I. Aim of Program

The aim of the program is to provide the community with competent surgeons capable of managing emergency general surgical conditions as well as common general surgical diseases in a safe, ethical and professional manner, capable of conducting scientific research and committed to continuous professional development and lifelong learning.

II. Intended Learning Outcomes of Program (ILOs)

1. Knowledge and understanding: By the end of the program the candidate should be able to:
   a) Apply basic science knowledge-including anatomy, physiology and pathology- to the practice of general surgery.
   b) Discuss the clinical manifestations, complications, diagnostic modalities, outcomes and treatment plans for common and/or important surgical problems, with special emphasis on emergencies and malignancies.
   c) Explain the methods of screening and early detection of cancer.
   d) Recognize the ethical principles that govern decision-making in surgical practice.
   e) Discuss the principles and practice of preoperative preparation and postoperative care.
   f) Discuss different modalities for management of pain related to surgery.

2. Intellectual skills: By the end of the program the candidate should be able to;
a) Obtain, perform and document a complete medical history and physical examination.

b) Perform an emergency-directed examination for patients with common surgical emergencies.

c) Utilize sources of information like medical records, patient’s family/friends to augment medical history.

d) Interpret patient symptoms and physical findings in terms of their anatomic, pathologic and functional diagnostic significances.

e) Identify problems, prioritize them, and generate a list of differential diagnosis for each problem.

f) Select the most appropriate and cost-effective diagnostic and therapeutic procedure for each problem.

g) Interpret the results of commonly used diagnostic procedures

h) Use the results of all the tests ordered to modify the problem list and the differential diagnosis accordingly.

i) Combine the clinical and investigational database, with the evidence-based knowledge and the skill of deductive reasoning to be proficient in clinical problem-solving.

j) Monitor the effectiveness of therapy by identifying clinical and investigative parameters to be used in assessing the patient’s response to treatment and re-evaluate management plan accordingly.

k) Recognize patients with life/organ-threatening surgical conditions and perform appropriate initial therapy.

3-Professional and practical skills: By the end of the program the candidates should be able to;

a) Identify, investigate and treat patients with general surgical disorders.

b) Take appropriate history, carry out relevant examination and initiate appropriate investigations.

c) Assess and manage trauma patients.

d) Provide patient care in the perioperative period.

e) Recognize and manage bleeding diathesis in the surgical cases.

f) Recognize the need for nutritional support and arrange for enteral nutrition.

g) Perform a simple research study and present the results.

h) Manage the dying patient appropriately.

i) Apply basic surgical skills in the use of instruments and tissue handling.

j) Perform routine bedside procedures.

k) Apply the principles of sterile techniques and infection control guidelines.
3. General and transferable skills: By the end of the program the candidates should be able to;

a) Conduct sincere and effective patient interviews, properly explain the condition and-plan of management, obtain consents and convey bad news in a professional way.

b) Write patient records and properly present them.

c) Communicate, consult and respect the role of other health-care providers.

d) Work effectively and cooperatively in a team.

e) Search effectively electronic resources to find valid appropriate information and use them in management of surgical cases.

f) Respect Patients confidentiality and deliver care in an honest, considerate and compassionate manner.

g) Learn the principles and ethics of research study.

h) Appropriately and ethically get informed consent for indicated surgical interventions.

i) Recognize the ethical principles related to organ donation.

j) Discuss professional errors in an honest way.

III. Academic standards.

External references for standards: Australian College of Surgeons.

IV. Program structure and contents.

**Program admission requirements**

According to the bylaws of the faculty of medicine Cairo University applicants should have MB BCh or equivalent degree. According to Cairo University requirements, all applicants for postgraduate studies should fulfill preliminary courses on the following subjects; Medical statistics I – English language (TOEFL or equivalent degree) – Computer skills (ISDL). Admission to the program is open during July. Training prior to registration may be accredited according to departmental evaluation.

**Program duration:** Three years.

**Program structure:** Total Credit points 160 points.

- **First part:** 1.5 years (table 1) 60 credit points

Candidate should fulfill the following:

**Compulsory courses:** one academic year (30 weeks Starts October)

**Basic sciences courses**

<table>
<thead>
<tr>
<th>Subject</th>
<th>Credit Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surgical anatomy</td>
<td>2 credit points</td>
</tr>
<tr>
<td>Surgical physiology</td>
<td>1 credit points</td>
</tr>
</tbody>
</table>
Medical biochemistry and Molecular Biology                       1 credit points
Surgical pathology                                                                2 credit points
Medical Microbiology and Immunology                                1.5 credit points
Medical Pharmacology                                                         1.5 credit points
Elective courses                                                                 1 credit point
Scientific activities                                                2 credit points
Thesis                                                                     20 credit points

**Residency training program**                                          48 credit points
1 credit point = 15 lectures (one hour each) or 30 hours of surgical training.

### Table 1: First part

<table>
<thead>
<tr>
<th>Courses</th>
<th>Credit points</th>
<th>ILOs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surgical anatomy</td>
<td>2</td>
<td>1a 2d</td>
</tr>
<tr>
<td>Surgical physiology</td>
<td>1</td>
<td>1a 2d</td>
</tr>
<tr>
<td>Medical Biochemistry and Molecular Biology</td>
<td>1</td>
<td>1a 2d</td>
</tr>
<tr>
<td>Surgical Pathology</td>
<td>2</td>
<td>1a 2d</td>
</tr>
<tr>
<td>Medical Microbiology and Immunology</td>
<td>1.5</td>
<td>1a 3k</td>
</tr>
<tr>
<td>Medical Pharmacology</td>
<td>1.5</td>
<td>1a, f</td>
</tr>
<tr>
<td>Elective Courses: the candidate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Critical reading</td>
<td>0.5</td>
<td>1d</td>
</tr>
<tr>
<td>Scientific writing</td>
<td>0.5</td>
<td>3g, h</td>
</tr>
<tr>
<td>Evidence based medicine</td>
<td>0.5</td>
<td>4a, b, c, d, e, f, g, h, i</td>
</tr>
<tr>
<td>Medical statistics</td>
<td>0.5</td>
<td></td>
</tr>
<tr>
<td>Medical ethics</td>
<td>0.5</td>
<td></td>
</tr>
<tr>
<td>Communication skills</td>
<td>0.5</td>
<td></td>
</tr>
<tr>
<td>Scientific activities</td>
<td>2</td>
<td>3g, 4b, c, e</td>
</tr>
<tr>
<td>Residency Training program</td>
<td>48</td>
<td>1a, b, c, e, f</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2a, c, e, f, g, h, i, j</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3a, b, d, e, f, h, l, j, k</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4a, b, c, d, e, f, g, l, j</td>
</tr>
</tbody>
</table>
Candidate should fulfill the following:

**Compulsory courses** one academic year (30 weeks)
- **General surgical course**: 12 credit points.
- **Scientific activities**: 3 credit points.
- **Residency training program**: 65 credit points.

**Master Thesis**: completed during second part 20 credit points.

<table>
<thead>
<tr>
<th>Item</th>
<th>Credit points</th>
<th>ILOs</th>
</tr>
</thead>
<tbody>
<tr>
<td>General surgical course</td>
<td>12</td>
<td>1 b, c, e, f 3 a, c, d, e, f</td>
</tr>
<tr>
<td>Scientific activities</td>
<td>3</td>
<td>3 g 4 b, c, e</td>
</tr>
<tr>
<td>Master thesis</td>
<td>20</td>
<td>4 h</td>
</tr>
<tr>
<td>Residency training program</td>
<td>65</td>
<td>1 a, b, c, e, f 2 a, b, c, d, e, f, g, h, i, j, k 3 a, b, c, d, e, f, h, i, j, k 4 a, b, c, d, e, f, g, i, j</td>
</tr>
</tbody>
</table>

**Residency Training Program**

According to the new Bylaws, July 2009 for post graduate programs, all the students should have a general surgical training for 2 years in 2 different surgical departments 1 year in each department. They should spend 6 months in emergency department. They should spend 3 months in the surgical ICU and 3 months in the burn unit. During these 3 years the students will attend the basic sciences courses as well as the general surgical course. They also should complete the elective course.

**Master Thesis**

- The trainee should conduct a thesis research about one of the subjects related to General Surgery. The subject of the thesis is chosen by a supervisor professor of the trainee. The subject of the thesis should be approved by a special committee chosen by the council of the General Surgical Department.
- The trainee performs a review of literature about his work. He collects data either from the internet or from the international journals or papers.
- The practical part of the work is performed under the supervision of two professors; one of them should be a General Surgeon. If the subject of the thesis entails an experimental part, this can be performed in the experimental department of the Faculty.
- After the trainee finishes the practical work, he writes the thesis under the supervision of his professors. The framework of the thesis consists of an abstract,
introduction or review of literature, patients and methods, results, analysis of results, discussion, summary, conclusions and references.

- Discussion of the thesis is performed by a committee of three professors; one is from the two professors who supervised the work, a second examiner from the Faculty of Medicine, Cairo University, and the third is an external examiner from another Faculty of Medicine in Egypt.

- If the three examiners are satisfied, the candidate gets a certificate that he got his thesis.

**Scientific Activities:**

The students should participate in the scientific activities of the departments such as:

- Journal club (presenting scientific articles) once every two weeks.
- Seminars (including recent topics and controversial issues) once weekly. Students are expected to participate in the discussions.
- Scientific meetings arranged by the department.
- Attendance of Thesis discussions (2 per year).
- Courses in basic and advanced laparoscopy, stapling, sutures and anastomotic techniques in the LRC (learning resource center).
- Courses in basic and advanced trauma life support.

Each activity will be monitored and given credit points registered in a Resident logbook. The student should collect the required points before being allowed to sit for final exam.

**V. Regulations for progression and program completion**

After finishing half of the surgical residency training, attending the specified courses and collecting the required credit points, the student should pass the first part examination which includes the basic science before proceeding to the second part. In case the student fails to pass the examination, he may proceed in the clinical training and can resubmit for the next examination. After passing the first part, the student submits a protocol for master thesis at the beginning of second part. Before submitting to the final exam, he should finish the thesis and get approval, complete residency training program, and collect the required credit points. The candidate will receive his degree after passing the final examination. Master degree should be obtained within a maximum of 6 years after registration date.

**VII. Assessment**

**Quality Control** A committee will be formed headed by a senior professor and representatives of each surgical unit to monitor the learning process and make the necessary adjustments. The committee will present its report to the council.

According to the bylaws of the residency, professors carry continuous assessment during the program. A residency-training program logbook will be kept for each student to document all his/her clinical, laboratory and/or operative/procedural activities as well
as his/her participation in different scientific activities. The head of the department should allow the students to undergo the final examination when they complete their training program and collect the credit points needed.

**Assessment of the First Part of the Master Degree In General Surgery**

Examination the first part of the Master Degree in General Surgery entails:

1. **Examination in surgical anatomy and histology:**
   a- Written examination (2 hours) with a score of 100 marks. The examination is based on multiple essay and M.C.Q. questions,
   b- Oral examination with a score of 50 marks. The candidate is asked to do spotting of the various regions of the body in the dissection room. He is asked to do microscopic examinations of various slides of histology.
   The total is 150 marks.

2. **Examination in physiology, biochemistry and pharmacology:**
   a- Written examination (2 hours) with a score of 100 marks is based on multiple essay and M.C.Q. questions,
   b- Oral examination: with a score of 50 marks. The candidate is asked oral questions about the physiological, biochemical and pharmacological background of surgical problems.
   The total is 150 marks.

3. **Examination in surgical pathology and microbiology:**
   a- Written examination (2 hours) with a score of 100 marks. The examination is based on multiple essay and M.C.Q. questions,
   b- Oral examination with a score of 50 marks. The candidate is asked about all pathological and microbiology problems related to surgery.
   The total is 150 marks.

**Assessment of the Second Part of the Master Degree in General Surgery**

Examination the second part of the Master Degree in General Surgery entails:
- Written examination.
- Clinical examination.
- Oral examination.

**A-Written examination:**
This entails 2 papers examination, each paper examination is of 3 hours duration and is scored for 150 marks. The two papers questions cover all fields of general surgery including vascular, plastic, orthopedic surgery, cardiothoracic and neurosurgery. All sorts of questions may be included:
- Long essay questions.
- Short answer questions.
- Problem solving questions.
- M.C.Q. questions.
The trainee should get at least 60% of the score of written examination to get the degree.
B-Clinical examination:
This entails
1. Long case examination:
The trainee is asked to take a full history and do detailed examination of the patient. The examiners judge on the attitude of the trainee towards the patient, history taking and the ability to elicit physical signs. A discussion about the clinical diagnosis, necessary investigations and the plan of treatment is made. The score of this examination is 100 marks.

2. Short cases examination:
The trainee is asked about 5 cases in an OSCE (Objective structured clinical examination) pattern. The score of this examination is 100 marks.

C- Oral examination: This entails
1- Objective structured practical examination (OSPE):
The trainee pass by 15 stations each showing an X-ray film or a surgical pathology specimen or a short question about medical ethics. All the trainees are examined simultaneously and each trainee answers the questions in his answer sheet the questions are usually M.C.Q. The score of this examination is 40 marks.

2- Surgical anatomy:
This examination is conducted in the dissection room where the trainee is asked to do identification and spotting of anatomical details in an OSPE pattern.
The score of this examination is 30 marks.

3- Operative surgery:
The trainee is asked to discuss the indications, operative technique and complications of operations particularly those related to accident and emergency surgery. The score of this examination is 30 marks.
The trainee should get at least 60% of the total number of the clinical and oral examinations.
### VIII. Evaluation of program intended learning outcomes:

<table>
<thead>
<tr>
<th>Evaluator</th>
<th>Tool</th>
<th>Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Senior Students</td>
<td>Questionnaire at the end of the program</td>
<td>All the PG students</td>
</tr>
<tr>
<td>2. Alumni</td>
<td>The faculty is currently developing an Alumni office for postgraduates</td>
<td>Not yet determined</td>
</tr>
<tr>
<td>3. Stakeholders</td>
<td>A meeting will be arranged during the annual conference of the department</td>
<td>Available representatives from:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Army hospitals</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• National medical insurance</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Medical syndicate</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Ministry of health</td>
</tr>
<tr>
<td>4. External Evaluators</td>
<td>Review the program and courses. Attending the final exam.</td>
<td>Once before implementation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Bi-annual report</td>
</tr>
<tr>
<td>5. College Quality Assurance</td>
<td>Annual program review</td>
<td></td>
</tr>
<tr>
<td>committee</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Date of approval by department council

Signatures       Program Coordinator       Head of Department