PSO6. To teach students effectively by using appropriate learning resources, teaching methodology and to acquire skills of integrating General Surgery with other disciplines as and when needed. (C,P)

PSO7. To recognize continuous educational needs and update their knowledge regarding recent advances, latest diagnostics & therapeutic advancements, developments and medico-legal aspects in General Surgery. (A,C,P)

PSO8. The student should develop integrity, accountability, respect, compassion, honest work ethics and empathetic behaviour with patients, students and colleagues. (A,C)

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Course – PO-PSO Mapping

Course Code and name	Program Outcomes POs				Program Specific Outcomes PSOs							
	PO1	PO2	PO3	PO4	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8
MSC501A Basic Sciences Applied Surgery	3	1	3	2	3	1	1	NA	3	1	1	NA
MSC502A Principles and Practices of Surgery	2	3	3	2	2	3	2	2	3	2	2	1
MSC503A Principles and Practice of Operative Surgery	2	2	3	2	2	3	2	2	2	2	1	1
MSC504A Recent Advances in Surgery	3	3	2	2	3	2	3	2	3	2	2	1
MSP501A Thesis – General Surgery	2	3	2	1	1	2	2	2	3	2	1	2



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11. 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/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 year 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 case presentation, 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.
4. Each student will be posted in Government Hospitals for 3 months as a part of DRP as per NMC.

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12. TEACHING AND LEARNING METHODS

During the course, students should have formal training in teaching and research. The sessions should be in the form of:

1. Didactic Teaching

Topics in basic General Surgery, Oncosurgery, Pediatric surgery, Plastic surgery, CTVS, Neurosurgery, Urology and Vascular surgery taught by faculty members with integration with respective Clinical Departments.

2. Training in communication skills - journal club, seminars, pedagogy, demonstrations, tutorials, lectures, quizzing.**3. Hands-on experience** - techniques in basic surgical skills and assisting laparoscopic surgical procedures.**4. Teaching:** participate in the teaching and training programme of undergraduate students and interns.**5.** Participate in seminars, group-discussions, and journal clubs and case discussions.**6. Educational technology** - preparation of Audio Visual aids for teaching, posters/manuscripts for presentation in conferences/workshops and publication in journals.**7.** Participation in formulating evaluation methods: Setting objective questions, Short Answer Questions, Multiple Choice Questions and Objective Structured Practical Examination (OSPE).**8.** Prepare teaching modules.**9.** Participation in organization of workshops**10. Case discussion:** Recommended to be held once a week. All the PG students are expected to take the case and present the case and actively participate in discussion and enter in the log book the relevant details. The presentations will be evaluated using check lists and will carry weightage for internal assessment. A timetable with names of the students and the moderator will be announced in advance.**11. Ward rounds:** Ward rounds pre operatively and post operatively teaching rounds.**12. Service rounds:** Postgraduate students should do service rounds every day for the care of the patients. Newly admitted patients should be worked up by the post graduate student and presented to faculty members the following day.**13. Teaching rounds:** Each unit should have 'grand rounds' for teaching purpose at the bed side. A diary should be maintained for day-to-day activities by the postgraduate students.**14.** Comprehend ethical aspects of biomedical research.**15.** Comprehend the basis of disposal of biomedical waste.

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16. **Rotations:** A major portion of posting should be in General Surgery Department. It should include in-patients, out-patients, ICU, trauma, emergency room, specialty clinics including Oncosurgery, pediatric surgery, plastic surgery, CTVS, neuro surgery, Urology and Vascular surgery.

- a) Inter-unit rotation in the department should be done for a period of up to one year.
- b) Rotation in appropriate related subspecialties for a total period not exceeding 6 months.

Rotational posting in other Departments:

Neurosurgery	4 weeks
Plastic surgery	4 weeks
Oncosurgery	4 weeks
Pediatric surgery	4 weeks
CTS and Vascular surgery	4 weeks
Urology	4 weeks
DRP	12 weeks

Log Book: Every student should maintain a logbook in which a record of the practical exercises completed should be entered. The Log books shall be checked and assessed periodically by the faculty members imparting the training.

17. **Basic Research Methodology Course:** It is mandatory to complete the NMC prescribed online Basic research methodology course during first academic year. This is to introduce the student to basic research methods and to facilitate the completion of dissertation work in partial fulfilment of the course requirements. A postgraduate student 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 during the period of his postgraduate studies so as to make him eligible to appear at the postgraduate degree examination. **Topics for the above presentation / publication should be other than the thesis work.**
18. Department encourages e-learning activities.



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13. Innovative teaching-learning practices

1. Theme-based teaching learning activities
2. Focused discussion during journal club inculcates culture in the areas of research and publication
3. Faculty Lecture during 4th week: Helps in bridging the gap between what is presented during the month and what is not about a particular topic. Also it reinforces learning.
4. Question based Assessment of all the PG students on the topic presented in seminar to assess the understanding of concepts

14 . ASSESSMENT**FORMATIVE ASSESSMENT:**

, i.e., assessment during the training would include: Formative assessment should be continual and should assess medical knowledge, patient care, procedural & academic skills, interpersonal skills, professionalism, self-directed learning and ability to practice in the system.

General Principles

Internal Assessment should be frequent, cover all domains of learning and used to provide feedback to advance learning; it should also cover professionalism and communication skills. The Internal Assessment should be conducted in theory and clinical examination at the end of every term.

Quarterly assessment during the MS training should be based on following educational activities:

Journal based / recent advances learning

Patient based /Laboratory or Skill based learning

Self-directed learning and teaching

Departmental and interdepartmental learning activity

External and Outreach Activities / CMEs

The student to be assessed periodically as per categories listed in postgraduate student appraisal form (Annexure IX).



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SUMMATIVE ASSESSMENT:**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
Basic Sciences Applied to Surgery	MSC501A	Applied aspects of Anatomy, Physiology, biochemistry, pathology, microbiology as applied to General surgery	100
Principles and Practices of Surgery	MSC502A	Principles and Practice of General Surgery	100
Principles and Practice of Operative Surgery	MSC503A	Principles and Practice of General Surgery	100
Recent Advances in Surgery	MSC504A	Recent Developments in General Surgery	100
Thesis- Surgery	MSP501A	Approval 6 months before examination.	

B. Clinical: 200marks

One long case of 100 marks and three short cases of 50 marks each.

C. 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, CT scan, MRI images for interpretation. It includes discussion on dissertation also.

2) Pedagogy Exercise:(20Marks)

A topic be given to each candidate in the beginning of clinical examination. He/she is asked to make a presentation on the topic for 8-10 minutes

D. Total Marks Distribution:

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

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Annexures

1. Evaluation of Journal Review Presentations
2. Evaluation of Pedagogy
3. Evaluation of Seminar Presentations
4. Evaluation of Clinical Case Presentations
5. Check list for evaluation of clinical work in ward / OPD
6. Dissertation Presentation
7. Continuous Evaluation of Dissertation work by Guide / Co-Guide
8. Log book
9. Post Graduate Student Appraisal Form



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Annexure – 1

CHECK-LIST FOR EVALUATION OF JOURNAL REVIEW PRESENTATIONS

Date:

Name of the Student:

Name of the Faculty/Observer:

Sl. No.	Items for observation during presentation	Poor 0	Below Average 1	Average 2	Good 3	Very Good 4
1.	Article chosen was					
2.	Extent of understanding of scope & objectives of the paper by the candidate					
3.	Whether cross references have been consulted					
4.	Whether other relevant publications consulted					
5.	Ability to respond to questions on the paper / subject					
6.	Audio-Visual aids used					
7.	Ability to defend the paper					
8.	Clarity of presentation					
9.	Any other observation					
	Total Score					



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Annexure – 2

EVALUATION OF PEDAGOGY

Name of the candidate:


Date:

Register No.:

Centre:

Topic:

Max. Marks: 20

Skills		Marks
Marks Set induction (1.5marks)	<ul style="list-style-type: none"> Aroused interest in the beginning by relating to previous learning, throwing a new idea, questioning, etc. Specified the objectives of presentation 	
Planning (5 marks)	<ul style="list-style-type: none"> Organized material in a logical sequence Used relevant content matter 	
Presentation(5 marks)	<ul style="list-style-type: none"> Changed the pace of presentation by shifting emphasis, joke, etc Used specific example to illustrate main Ideas Used non-verbal cues, eye contact, etc 	
Pupil participation (5 marks)	<ul style="list-style-type: none"> Allowed questions from students Asked question Solicited/Raised questions Rewarded pupil effort 	
Use of AV aids (2.5 marks)	<ul style="list-style-type: none"> Used proper AV aids used the aid(s) effectively 	
Closure (1 mark)	<ul style="list-style-type: none"> Summarized most important points at the end of the session Overall marks 	
<div style="display: flex; justify-content: space-between; align-items: center;"> <div>____(out of 20)</div> <div style="text-align: right;">  Signature </div> </div>		

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Annexure – 3

CHECK-LIST FOR EVALUATION OF SEMINAR PRESENTATIONS

Date:

Name of the Student:

Name of the Faculty/Observer:

Sl. No.	Items for observation during presentation	Poor 0	Below Average 1	Average 2	Good 3	Very Good 4
1.	Whether other relevant publications consulted					
2.	Whether cross references have been consulted					
3.	Completeness of Preparation					
4.	Clarity of Presentation					
5.	Understanding of subject					
6.	Ability to answer questions					
7.	Time scheduling					
8.	Appropriate use of Audio-Visual aids					
9.	Overall Performance					
10.	Any other observation					
	Total Score					

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ANNEXURE - 4

CHECK LIST FOR EVALUATION FORM FOR CLINICAL PRESENTATION

Name of the Student:

Date:

Name of the Faculty:

Sl. No.	Points to be considered	Poor 0	Below Average 1	Average 2	Above Average 3	Very Good 4
1.	Completeness of history					
2.	Whether all relevant points elicited					
3.	Clarity of Presentation					
4.	Logical order					
5.	Mentioned all positive and negative points of importance					
6.	Accuracy of general physical examination					
7.	Whether all physical signs elicited correctly					
8.	Whether any major signs missed or misinterpreted					
9.	Diagnosis: Whether it follows logically from history and findings					
10.	Investigations required Complete list					
	▪ Relevant order					
	▪ Interpretation of investigations					
11.	Ability to react to questioning					
	Whether it follows logically from history and findings					
12.	Ability to defend diagnosis					
13.	Ability to justify differential diagnosis					
14.	Others					
	Grand Total					



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ANNEXURE 5

CHECK LIST FOR EVALUATION OF CLINICAL WORK IN WARD / OPD

(To be completed once a month by respective Unit Heads including posting in other departments)

Name of the Student:

Date:

Name of the Unit Head

Sl. No.	Points to be considered:	Poor 0	Below Average 1	Average 2	Good 3	Very Good 4
1.	Regularity of attendance					
2.	Punctuality					
3.	Interaction with colleagues and supportive staff					
4.	Maintenance of case records					
5.	Presentation of cases during rounds					
6.	Investigations work up					
7.	Bedside manners					
8.	Rapport with patients					
9.	Counseling patient's relatives for blood donation or Postmortem and Case follow up.					
10.	Overall quality of Ward work					
	Total Score					



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Annexure – 6
CHECK LIST FOR DISSERTATION PRESENTATION

Name:

Faculty/Observer:

Date:

Sl. No.	Points to be considered	Poor 0	Below Average 1	Average 2	Good 3	Very Good 4
1.	Interest shown in selecting a topic					
2.	Appropriate review of literature					
3.	Discussion with guide & other faculty					
4.	Quality of protocol					
5.	Preparation of proforma					

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Annexure – 7

CONTINUOUS EVALUATION OF DISSERTATION WORK BY GUIDE / CO-GUIDE

Name:

Faculty/Observer:

Date:

Sl. No.	Items for observation during presentation	Poor 0	Below Average 1	Average 2	Good 3	Very Good 4
1.	Periodic consultation with guide/co-guide					
2.	Regular collection of case material					
3.	Depth of analysis / discussion					
4.	Departmental presentation of findings					
5.	Quality of final output					
6.	Others					
	Total Score					

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LOG BOOK

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Annexure – 9
POSTGRADUATE STUDENTS APPRAISAL FORM
PRE-CLINICAL DISCIPLINES

Date:

Name of the Department:

Name of the Student:

Period of Training: From To

0: Poor, 1: Average, 2: Good, 3: Very good, 4: Exceptional

Sl. No.	Particulars	Poor 0	Below Average 1	Average 2	Good 3	VeryGood 4
1.	Ability to teach UG students and Juniors					
2.	Knowledge of Subject in PG course					
3.	Performance in JournalClub					
4.	Performance in Seminar					
5.	Punctuality at work					
6.	Ability to work in a team					
7.	Attitude towards colleagues/Faculty					
8.	Ability to communicate with students					
9.	Departmental and interdepartmental activity initiatives					
10.	Thesis /Research work					
11.	Logbook maintenance					
12.	IA eligibility	Yes/No				
13.	Publications	Yes/No				
14.	Paper/Poster presentations	Yes/No				
15.	Remarks					

***REMARKS:** Any significant positive or negative attributes of a postgraduate student to be mentioned. For score less than 3 in any category, remediation must be suggested. Individual feedback to postgraduate student is strongly recommended.

SIGNATURE OF ASSESSEE

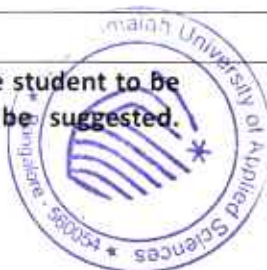
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Course Specification

MS General Surgery 2022 onwards

Course Code: MSC501A

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Course Specifications

Course Title	Basic Sciences Applied to Surgery
Course Code	MSC501A
Department	General Surgery
Faculty	Ramaiah Medical College

Course summary:

This course is designed in such a way that the student will master the basics of Applied Anatomy, Physiology, Pathology of Principles of General Surgery.

Course Outcomes:

CO 1: The students should be conversant with the applied aspects of Anatomy, physiology and Biochemistry, pathophysiology of the diseases. Have knowledge of symptomatology, signs, rationale of investigations and their interpretation to further decide plan of management and surgery. (C, P)

CO 2: The student should have knowledge about basic principles of surgery, surgical instruments & equipment, preoperative preparation and post-operative care including medico legal aspects of surgery. (C)

CO 3: The student should demonstrate integrity, accountability, respect, compassion and dedicated patient care, commitment to excellence, continuous professional development and ethical principles relating to research conduct and publication as applicable to all the specific courses(A)

CO 4: Have knowledge of biomedical waste management and be familiar with appropriate disposal methods for each specimen, sample, reagents, instruments, autoclaving techniques, recycling of products and e-waste as applicable to the field of General surgery(C,P)

Course Content: Basic Sciences as applied to General surgery

Applied aspects of Anatomy, Physiology, Biochemistry, Pathology, Hematology and Microbiology and Pharmacology. History of surgery

Clinical History and examination –Collecting history in detail, carryout clinical examination of various systems & diagnose the condition on clinical grounds.

Rational of diagnostic tests – ordering diagnostic tests with prioritizing the needs, based on the clinical, hospital and the socio-economic condition of the patient.

Concept of Essential Drugs and Rational use of drugs.

Communication skills with patients – Learning effective communication skills including compassionate explanation and giving emotional support to the suffering patient and his family.

Statistics – Descriptive statistics, analytical statistics, qualitative research methodology, research design and critical review of statistical procedures.

Principles of Evidence based medicine – Understanding journal-based literature study; the value of textbook, reference book articles; the value of review articles; original articles and their assessment. Understanding the value of retrospective, prospective, randomized controlled and blinded studies –the principles including meanings of various bio-statistical tests applied in these studies.

Medical Ethics & Social responsibilities of physicians Use of computers in surgery

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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	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
MSC501A Basic Sciences applied to surgery	CO 1	3	3	3	2	2	3	3	3	2	2
	CO 2	3	2	2	2	1	3	2	2	2	2
	CO 3	3	3	2	3	3	3	3	2	2	3
	CO 4	3	2	2	2	3	3	2	2	2	3
3: Very Strong Contribution, 2: Strong Contribution, 1: Moderate Contribution											

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Course Specification

MS General Surgery 2022 onwards

Course Code: MSC502A



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Course Specifications

Course Title	Principles and Practices of Surgery
Course Code	MSC502A
Department	General Surgery
Faculty	Ramaiah Medical College

Course Summary:

This course is designed in such a way that the student will master **Principles and Practices of General Surgery**.

Course Outcomes:

CO 1: Have the knowledge of concept sepsis, sterilization, wound infection, use of antibiotics-resistance, nutrition, fluid electrolyte balance in surgery and wound healing (C)

CO 2: Student should be conversant with the clinical presentation, diagnosis and treatment of common diseases in surgery including preoperative preparation, intraoperative techniques , postoperative care and medico legal aspects of the same. (C,P)

CO 3: Students should have knowledge about Basic knowledge of Anaesthesia including GA and regional blocks , Prosthetic materials used in surgical practice, surgical instruments & devices- its uses and hazards, Telemedicine, teleproctoring and e-learning and Communication skills. (C,P)

Course Content:

Wound healing :Wound healing, Asepsis, antisepsis, sterilization and universal precaution.

Surgical techniques: Surgical knots, sutures, drains, bandages and splints.

Surgical infections : Surgical infections, causes of infections, prevention , Common aerobic and anaerobic organisms and newer organisms causing infection including Helicobacter Pylori ,Tetanus, gas gangrene treatment & prevention, Chronic specific infections TB, Filariasis, Boils, cellulites, abscess, narcotizing fascitis and synergistic infection ,Antibiotic therapy rationale including antibiotic prophylaxis, misuse, abuse ,Hospital acquired nosocomial infection causes and prevention including MRSA etc., HIV, AIDS and Hepatitis B & C, Universal precautions when dealing with patients suffering from these diseases .

Fluid and electrolyte balance in surgery: Fluid and electrolyte balance including acid – base disturbance, consequences,interpretation of blood gas analysis data and management ,Rhabdomyolysis and prevention of renal failure, Shock (septicaemic, hypovolaemic, Neurogenic, anaphylactic), etiology, pathophysiology and management .

Blood transfusion : Blood and blood components, transfusion indication, contraindication, mismatch and prevention and management of complications of massive blood transfusion

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Preoperative preparation: Common preoperative preparation (detailed preoperative workup, risk assessment according to the disease and general condition of the patient as per ASA grade) and detailed postoperative complications following major and minor surgical procedures, Surgical aspects of diabetes mellitus particularly management of diabetic foot and gangrene, preoperative control of diabetes, consequences of hypo- and hyperglycaemia in a postoperative setting.

Bites and stings: Consequences and management of bites and stings including snake, dog, human bites.

Ballistics: Mechanisms and management of missile, blast and gunshot injuries.

Organ transplantation: Basic principles including cadaver donation, related Human Organ Transplant Acts, ethical and medicolegal aspects.

Nutritional support to surgical patients.

Skin and subcutaneous condition: Common skin and subcutaneous condition, Sinus and fistulae, pressure sores.

Vascular diseases: Acute arterial occlusion, diagnosis and initiate management, Types of gangrene, Burger's disease and atherosclerosis, Investigations in case of arterial obstruction, amputation, vascular injuries: basic principles and management, Venous disorders: Varicose veins, Diagnosis, principles of therapy, prevention of DVT: basic principles and management • Lymphatic: Diagnosis and principles of management of lymphangitis and lymphedema • Surgical management of Filariasis

Burns: causes, prevention and management, Wounds of scalp and its management, Recognition, diagnosis and monitoring of patients with head injury, Glasgow coma scale,

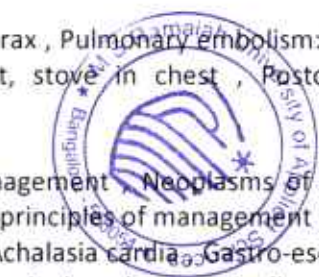
Head and neck: Oral malignancies, Salivary gland neoplasms, Branchial cyst, cystic hygroma, Cervical lymphadenitis nonspecific and tuberculous, metastatic lymph nodes and lymphomas, Diagnosis and principles of management of goitre, Thyroglossal cyst and fistula, Thyrotoxicosis, Thyroid neoplasms, Management of solitary thyroid nodule, Thoracic outlet syndrome,

Breast disorders: Management of nipple discharge, Breast abscess, Clinical breast examination, breast self-examination, Screening and investigation of breast lump, Concept of Single Stop Breast Clinic, Cancer breast diagnosis, staging and multimodality management (common neoadjuvant and adjuvant and palliative chemotherapy protocols and indications of radiation and hormonal therapy, pathology and interpretation of Tumour Markers, breast cancer support groups and counseling)

Thorax: Recognition and treatment of pneumothorax, haemothorax, Pulmonary embolism: Index of suspicion, prevention/recognition and treatment, Flail chest, stove in chest, Postoperative pulmonary complication, Empyema thoracis,

GIT: Recognition of oesophageal atresia and principles of management, Neoplasms of the lung including its prevention by tobacco control, Cancer oesophagus: principles of management including importance of early detection and timely referral to specialist, Achalasia cardia, Gastro-oesophageal reflux disease (GERD), Congenital hypertrophic pyloric stenosis, Aetiopathogenesis, diagnosis and management of peptic ulcer including role of H. Pylori and its diagnosis and eradication, Cancer stomach, Signs and tests of liver dysfunction, Amoebic liver abscess and its non-operative management, Hydatid cyst and its medical and surgical management including laparoscopic management, Portal hypertension, index of suspicion, symptoms and signs of liver failure and 8

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timely referral to a specialist center , Obstructive jaundice with emphasis on differentiating medical vs surgical Jaundice, algorithm of investigation, diagnosis and surgical treatment options , Neoplasms of liver , Rupture spleen , Indications for splenectomy, Peritonitis: causes, recognition, diagnosis, complications and principles of management with knowledge of typhoid perforation, tuberculous peritonitis, postoperative peritonitis , Abdominal pain types and causes with emphasis on diagnosing early intraabdominal acute pathology requiring surgical intervention , Intestinal amoebiasis and other worms manifestation (Ascariasis) and their surgical complications (Intestinal Obstruction, perforation, gastrointestinal bleeding, involvement of biliary tract) , Abdominal tuberculosis both peritoneal and intestinal , Intestinal obstruction , Appendix: Diagnosis and management of acute appendicitis , Appendicular lump and abscess Colon , Congenital disorders, Congenital megacolon , Colitis infective / non infective , Inflammatory bowel diseases , Premalignant conditions of large bowel , Ulcerative colitis , Carcinoma colon , Principles of management of types of colostomy Rectum and Anal Canal: , Congenital disorders, Anorectal anomalies , Prolapse of rectum , Carcinoma rectum , Anal Canal: surgical anatomy, features and management of fissures, fistula - in - ano. , Perianal and ischioanal abscess , Haemorrhoids – Non-operative outpatient procedures for the control of bleeding (Banding, cryotherapy, injection) operative options - open and closed haemorrhoidectomy and stapled haemorrhoidectomy , Anal carcinoma.

Hepatobiliary diseases: Clinical features, diagnosis, complications and principles of management of cholelithiasis and cholecystitis including laparoscopic cholecystectomy , Management of bile duct stones including endoscopic, open and laparoscopic management , Carcinoma gall bladder, incidental cancer gallbladder, index of suspicion and its staging and principles of management , Choledochal cyst . Acute pancreatitis both due to gallstones and alcohol , Chronic pancreatitis , Carcinoma pancreas.

Hernia: Clinical features, diagnosis, complication and principles of management of inguinal hernia including laparoscopic repair , Umbilical, femoral hernia and epigastric hernia , Open and Laparoscopic repair of incisional/primary ventral hernia,

Urology: Urinary symptoms and investigations of urinary tract , Diagnosis and principles of management of urolithiasis , Lower Urinary tract symptoms or prostatism , Benign prostatic hyperplasia; diagnosis and management , Genital tuberculosis in male , Phimosis and paraphimosis , Carcinoma penis , Diagnosis and principles of treatment of undescended testis , Torsion testis , Hydrocele, haematocoele and pyocoele Varicocele: Diagnosis (Medical Board for fitness) , Varicocele: Diagnosis (Medical Board for fitness) , Acute and chronic epididymo-orchitis , Testicular tumours , Principles of management of urethral injuries , Management of soft tissue sarcoma.

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Course Mapping (CO-PO-PSO Mapping)

Course and name	Code	Course Outcomes	Program Outcomes					Program Specific Outcomes				
			PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
MSC503A Principles and Practices of Surgery	CO 1		3	3	3	2	2	3	3	3	2	2
	CO 2		3	3	3	3	2	3	3	3	3	2
	CO 3		3	3	3	3	2	3	3	3	3	3
3: Very Strong Contribution, 2: Strong Contribution, 1: Moderate Contribution												



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Course Specification

MS General Surgery 2022 onwards

Course Code: MSC503A



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COURSE SPECIFICATIONS

Course Title	Principles and practice of operative surgery
Course Code	MSC503A
Department	General Surgery
Faculty	Ramaiah Medical College

Course Summary:

This course is designed in such a way that the student will master the Principles and Practice of General Surgery

Course Outcome:

CO 1 General Surgery as applicable to the common surgical conditions that are encountered in day to day practice (C.P)

CO 2 Radiology, Imaging – computed tomography and magnetic resonance imaging, (MRI) and intervention radiology and angiography as related to general surgery . (C)

CO 3 General Pathologic aspects such as wound healing and also pathology and Pathogenesis of common surgical conditions that are encountered in day to day practice. (A,C,P)

CO 4 General Principles of trauma and trauma surgery(C.P)



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Course Content:**General Surgical Principles**

It includes –

General Surgery as applicable to the common surgical conditions that are encountered in day to day practice (C.P)

Radiology, Imaging – computed tomography and magnetic resonance imaging, (MRI) and intervention radiology and angiography as related to general surgery. (C)

General Pathologic aspects such as wound healing and also pathology and

Pathogenesis of common surgical conditions that are encountered in day to day practice. (A, C.P)

General Principles of trauma and trauma surgery (C.P)



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Course Mapping (CO-PO-PSO Mapping)

Course Code and name	Course Outcomes	Program Outcomes				Program Specific Outcomes							
		PO 1	PO 2	PO 3	PO 4	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8
MSC503A Principles and practice of operative surgery	CO 1	3	2	2	2	3	2	2	2	2	2	1	1
	CO 2	2	1	1	1	2	2	1	1	2	2	1	
	CO 3	2		2	1	1	2	2	1	2	2	2	1
	CO 4	3	1	2	2	3	2	2	2	2	2	2	1
3: Very Strong Contribution, 2: Strong Contribution, 1: Moderate Contribution													



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Course Specification

MS General Surgery 2022 onwards

Course Code: MSC504A



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Course Specifications

Course Title	Recent advances in Surgery
Course Code	MSC504A
Department	General Surgery
Faculty	Ramaiah Medical College

Course Summary:

This course is designed in such a way that the student will master the Recent Developments in General Surgery, Research methodologies in General Surgery, and Cancer Control Programmes.

Course Outcomes:

- CO1** To be upto date with the newer advances in the aetiopathogenesis, clinical presentation, investigative modalities and treatment of both surgical and non-surgical of the common surgical conditions that are encountered in day to day practice
- To have a broad knowledge of the recent advances in general surgical practice
- To be able to communicate to the patient pros and cons of the newer available modalities of treatment

Course Content:

Recent advances in General Surgery and Head Neck surgery

It includes-

1. Recent developments in the diagnosis, pathogenesis, and treatment of common surgical conditions that are encountered in day to day practice.
2. Knowledge of LASERS and fiber optics.
3. Laparoscopic and robotic surgery
4. Latest energy devices in surgery
5. Transplantation
6. Chemotherapy of cancer and Immunotherapy and modalities of the gene therapy, Newer techniques for Radiotherapy.



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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	PSO7	PSO8
MSC501A Recent advances in Surgery	CO 1	2		2	1	2	2	2	1	2	1	1	
3: Very Strong Contribution, 2: Strong Contribution, 1: Moderate Contribution													

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Course Specification

MS General Surgery 2022 onwards

Course Code: MSP501A



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COURSE SPECIFICATIONS

Course Title	THESIS- Surgery
Course Code	MSP501A
Department	General Surgery
Faculty	Ramaiah Medical College

Course Summary:

The course is designed in such a way that the student will master the science of research in terms of designing, conducting, and interpreting the results.

Course Outcome:

- CO 1** The student should be introduced to basic research methodology so that he/she can independently perform fundamental and applied research and he/she should independently write the thesis in accordance with the prescribed norms as per international standards (C,P)
- CO 2** The student should be able to demonstrate integrity, accountability, respect, compassion and dedicated patient care and commitment to excellence, continuous professional development and ethical principles relating to research and publication as applicable to all the specific courses. . (A, C.P)

Course details:

Every candidate pursuing MD Medicine degree course is required to carry out work on a selected research project under the guidance of a recognised post graduate teacher. The results of such a work shall be submitted in the form of a dissertation. The dissertation is aimed to train a post graduate student in research methods and techniques. It includes identification of a problem, formulation of a hypothesis, search and review of literature, getting acquainted with recent advances, designing of a research study, collection of data, critical analysis, comparison of results and drawing conclusions.

Every candidate shall submit to the Registrar (Academic) of the University in the prescribed proforma, a synopsis containing particulars of proposed dissertation work within six months from the date of commencement of the course on or before the dates notified by the University. The synopsis shall be sent through the proper channel.

Such synopsis will be reviewed and the dissertation topic will be registered by the University. No change in the dissertation topic or guide shall be made without prior approval of the University.

The dissertation should be written under the following headings:

1. Introduction
2. Aims or Objectives of study
3. Review of Literature
4. Material and Methods
5. Results
6. Discussion
7. Conclusion
8. Summary
9. References (Vancouver style)
10. Tables
11. Annexures



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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	PSO7	PSO8
MSP505A Thesis-Surgery	CO 1	3	3	3	1	3	3	2	2	2	2	1	1
	CO 2	2	3	2	1		2	2	3	3	1	2	3

3: Very Strong Contribution, 2: Strong Contribution, 1: Moderate Contribution



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STUDY MATERIALS/RESOURCES**Must have books for post graduates**

- Bailey & love's short practice of surgery, by Henry Hamilton Bailey (27th edition).
- Sabiston textbook of surgery, International Edition (20th Edition) by Beaucamp.
- Schwartz's text book of surgery, by F. Charles Brunicaudi.
- A Manual on Clinical Surgery, by S Das (14th edition).
- Hamilton bailey's demonstrations of physical signs in clinical surgery, by John S P Lumley (19th edition).

Must Have Books in Library**GENERAL SURGERY**

- Bailey & love's short practice of surgery, by Henry Hamilton Bailey (27th edition).
- Fischer's Mastery of surgery, by Josef E Fischer (7th edition)
- Sabiston textbook of surgery, International Edition (20th edition) by Beaucamp.
- Schwartz's text book of surgery, by F. Charles Brunicaudi.
- Kirk's general surgical operations, by Richard Novell (6th edition).
- Atlas of general surgery: selected from operative surgery 5th ed. (rob and smith)
- Farquharson's textbook of operative general surgery, by Margret Farquharson (10th edition).
- Last's anatomy: regional and applied, by Chummy S. Sinnatamby (12th edition).

GASTROENTEROLOGY

- Maingot's abdominal operations, by Michael J. Zinner (13th edition).
- Blumgart's Surgery of the Liver, Biliary Tract, and Pancreas, by Jarnagin (6th edition).
- Shackelford's Surgery of the Alimentary Tract, by Charles J. Yeo (8th edition).

NEUROSURGERY

- Handbook of Neurosurgery, by Mark S. Greenberg (9th edition).

PEDIATRIC SURGERY

- Ashcraft's Pediatric Surgery, by George W. Holcomb III (7th edition).

ONCOLOGY

- Jatin Shah's Head and Neck Surgery and Oncology (5th edition).
- DeVita's Cancer Principles & Practice of Oncology (11th edition).

CLINICS

- Surgical Clinics of North America.
- A Manual on Clinical Surgery, by S Das (14th edition).
- Recent Advances in Surgery by Irving Taylor (34th edition).
- Recent Advances in Surgery, by Roshan lall Gupta (16th edition).
- Bedside Clinics in Surgery, by Makhan Lal Saha (3rd edition).
- Hamilton bailey's demonstration of Physical signs in clinical Surgery by John S P Lumley (19th edition).



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- Zollinger's Atlas of Surgical Operations, by E. Christopher Ellison (10th edition)
- ACS Surgery: Principles and Practice, (7th Revised Edition).

EMERGENCY SURGERY

- Hamilton Bailey's Emergency Surgery, by Brain W Ellis (13th edition)

PLASTIC SURGERY

- Fundamental Techniques of Plastic Surgery and Their Surgical Applications, by Ian A McGregor (10th edition)

VASCULAR SURGERY

- Rutherford's Vascular Surgery, by Anton N. Sidawy (9th edition)

UROLOGY

- Smith and Tanagho's General Urology, by Jack W. McAninch and Tom F. Lue (19th edition).

Recommended Journals

03-05 international Journals and 02 national (all indexed) journals.

Annals of surgery.

American journal of surgery.

British journal of surgery.

Seminars in oncology.

Indian journal of surgery.

Indian journal of gastroenterology.

Surgical clinics of North America.

E-learning Sources

Websurg.com

Jime.open.ac.uk

Asbgi.org.uk

Rcseng.ac.uk

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Registrar

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