Introduction
Fourth year student Clinical Science Electives in the practice of surgery are offered at both Windsor Regional Hospital campuses for a period of two to four weeks and are designed to give the student exposure to clinical areas of his/her interest in any of the following surgical services: General Surgery, Orthopaedic Surgery, Urology and Vascular Surgery.

General Description
Students are integrated into the surgical team and assist in all aspects of patient care. Depending on the service, students will be expected to take part in ward rounds, clinics and observe and assist in operative procedures, as well students may be expected to attend resident teaching.

Surgery Objectives

1. Medical Expert
   a) For each of the clinical conditions listed below, the student will be able to:
      Describe the relevant aspects of the common surgical illnesses and clinical problems, listed below, according to the following headings:
      i. Definition
      ii. Epidemiology
      iii. Causes, including a consideration of each of the following factors:
           • biological
           • psychological
           • social
      iv. Pathogenesis and pathophysiology
      v. Clinical features and complications
      vi. Investigations required to confirm a diagnosis
      vii. Management, including:
           • medical
           • surgical
           • involvement of allied health care professionals
           • nutritional
      viii. Prognosis

1. General Surgery
   a. Anal disease and lower gastrointestinal bleeding
   b. Upper gastrointestinal bleeding
   c. Appendicitis
   d. Inflammatory bowel disease
e. Biliary tract disorders of benign, malignant and congenital etiology
f. Pancreatic disorders of benign, malignant and congenital etiology
g. Acute abdominal pain and peritonitis
h. Bowel obstruction and abdominal wall hernia
i. Breast disease of benign and malignant etiology
j. Colorectal disorders of benign and malignant etiology
k. Disorders of the thyroid, parathyroid, and adrenal glands
l. Disorders of the spleen and liver and portal hypertension
m. Blunt and penetrating trauma.

II. Orthopaedic Surgery
   a. Musculoskeletal infections and tumours
   b. Ligament Injuries and dislocations and musculoskeletal exam
   c. Fracture care
d. Surgical principles of arthritis
e. Orthopedic trauma
f. Principles of pediatric orthopedics
g. Disorders of the lumbo-sacral spine

III. Urology
   a. Genitourinary trauma
   b. Prostate disorders both benign and malignant
c. Common congenital and developmental urologic disorders
d. Urolithiasis
e. Neurogenic bladder
f. Urologic tumours including kidney, collecting system, bladder and scrotum

IV. Vascular Surgery
   a. Cerebrovascular disease
   b. Aortic aneurysms
c. Limb ischemia both acute and chronic
d. Renal and mesenteric arterial occlusive disease.

b) Technical Skills
Surgical procedures that each student should become familiar with during a Surgical Clerkship rotation include:

- OR sterile technique
- Wound closure (simple)
- Suture removal
- N.G. tube
- I.V.
- Airway management and intubation
- Urethral catheter
- Local anaesthesia*
- Casting (e.g., splinting, traction etc)
- Peri-operative Care
2.0 Communicator

Develop rapport, trust, and ethical therapeutic relationships with patients and families.

2.1. Identify good communication as a core physician skill, and that effective physician-patient communication can foster patient satisfaction, physician satisfaction and improved clinical outcomes.

2.2. Establish positive therapeutic relationships, characterized by understanding, trust, respect, honesty and empathy, with patients and their families.

2.3. Respect patient confidentiality and privacy.

Accurately elicit and synthesize relevant information and perspectives of patients and families, colleagues, and other professionals.

2.4. Gather relevant information about a disease, but also about a patient’s beliefs, concerns, expectations and illness experience.

2.5. Seek out and synthesize relevant information from other sources, such as a patient’s family, caregivers and other professionals.

Develop a common understanding on issues, problems and plans with patients, families, and other professionals to develop a shared plan of care.

2.6. Effectively identify and explore problems to be addressed from a patient encounter, including the patient’s context, responses, concerns, and preferences.

2.7. Respect diversity and difference in shared decision-making including, but not limited to, the impact of gender, religion and cultural belief.

2.8. Engage patients, families, and relevant health professionals in shared decision-making to develop a plan of care.

2.9. Effectively address challenging communication issues such as obtaining informed consent, delivering bad news, and addressing anger, confusion and misunderstanding.

2.10. Deliver information to a patient and family, colleagues and other professionals in a humane manner and in such a way that it is understandable, and encourages discussion and participation in decision-making.

Convey effective oral and written information about a medical encounter.

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3.0 Collaborator

Participate effectively and appropriately in an interprofessional healthcare team.

3.1 Work effectively with patients and families.

3.2 Work effectively with other health professionals to prevent, negotiate, and resolve interprofessional conflict.
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Contribute to a positive working environment with colleagues and other members of the health care team.

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4.0 Manager

Contribute to the effectiveness of the healthcare system.

4.1 Describe the structure and function of the healthcare system.

4.2 Describe and access community resources and health care services.

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4.4 Develop the skills required to make ethical decisions for the allocation of finite health care resources.

4.5 Participate effectively in committees and meetings.

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5.0 Health Advocate

Advance the health and well-being of individual patients, communities and populations.

5.1 Use health-related knowledge and skills to contribute to community well-being.

5.2 Identify opportunities for advocacy, health promotion, disease prevention and health care quality improvement in the community, and respond appropriately.

5.3 Identify the legal rights and responsibilities of physicians to the community and to patients.

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5.5 Describe determinants of health and explain their role in individual and community well being.

6.0 Scholar

Develop skills in life-long learning.

6.1 Identify areas of deficiency in one’s personal knowledge or skills.

6.2 Identify appropriate educational resources to address knowledge or skill deficiencies.

6.3 Evaluate personal learning progress using appropriate tools.
6.4 Develop the self-knowledge necessary for personal growth.
6.5 Apply newly gained knowledge or skills to the care of patients.
6.6 Demonstrate skill in disseminating knowledge within the medical and scientific communities and the community.

**Critically evaluate medical information and its sources, and apply this appropriately.**
6.7 Determine the validity and applicability of published evidence through critical appraisal.
6.8 Demonstrate a proclivity towards curiosity and humility, and the ability to question in the face of the unknown.

**Contribute to the creation, dissemination, application and translation of new knowledge and practices.**
6.9 Demonstrate skill in the use of the scientific method to further understanding of human health, disease and illness.
6.10 Attain familiarity with basic scientific and translational research and demonstrate how its results can be applied to clinical medicine.
6.11 Adhere to the principles of ethical research.

7.0 Professional

**Demonstrate commitment to one's teachers, classmates, patients, the profession and society through ethical behaviour.**
7.1 Demonstrate and practice the Four Pillars of Professionalism: Altruism, Integrity, Responsibility and Respect.
7.2 Recognize and respond appropriately to ethical issues.
7.3 Maintain appropriate professional boundaries.
7.4 Appropriately identify and manage conflicts of interest.

**Demonstrate social accountability through a commitment to one's colleagues, patients, the profession and society.**
7.5 Abide by the professional, legal and ethical codes of practice.
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**Demonstrate a commitment to personal health, balancing the goal of excellence in education with a sustainable work ethic.**
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Demonstrate a commitment to reflective practice.

7.11 Develop skills in self-reflection, and an understanding of how one’s biases, attitudes and feelings impact self-learning and service.

7.12 Demonstrate the ability to gather information about personal performance, to know one’s own limits, and to seek help appropriately.

7.13 Reflect on events, especially critical incidents, to deepen self-knowledge.

Type of Clinical Experience
Inpatient and Outpatient

Call Expectations
Night and weekend call will vary depending on the service.

Evaluation Procedure
This will be based on observation of the student’s performance and the Summative Clinical Electives Assessment

LOTTERY:
General Surgery rotations are ONLY available in Blocks 2, 4, 6 & 8 via the On-line Electives Lottery – 1 Student per Block

NON-LOTTERY:
Vascular Surgery, Orthopaedic Surgery and Urology rotations - note:
Registration is NOT available through the 4th Year Electives Lottery. Requests are only processed via the Windsor Non-Lottery 4th Year Elective Request Form on the Medicine 5401 – Year 4 Clinical Sciences Electives web page: https://www.schulich.uwo.ca/medicine/undergraduate/academic_resources/year_4/windsor_nonlottery_4th_year_elective.html

GENERAL SURGERY OBJECTIVES
1. Medical Expert
   A. General
      a) Participate as a full member of the General Surgery team during ward rounds, teaching rounds, clinics, operating room and participate in daily clinical duties. N.B. On the first day, the clerk should discuss the weekly schedule with the senior resident or consultant on his/her respective team.
      b) Gain knowledge of the anatomy, physiology and pathophysiology of common general surgical problems, including trauma.
      c) Learn how to take a detailed history, evaluate (physical examination and ancillary tests) and develop a management plan for patients presenting with common general surgery problems as well the multiply injured trauma patient.
B. Knowledge
   a) Have a basic understanding of the peri-operative evaluation of the surgical patient (including fluids and electrolytes, nutrition and common post-operative complications).
   b) Have a basic knowledge of the anatomy and physiology of the GI tract, endocrine systems (thyroid, adrenal, parathyroid), breast and hernias
   c) Have a basic understanding of the presentation, investigation and management of the following common general surgery problems:
      i) the acute abdomen
      ii) gallbladder disease
      iii) hernias
      iv) perianal disease
      v) colorectal cancer
      vi) breast cancer
      vii) endocrine disorders (thyroid, parathyroid and adrenal)
      viii) trauma patient

C. Skills
   a) Take appropriate history and physical exam on general surgery patients in both elective and emergent scenarios.
   b) Establish a management plan based on appropriate consideration of conservative, medical or surgical options for the disease process.
   c) Participate in the operating room and show appropriate skills and attitudes to:
      i. Prep and drape a sterile field
      ii. Insert urethral catheter (Foley)
      iii. Insert naso-gastric tube
      iv. Identify pertinent operative anatomy
      v. Perform basic surgical techniques (retraction, tissue handling, and basic suturing).

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ORTHOPAEDIC SURGERY OBJECTIVES

1. Medical Expert

a) Cognitive Skills – understand and describe
   i. Pathophysiology
      • Fracture healing and response to injury
      • Soft tissue healing
      • Infection: bone, joint
      • Arthritis: non-inflammatory, inflammatory

b) Psychomotor and Affective Skills – perform
   i. Proficient History
• Patient-centred
• Accurate documentation

ii. Demonstrate Examination
• Anatomic landmarks
• Range of motion
• Peripheral nerves
• Joint instability: paediatric hip, adult knee & shoulder

iii. Patient Care: Emergency Room, Ward and Clinic
• Administration of analgesics
• Closed reduction techniques (fractures and dislocations)
• Splint and case immobilization
• Aspiration and injection
• Utilization of investigations
• Establish treatment plan for common disorders

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**UROLOGY SURGERY OBJECTIVES**

1. **Medical Expert**

a) An understanding of the relevant anatomy, physiology and pathophysiology of patients’ clinical conditions encountered during the selective.

b) Able to perform a thorough history and physical examination on patients assessed in the outpatient clinic and emergency department.

c) Able to present the case history of patients assessed in clinic in a concise manner, and to propose differential diagnoses and possible treatment strategies.

d) Able to perform urethral catheterization and minor suturing under supervision.

b) An understanding of the relevant investigations and indications for intervention of the following urologic conditions:

   i. Benign prostatic hyperplasia
   ii. Prostate cancer
   iii. Urinary tract infections
   iv. Erectile dysfunction
   v. Infertility
   vi. Urinary incontinence
vii. Urinary stone disease
viii. Bladder cancer
ix. Kidney cancer
x. End-stage renal failure
xi. Enuresis

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**VASCULAR SURGERY OBJECTIVES**

1. **Medical Expert**
   
   **A. General**
   
   a) Participate as a full member of the vascular surgery team during ward rounds, teaching rounds, clinics, operating room and participate in daily clinical duties.
   
   b) Learn how to evaluate and treat vascular surgery patients and to understand the systemic nature of atherosclerosis.

   **B. Knowledge**
   
   a) Have a basic understanding of the systemic nature of atherosclerosis and the medical management of vascular surgery patients.
   
   b) Have a basic understanding of what an aneurysm is and the indications for repair as well as treatment options.
   
   c) Have a basic understanding of the indications for intervention in carotid artery disease and the treatment options.
   
   d) Have a basic understanding of the classification of peripheral vascular disease and to understand the indications for intervention and the treatment options.
   
   e) Have a basic understanding of venous and lymphatic disease.

   **C. Skills**
   
   a) Take an appropriate history and physical exam of vascular surgery patients.
   
   b) Order the appropriate investigations for vascular surgery patients.
   
   c) Scrub in and assist in vascular surgery cases.
   
   d) Develop basic suturing, tissue handling and surgical techniques.

2. **Communicator**

**Develop rapport, trust, and ethical therapeutic relationships with patients and families.**

2.1 Identify good communication as a core physician skill and that effective physician-patient communication can foster patient satisfaction, physician satisfaction and improved clinical outcomes.
2.2. Establish positive therapeutic relationships, characterized by understanding, trust, respect, honesty and empathy, with patients and their families.

2.3. Respect patient confidentiality and privacy.

2.4. Accurately elicit and synthesize relevant information and perspectives of patients and families, colleagues, and other professionals.

2.5. Develop a common understanding on issues, problems and plans with patients, families, and other professionals.

2.6. Effectively identify and explore problems to be addressed from a patient encounter, including the patient’s context, responses, concerns, and preferences.

2.7. Respect diversity and difference in shared decision-making including, but not limited to, the impact of gender, religion and cultural belief.

2.8. Engage patients, families, and relevant health professionals in shared decision-making to develop a plan of care.

2.9. Effectively address challenging communication issues such as obtaining informed consent, delivering bad news, and addressing anger, confusion and misunderstanding.

2.10. Deliver information to a patient and family, colleagues and other professionals in a humane manner and in such a way that it is understandable, and encourages discussion and participation in decision-making.

Convey effective oral and written information about a medical encounter.

2.11. Maintain clear, accurate, and appropriate records (i.e., written or electronic) of clinical encounters and plans.

2.12. Effectively present verbal reports of clinical encounters and plans.

3.0 Collaborator

Participate effectively and appropriately in an interprofessional healthcare team.

3.1 Work effectively with patients and families.

3.2 Work effectively with other health professionals to prevent, negotiate, and resolve interprofessional conflict.

3.3 Recognize and respect the diversity of roles, responsibilities and competencies of other professionals in relation to one's own.

3.4 Work with others to assess, plan, provide and integrate care for individual patients (or groups of patients) and review other tasks, such as research problems and educational work.
Contribute to a positive working environment with colleagues and other members of the health care team.

3.5 Recognize interpersonal differences, misunderstandings and limitations that may contribute to interprofessional tension.

3.6 Contribute to the working relationships on teams and participate in a collegial process to maximize the effective functioning of individuals and the team.

4.0 Manager

Contribute to the effectiveness of the healthcare system.

4.1 Describe the structure and function of the healthcare system.

4.2 Describe and access community resources and health care services.

4.3 Access and manage appropriate resources for learning and patient care.

4.4 Develop the skills required to make ethical decisions for the allocation of finite health care resources.

4.5 Participate effectively in committees and meetings.

4.6 Describe and participate in quality assurance initiatives.

5.0 Health Advocate

Advance the health and well-being of individual patients, communities and populations.

5.1 Use health-related knowledge and skills to contribute to community well-being.

5.2 Identify opportunities for advocacy, health promotion, disease prevention and health care quality improvement in the community, and respond appropriately.

5.3 Identify the legal rights and responsibilities of physicians to the community and to patients.

5.4 Identify moral and ethical responsibilities of physicians to the community and to patients.

5.5 Describe determinants of health and explain their role in individual and community well-being.

6.0 Scholar

Develop skills in life-long learning.

6.1 Identify areas of deficiency in one’s personal knowledge or skills.

6.2 Identify appropriate educational resources to address knowledge or skill deficiencies.

6.3 Evaluate personal learning progress using appropriate tools.

6.4 Develop the self-knowledge necessary for personal growth.

6.5 Apply newly gained knowledge or skills to the care of patients.

6.6 Demonstrate skill in disseminating knowledge within the medical and scientific communities and the community.
Critically evaluate medical information and its sources, and apply this appropriately.

6.7 Determine the validity and applicability of published evidence through critical appraisal.

6.8 Demonstrate a proclivity towards curiosity and humility, and the ability to question in the face of the unknown.

Contribute to the creation, dissemination, application and translation of new knowledge and practices.

6.9 Demonstrate skill in the use of the scientific method to further understanding of human health, disease and illness.

6.10 Attain familiarity with basic scientific and translational research and demonstrate how its results can be applied to clinical medicine.

6.11 Adhere to the principles of ethical research.

7.0 Professional

Demonstrate commitment to one's teachers, classmates, patients, the profession and society through ethical behaviour.

7.1 Demonstrate and practice the Four Pillars of Professionalism: Altruism, Integrity, Responsibility and Respect.

7.2 Recognize and respond appropriately to ethical issues.

7.3 Maintain appropriate professional boundaries.

7.4 Appropriately identify and manage conflicts of interest.

Demonstrate social accountability through a commitment to one's colleagues, patients, the profession and society.

7.5 Abide by the professional, legal and ethical codes of practice.

7.6 Respond appropriately to the diverse needs of individuals and communities served.

7.7 Recognize and respond appropriately to the unprofessional behaviour of others.

Demonstrate a commitment to personal health, balancing the goal of excellence in education with a sustainable work ethic.

7.8 Balance personal and professional priorities to ensure personal health, successful education and proficient service.

7.9 Strive to heighten personal and professional awareness and insight.

7.10 Demonstrate knowledge of obligations, resources and options for care in the event that they identify impairment in themselves or colleagues.

Demonstrate a commitment to reflective practice.

7.11 Develop skills in self-reflection, and an understanding of how one’s biases, attitudes and feelings impact self-learning and service.
7.12 Demonstrate the ability to gather information about personal performance, to know one’s own limits, and to seek help appropriately.

7.13 Reflect on events, especially critical incidents, to deepen self-knowledge.

**LOTTERY:**
*General Surgery rotations are ONLY available in Blocks 2, 4, 6 & 8 via the On-line Electives Lottery – 1 Student per Block*

**NON-LOTTERY:**
*Vascular Surgery, Orthopaedic Surgery and Urology rotations - note:*
Registration is NOT available through the 4th Year Electives Lottery. Requests are only processed via the Windsor Non-Lottery 4th Year Elective Request Form on the Medicine 5401 – Year 4 Clinical Sciences Electives web page: [https://www.schulich.uwo.ca/medicine/undergraduate/academic_resources/year_4/windsor_nonlottery_4th_year_elective.html](https://www.schulich.uwo.ca/medicine/undergraduate/academic_resources/year_4/windsor_nonlottery_4th_year_elective.html)*