SURGERY 699 – INDEPENDENT STUDY
0-5 credits.

Independent study projects as arranged with faculty or instructional staff.

**Requisites:** Consent of instructor

**Course Designation:** Level - Advanced

L&S Credit - Counts as Liberal Arts and Science credit in L&S

**Repeatable for Credit:** Yes, unlimited number of completions

**Last Taught:** Spring 2024

**Learning Outcomes:** 1. Develop critical, analytical, and independent thinking skills

**Audience:** Undergraduate

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SURGERY 910 – INDEPENDENT READING AND RESEARCH IN SURGERY
2-8 credits.

Independent research under the direct supervision of Surgery, Orthopedics, or Urology faculty. Projects are individualized to meet research goals within the context of faculty research needs.

**Requisites:** Graduate/professional standing

**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** Yes, unlimited number of completions

**Last Taught:** Spring 2024

**Learning Outcomes:** 1. Formulate a hypothesis or specific objective if study does not involve hypothesis generating research

**Audience:** Graduate

2. Conduct a thorough literature review of the specific research question

**Audience:** Graduate

3. Select and apply statistical knowledge methodologies appropriate for the proposed analyses

**Audience:** Graduate

4. Interpret results correctly and in context of previous findings from literature review

**Audience:** Graduate

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SURGERY 911 – AORTIC DISEASE FROM BENCH TO BEDSIDE
2 credits.

The basics of vascular biology, as it applies to abdominal aortic aneurysm disease. Gain an understanding of pathophysiology of aneurysm disease, animal models of aortic aneurysm, and knowledge on experimental approaches to develop biomarkers and therapeutic strategies. Experience medical treatment of aneurysm disease in the clinic, and how risk factors identified from basic science techniques are applied at the bedside.

**Requisites:** MED SC-M 810, 811, 812, and 813

**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** No

**Last Taught:** Spring 2023

**Learning Outcomes:** 1. Demonstrate mastery of the basics of vascular biology and how this relates to vascular disease

**Audience:** Graduate

2. Practice techniques involved in studying various aspects of vascular biology

**Audience:** Graduate

3. Describe the application of vascular biology technique to the study of vascular disease observed in the clinic

**Audience:** Graduate

4. Demonstrate understanding of the pathophysiology involved in aneurysm development (patient factors and cell biology)

**Audience:** Graduate

5. Describe how pathophysiology is studied in each of the following: animal models, cell culture, and aortic modeling

**Audience:** Graduate

6. Identify the factors for aneurysm growth and rupture

**Audience:** Graduate
**SURGERY 912 – AORTIC DISEASE FROM BENCH TO BOARDROOM**

2 credits.

The anatomy applicable to abdominal aortic aneurysm repair, how this influenced the development of endografts, and how that development is regulated. Investigate the issues involved in aneurysm screening, and experience aneurysm screening in the clinic and aneurysm repair in the operating room. Discuss what is involved in medical device regulation, and how the medical device industry interacts with physicians to develop and distribute technology. Evaluate how the cost of medical devices is distributed to patients.

**Requisites:** MED SC-M 810, 811, 812, and 813

**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** No

**Last Taught:** Spring 2024

**Learning Outcomes:**
1. Describe how aortic aneurysm physiology have informed trials that established criteria for repair
   Audience: Graduate

2. Describe how aortic aneurysm anatomy influences options for endovascular or surgical repair
   Audience: Graduate

3. Describe the biological, clinical, and public health factors influencing successful endograft development
   Audience: Graduate

4. Explain the process for regulatory evaluation of devices from an engineering standpoint to a patient’s perspective.
   Audience: Graduate

5. Describe the anatomical details involved in evaluating an endograft for device regulation
   Audience: Graduate

6. Describe the science behind the imaging techniques involved in regulating and following endografts clinically.
   Audience: Graduate

7. Describe the anatomy and physiology relevant to open abdominal aortic aneurysm repair, and how this may influence a patient’s operative course.
   Audience: Graduate

8. Describe the anatomy and physiology behind endoleaks, and how this influences post-operative endograft surveillance and need for re-intervention.
   Audience: Graduate

9. Explain the biological, clinical, and socio-economic factors involved in advocacy to implement screening for abdominal aortic aneurysm
   Audience: Graduate

10. Analyze the costs and charges associated with specific procedures and how this influences treatment choice for specific patient populations
    Audience: Graduate

11. Synthesize acquired knowledge of basic science and public health implications of aortic aneurysm disease, clinic trials, repair options, and regulatory evaluation of devices to defend application of a device to specific patient populations.
    Audience: Graduate

**SURGERY 919 – INDIVIDUALIZED PHASE 3 CLINICAL ELECTIVE IN SURGERY**

2-4 credits.

Care for hospitalized patients on general surgery or surgical specialty services. Admit new patients, round on previously admitted patients, participate in multidisciplinary rounds, and work to transition patients to the next level of care. Evaluate and manage patient with both common inpatient conditions and medically complex patients requiring collaboration with consulting specialties. Direct supervision by house staff and attending physicians. Participate in regularly scheduled supervisor-student meetings, which involve some or all of the following: rounding on service patients, participating in scheduled operative procedures, presenting cases and teaching topics, and discussing patient cases. Complete independent activities including some or all of the following: reading about patient conditions and preparing for direct patient care as needed. Complete other patient care related learning activities as assigned by instructors.

**Requisites:** Graduate/professional standing

**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** Yes, unlimited number of completions

**Last Taught:** Spring 2024

**Learning Outcomes:**
1. Perform a hypothesis driven history and complete a targeted exam
   Audience: Graduate

2. Develop and present a weighted differential diagnosis for medical and surgical conditions
   Audience: Graduate

3. Using clinical evidence, adapt and justify the working diagnosis
   Audience: Graduate

4. Present a diagnostic plan including laboratory and imaging modalities
   Audience: Graduate

5. Correctly interpret imaging and laboratory findings and communicate results to patients and team members
   Audience: Graduate

6. Develop and implement effective patient management plans
   Audience: Graduate

7. Complete written documentation in a comprehensive, concise, accurate and timely manner
   Audience: Graduate

8. Review, interpret, and present current literature to support patient care
   Audience: Graduate

9. Communicate effectively with patients, families, physicians and non-physician team members
   Audience: Graduate

10. Communicate and collaborate with consultants and/or primary team and other providers to coordinate care
    Audience: Graduate

11. Engage patients in shared decision making regarding tests, orders, and procedures
    Audience: Graduate

12. Avoid medical jargon when communicating with patients and families
    Audience: Graduate
SURGERY 920 – GENERAL SURGERY ELECTIVE
2-4 credits.

Direct supervision by General Surgery senior residents, fellows, and attending physicians. Participate in regularly scheduled supervisor-student meetings, which involve some or all of the following: rounding on service patients, participating in scheduled operative procedures, presenting cases and teaching topics, and discussing patient cases. Complete independent activities including some or all of the following: reading about patient conditions and preparing for direct patient care as needed. Attend conferences associated with the assigned general surgery service. Complete other patient care related learning activities as assigned by instructors; these are dependent on the individual student, the patients under the student's care, and the location.

Requisites: Graduate/professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Spring 2024
Learning Outcomes: 1. Perform a hypothesis driven history and complete a targeted exam
   Audience: Graduate

2. Develop and present a weighted differential diagnosis for medical and surgical conditions
   Audience: Graduate

3. Using clinical evidence, adapt and justify the working diagnosis
   Audience: Graduate

4. Present a diagnostic plan including laboratory and imaging modalities
   Audience: Graduate

5. Correctly interpret imaging and laboratory findings and communicate results to patients and team members
   Audience: Graduate

6. Develop and implement effective patient management plans
   Audience: Graduate

7. Complete written documentation in a comprehensive, concise, accurate and timely manner
   Audience: Graduate

8. Review, interpret, and present current literature to support patient care
   Audience: Graduate

9. Communicate effectively with patients, families, physicians and non-physician team members
   Audience: Graduate

10. Communicate and collaborate with consultants and/or primary team and other providers to coordinate care
    Audience: Graduate

11. Engage patients in shared decision making regarding tests, orders, and procedures
    Audience: Graduate

12. Avoid medical jargon when communicating with patients and families
    Audience: Graduate

13. Recognize limitations and seek assistance as appropriate
    Audience: Graduate

14. Observe the process of obtaining informed consent prior to surgical intervention
    Audience: Graduate

15. Recognize perioperative conditions that determine patient level of care
    Audience: Graduate

16. Recognize a patient requiring urgent or emergent care and initiate intervention
    Audience: Graduate

17. Demonstrate the ability to manage time and understand, access, and utilize the resources and systems necessary to provide optimal patient care
    Audience: Graduate

18. Engage Phase 2 medical students in patient management plans, and other providers to coordinate care
    Audience: Graduate

19. Demonstrate self-directed learning
    Audience: Graduate

20. Recognize a patient requiring urgent or emergent care
    Audience: Graduate

21. Demonstrate respect for patient privacy and autonomy
    Audience: Graduate

22. Avoid medical jargon when communicating with patients and families
    Audience: Graduate

23. Identify system failures and contribute to a culture of safety and improvement
    Audience: Graduate

24. Contribute to the healthcare team objective through effective verbal and written communication that is timely, thorough, and accurate
    Audience: Graduate

25. Demonstrate the importance of effectively obtaining informed consent.
    Audience: Graduate

26. Identify and describe use of common instruments used in surgery.
    Audience: Graduate

27. Recognize the limitations and potential pitfalls of the team approach and impact the provision of healthcare.
    Audience: Graduate

28. Recognize the importance of cost-effective healthcare to patients, providers, and society.
    Audience: Graduate

29. Recognize the importance of cost-effective healthcare to patients, providers, and society.
    Audience: Graduate

30. Use instructional feedback from the faculty, residents, and healthcare institutions, and society.
    Audience: Graduate

SURGERY 938 – INPATIENT ACTING INTERNSHIP-SURGERY
4 credits.

Provides an in-depth exposure to inpatient and operative management of complicated surgical patients. Work under the direct supervision of a senior resident, fellows and faculty. This rotation will provide an opportunity to function at the intern level and play an active role in inpatient management of surgical patients.

Requisites: MED SC-M 810, 811, 812, and 813
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2024
Learning Outcomes: 1. Develop an evidenced-based understanding of the pathophysiology and appropriate management options for common surgical disorders.
   Audience: Graduate

2. Discuss the surgical anatomy, common procedural indications, comorbidities, and prophylactic strategies to reduce post-operative complications.
   Audience: Graduate

3. Demonstrate basic knowledge regarding common post-operative complications and the appropriate management of each.
   Audience: Graduate

4. Describe indications and list the appropriate preoperative evaluations including lab tests, radiographic imaging, and ECG.
   Audience: Graduate

5. Identify and describe use of common instruments used in surgery.
   Audience: Graduate

6. Discuss common intraoperative complications associated with procedures and the appropriate management of each.
   Audience: Graduate

7. Gather a history and perform a physical examination for a surgical patient
   Audience: Graduate

8. Prioritize a differential diagnosis following a clinical encounter
   Audience: Graduate

9. Recommend and interpret common diagnostic and screening tests
   Audience: Graduate

10. Enter and discuss patient orders
    Audience: Graduate

11. Document a clinical encounter in the patient record
    Audience: Graduate

12. Provide an oral presentation of a clinical encounter
    Audience: Graduate

13. Form clinical questions and retrieve evidence to advance patient care
    Audience: Graduate

14. Give or receive a patient handover to transition care responsibility
    Audience: Graduate

15. Collaborate as a member of an interprofessional team
    Audience: Graduate
SURGERY 939 – ADULT ORTHOPEDICS FOR THE FUTURE ORTHOPEDIST ELECTIVE
2-4 credits.

Direct supervision by orthopedic Surgery senior residents, fellows, and attending physicians. Participate in regularly scheduled supervisor-student meetings, which involve some or all of the following: rounding on service patients, participating in scheduled operative procedures, presenting cases and teaching topics, and discussing patient cases. Complete independent activities including some or all of the following: reading about patient conditions and preparing for direct patient care as needed. Present a case of interest based on involvement in and a brief literature review on the treatment or condition. Complete other patient care related learning activities as assigned by instructors; these are dependent on the individual student, the patients under the student’s care, and the location.

Requisites: Graduate/professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Spring 2024
Learning Outcomes: 1. Perform a hypothesis driven history and complete a targeted limb and spinal exam
Audience: Graduate

2. Develop and present a diagnosis and treatment plan and/or surgical indications for common orthopedic conditions/injuries
Audience: Graduate

3. Be able to read and interpret plain radiographs of the limbs an spine
Audience: Graduate

4. Correctly interpret imaging and laboratory findings and communicate results to patients and team members
Audience: Graduate

5. Develop and implement effective patient management plans
Audience: Graduate

6. Complete written documentation in a comprehensive, concise, accurate and timely manner
Audience: Graduate

7. Review, interpret, and present current literature to support patient care
Audience: Graduate

8. Communicate effectively with patients, families, physicians and non-physician team members
Audience: Graduate

9. Communicate and collaborate with consultants and/or primary team and other providers to coordinate care
Audience: Graduate

10. Engage patients in shared decision making regarding tests, orders, and procedures
Audience: Graduate

11. Avoid medical jargon when communicating with patients and families
Audience: Graduate

12. Recognize limitations and seek assistance as appropriate
Audience: Graduate

13. Understand the process of obtaining informed consent prior to surgical intervention
Audience: Graduate

SURGERY 940 – ADULT ORTHOPEDICS FOR THE NON-ORTHOPEDIST ELECTIVE
2-4 credits.

Direct supervision by community orthopedic senior residents, fellows, and attending physicians. Participate in regularly scheduled supervisor-student meetings, which involve some or all of the following: rounding on service patients, participating in scheduled operative procedures, presenting cases and teaching topics, and discussing patient cases. Complete independent activities including some or all of the following: reading about patient conditions and preparing for direct patient care as needed. Attend conferences associated with the assigned general surgery service. Complete other patient care related learning activities as assigned by instructors; these are dependent on the individual student, the patients under the student’s care, and the location.

Requisites: Graduate/professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Spring 2024
Learning Outcomes: 1. Perform a hypothesis driven history and complete a targeted exam
Audience: Graduate

2. Develop and present a weighted differential diagnosis for medical and surgical conditions
Audience: Graduate

3. Using clinical evidence, adapt and justify the working diagnosis
Audience: Graduate

4. Present a diagnostic plan including laboratory and imaging modalities
Audience: Graduate

5. Correctly interpret imaging and laboratory findings and communicate results to patients and team members
Audience: Graduate

6. Develop and implement effective patient management plans
Audience: Graduate

7. Complete written documentation in a comprehensive, concise, accurate and timely manner
Audience: Graduate

8. Review, interpret, and present current literature to support patient care
Audience: Graduate

9. Communicate effectively with patients, families, physicians and non-physician team members
Audience: Graduate

10. Communicate and collaborate with consultants and/or primary team and other providers to coordinate care
Audience: Graduate

11. Engage patients in shared decision making regarding tests, orders, and procedures
Audience: Graduate

12. Avoid medical jargon when communicating with patients and families
Audience: Graduate

13. Recognize limitations and seek assistance as appropriate
Audience: Graduate
**SURGERY 944 – UPPER EXTREMITY ORTHOPAEDIC CLERKSHIP - MARSHFIELD CLINIC**

2-12 credits.

Clinical elective for fourth year medical students.
**Requisites:** Graduate/professional standing
**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement
**Repeatable for Credit:** Yes, unlimited number of completions
**Last Taught:** Spring 2024

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**SURGERY 948 – OTOLARYNGOLOGY ELECTIVE**

2-4 credits.

Direct supervision by Otolaryngology senior residents, fellows, and attending physicians. Participate in regularly scheduled supervisor-student meetings, which involve some or all of the following: rounding on service patients, participating in scheduled operative procedures, presenting cases and teaching topics, and discussing patient cases. Complete independent activities including some or all of the following: reading about patient conditions and preparing for direct patient care as needed. Attend conferences associated with the assigned general surgery service. Complete other patient care related learning activities as assigned by instructors; these are dependent on the individual student, the patients under the student’s care, and the location.
**Requisites:** Graduate/professional standing
**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement
**Repeatable for Credit:** Yes, unlimited number of completions
**Last Taught:** Spring 2024

**Learning Outcomes:**

1. Perform a hypothesis driven history and complete a targeted exam
   Audience: Graduate

2. Develop and present a weighted differential diagnosis for medical and surgical conditions
   Audience: Graduate

3. Using clinical evidence, adapt and justify the working diagnosis
   Audience: Graduate

4. Present a diagnostic plan including laboratory and imaging modalities
   Audience: Graduate

5. Correctly interpret imaging and laboratory findings and communicate results to patients and team members
   Audience: Graduate

6. Develop and implement effective patient management plans
   Audience: Graduate

7. Complete written documentation in a comprehensive, concise, accurate and timely manner
   Audience: Graduate

8. Review, interpret, and present current literature to support patient care
   Audience: Graduate

9. Communicate effectively with patients, families, physicians and non-physician team members
   Audience: Graduate

10. Communicate and collaborate with consultants and/or primary team and other providers to coordinate care
    Audience: Graduate

11. Engage patients in shared decision making regarding tests, orders, and procedures
    Audience: Graduate

12. Avoid medical jargon when communicating with patients and families
    Audience: Graduate

13. Recognize limitations and seek assistance as appropriate
    Audience: Graduate

14. Observe the process of obtaining informed consent prior to surgical intervention
    Audience: Graduate
SURGERY 954 – PERIPHERAL VASCULAR ELECTIVE
2-4 credits.

Direct supervision by Peripheral Vascular Surgery senior residents, fellows, and attending physicians. Participate in regularly scheduled supervisor-student meetings, which involve some or all of the following: rounding on service patients, participating in scheduled operative procedures, presenting cases and teaching topics, and discussing patient cases.

Complete independent activities including some or all of the following: reading about patient conditions and preparing for direct patient care as needed. Attend conferences associated with the assigned general surgery service. Complete other patient care related learning activities as assigned by instructors; these are dependent on the individual student, the patients under the student’s care, and the location.

**Requisites:** Graduate/professional standing

**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** Yes, unlimited number of completions

**Last Taught:** Spring 2024

**Learning Outcomes:**
1. Perform a hypothesis driven history and complete a targeted exam
   Audience: Graduate

2. Develop and present a weighted differential diagnosis for medical and surgical conditions
   Audience: Graduate

3. Using clinical evidence, adapt and justify the working diagnosis
   Audience: Graduate

4. Present a diagnostic plan including laboratory and imaging modalities
   Audience: Graduate

5. Correctly interpret imaging and laboratory findings and communicate results to patients and team members
   Audience: Graduate

6. Develop and implement effective patient management plans
   Audience: Graduate

7. Complete written documentation in a comprehensive, concise, accurate and timely manner
   Audience: Graduate

8. Review, interpret, and present current literature to support patient care
   Audience: Graduate

9. Communicate effectively with patients, families, physicians and non-physician team members
   Audience: Graduate

10. Communicate and collaborate with consultants and/or primary team and other providers to coordinate care
    Audience: Graduate

11. Engage patients in shared decision making regarding tests, orders, and procedures
    Audience: Graduate

12. Avoid medical jargon when communicating with patients and families
    Audience: Graduate

13. Recognize limitations and seek assistance as appropriate
    Audience: Graduate

14. Observe the process of obtaining informed consent prior to surgical intervention
    Audience: Graduate

15. Recognize perioperative conditions that determine patient level of care
    Audience: Graduate

16. Perform minor procedures with supervision
    Audience: Graduate

17. Demonstrate the ability to manage time and understand, access, and interpret physiologic changes that require changing that level of care
    Audience: Graduate

18. Engage Phase 2 medical students in patient management plans, care
    Audience: Graduate

19. Demonstrate self-directed learning
    Audience: Graduate

SURGERY 956 – PLASTIC AND RECONSTRUCTIVE SURGERY ELECTIVE
2-4 credits.

Direct supervision by Plastic Surgery senior residents and attending physicians. Participate in regularly scheduled supervisor-student meetings, which involve some or all of the following: rounding on service patients, participating in scheduled operative procedures, presenting cases and teaching topics, and discussing patient cases.

Complete independent activities including some or all of the following: reading about patient conditions and preparing for direct patient care as needed. Attend conferences associated with the assigned general surgery service. Complete other patient care related learning activities as assigned by instructors; these are dependent on the individual student, the patients under the student’s care, and the location.

**Requisites:** Graduate/professional standing

**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** Yes, unlimited number of completions

**Last Taught:** Spring 2024

**Learning Outcomes:**
1. Perform a hypothesis driven history and complete a targeted exam
   Audience: Graduate

2. Develop and present a weighted differential diagnosis for medical and surgical conditions
   Audience: Graduate

3. Using clinical evidence, adapt and justify the working diagnosis
   Audience: Graduate

4. Present a diagnostic plan including laboratory and imaging modalities
   Audience: Graduate

5. Correctly interpret imaging and laboratory findings and communicate results to patients and team members
   Audience: Graduate

6. Develop and implement effective patient management plans
   Audience: Graduate

7. Complete written documentation in a comprehensive, concise, accurate and timely manner
   Audience: Graduate

8. Review, interpret, and present current literature to support patient care
   Audience: Graduate

9. Communicate effectively with patients, families, physicians and non-physician team members
   Audience: Graduate

10. Communicate and collaborate with consultants and/or primary team and other providers to coordinate care
    Audience: Graduate

11. Engage patients in shared decision making regarding tests, orders, and procedures
    Audience: Graduate

12. Avoid medical jargon when communicating with patients and families
    Audience: Graduate

13. Recognize limitations and seek assistance as appropriate
    Audience: Graduate
SURGERY 960 – TRANSPLANTATION ELECTIVE
2-4 credits.

Direct supervision by Transplant fellows and attending physicians. Participate in regularly scheduled supervisor-student meetings, which involve some or all of the following: rounding on service patients, participating in scheduled operative procedures, presenting cases and teaching topics, and discussing patient cases. Complete independent activities including some or all of the following: reading about patient conditions and preparing for direct patient care as needed. Attend conferences associated with the assigned general surgery service. Complete other patient care related learning activities as assigned by instructors; these are dependent on the individual student, the patients under the student’s care, and the location.

**Requisites:** Graduate/professional standing
**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement
**Repeatable for Credit:** Yes, unlimited number of completions
**Last Taught:** Spring 2024

**Learning Outcomes:**
1. Perform a hypothesis driven history and complete a targeted exam
   Audience: Graduate

2. Develop and present a weighted differential diagnosis for medical and surgical conditions
   Audience: Graduate

3. Using clinical evidence, adapt and justify the working diagnosis
   Audience: Graduate

4. Present a diagnostic plan including laboratory and imaging modalities
   Audience: Graduate

5. Correctly interpret imaging and laboratory findings and communicate results to patients and team members
   Audience: Graduate

6. Develop and implement effective patient management plans
   Audience: Graduate

7. Complete written documentation in a comprehensive, concise, accurate and timely manner
   Audience: Graduate

8. Review, interpret, and present current literature to support patient care
   Audience: Graduate

9. Communicate effectively with patients, families, physicians and non-physician team members
   Audience: Graduate

10. Communicate and collaborate with consultants and/or primary team and other providers to coordinate care
    Audience: Graduate

11. Engage patients in shared decision making regarding tests, orders, and procedures
    Audience: Graduate

12. Avoid medical jargon when communicating with patients and families
    Audience: Graduate

13. Recognize limitations and seek assistance as appropriate
    Audience: Graduate

14. Observe the process of obtaining informed consent prior to surgical intervention
    Audience: Graduate

SURGERY 962 – SURGICAL CRITICAL CARE ELECTIVE
2-4 credits.

Direct supervision by General Surgery senior residents, fellows, and attending physicians. Participate in regularly scheduled supervisor-student meetings, which involve some or all of the following: rounding on service patients, participating in scheduled operative procedures, presenting cases and teaching topics, and discussing patient cases. Complete independent activities including some or all of the following: reading about patient conditions and preparing for direct patient care as needed. Attend conferences associated with the assigned general surgery service. Complete other patient care related learning activities as assigned by instructors; these are dependent on the individual student, the patients under the student’s care, and the location.

**Requisites:** Graduate/professional standing
**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement
**Repeatable for Credit:** Yes, unlimited number of completions
**Last Taught:** Spring 2024

**Learning Outcomes:**
1. Perform a hypothesis driven history and complete a targeted exam
   Audience: Graduate

2. Develop and present a weighted differential diagnosis for medical and surgical conditions
   Audience: Graduate

3. Using clinical evidence, adapt and justify the working diagnosis
   Audience: Graduate

4. Present a diagnostic plan including laboratory and imaging modalities
   Audience: Graduate

5. Correctly interpret imaging and laboratory findings and communicate results to patients and team members
   Audience: Graduate

6. Develop and implement effective patient management plans
   Audience: Graduate

7. Complete written documentation in a comprehensive, concise, accurate and timely manner
   Audience: Graduate

8. Review, interpret, and present current literature to support patient care
   Audience: Graduate

9. Communicate effectively with patients, families, physicians and non-physician team members
   Audience: Graduate

10. Communicate and collaborate with consultants and/or primary team and other providers to coordinate care
    Audience: Graduate

11. Engage patients in shared decision making regarding tests, orders, and procedures
    Audience: Graduate

12. Avoid medical jargon when communicating with patients and families
    Audience: Graduate

13. Recognize limitations and seek assistance as appropriate
    Audience: Graduate

14. Observe the process of obtaining informed consent prior to surgical intervention
    Audience: Graduate
SURGERY 963 – CARDIOTHORACIC SURGERY ELECTIVE
2-4 credits.

Direct supervision by Cardiothoracic fellows and attending physicians. Participate in regularly scheduled supervisor-student meetings, which involve some or all of the following: rounding on service patients, participating in scheduled operative procedures, presenting cases and teaching topics, and discussing patient cases. Complete independent activities including some or all of the following: reading about patient conditions and preparing for direct patient care as needed. Attend conferences associated with the assigned general surgery service. Complete other patient care related learning activities as assigned by instructors; these are dependent on the individual student, the patients under the student’s care, and the location.

Requisites: Graduate/professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Spring 2024
Learning Outcomes: 1. Perform a hypothesis driven history and complete a targeted exam
Audience: Graduate

2. Develop and present a weighted differential diagnosis for medical and surgical conditions
Audience: Graduate

3. Using clinical evidence, adapt and justify the working diagnosis
Audience: Graduate

4. Present a diagnostic plan including laboratory and imaging modalities
Audience: Graduate

5. Correctly interpret imaging and laboratory findings and communicate results to patients and team members
Audience: Graduate

6. Develop and implement effective patient management plans
Audience: Graduate

7. Complete written documentation in a comprehensive, concise, accurate and timely manner
Audience: Graduate

8. Review, interpret, and present current literature to support patient care
Audience: Graduate

9. Communicate effectively with patients, families, physicians and non-physician team members
Audience: Graduate

10. Communicate and collaborate with consultants and/or primary team and other providers to coordinate care
Audience: Graduate

11. Engage patients in shared decision making regarding tests, orders, and procedures
Audience: Graduate

12. Avoid medical jargon when communicating with patients and families
Audience: Graduate

13. Recognize limitations and seek assistance as appropriate
Audience: Graduate

14. Observe the process of obtaining informed consent prior to surgical intervention
Audience: Graduate

SURGERY 967 – UROLOGY ELECTIVE
2-4 credits.

Direct supervision by Urology residents, fellows, and attending physicians. Participate in regularly scheduled supervisor-student meetings, which involve some or all of the following: rounding on service patients, participating in scheduled operative procedures, presenting cases and teaching topics, and discussing patient cases. Complete independent activities including some or all of the following: reading about patient conditions and preparing for direct patient care as needed. Attend conferences associated with the assigned Urology service. Complete other patient care related learning activities as assigned by instructors; these are dependent on the individual student, the patients under the student’s care, and the location.

Requisites: Graduate/professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Spring 2024
Learning Outcomes: 1. Perform a hypothesis driven history and complete a targeted exam
Audience: Graduate

2. Develop and present a weighted differential diagnosis for medical and surgical conditions
Audience: Graduate

3. Using clinical evidence, adapt and justify the working diagnosis
Audience: Graduate

4. Present a diagnostic plan including laboratory and imaging modalities
Audience: Graduate

5. Correctly interpret imaging and laboratory findings and communicate results to patients and team members
Audience: Graduate

6. Develop and implement effective patient management plans
Audience: Graduate

7. Complete written documentation in a comprehensive, concise, accurate and timely manner
Audience: Graduate

8. Review, interpret, and present current literature to support patient care
Audience: Graduate

9. Communicate effectively with patients, families, physicians and non-physician team members
Audience: Graduate

10. Communicate and collaborate with consultants and/or primary team and other providers to coordinate care
Audience: Graduate

11. Engage patients in shared decision making regarding tests, orders, and procedures
Audience: Graduate

12. Avoid medical jargon when communicating with patients and families
Audience: Graduate

13. Recognize limitations and seek assistance as appropriate
Audience: Graduate

14. Observe the process of obtaining informed consent prior to surgical intervention
Audience: Graduate
SURGERY 973 – OPTIMIZING VALUE, QUALITY AND SAFETY IN HEALTHCARE
2 credits.

An in-depth understanding of the key concepts of value, quality and safety is critical to the education of future physicians. The majority of adverse events experienced by hospitalized patients occur in surgery. Surgery offers the ideal setting to explore these three components critical to improving the US healthcare system. Examine factors that influence the care we provide and critically consider the value of this care. Observe efforts to improve value in surgery focusing on quality, safety and appropriate utilization of critical resources and consider areas for improvement. Follow patients in all processes of care from clinic, to the operating room, through their postoperative course, to discharge, and consider how important measures to secure safety and quality are encountered and impact care in the clinical arena. Consider price and allocation of scarce resources. Gather information for their analysis of the patient experience.

Requisites: MED SC-M 810, 811, 812, and 813
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2023

Learning Outcomes:
1. Demonstrate understanding of system efforts to promote high value healthcare.
Audience: Graduate

2. Integrate understanding of complex care for individuals with policy or institutional level strategies to improve health.
Audience: Graduate

3. Identify processes or attitudes that may (or may not) provide for the fair and just distribution of healthcare resources.
Audience: Graduate

SURGERY 974 – PATIENT EDUCATION AS A STRATEGY FOR ADVOCACY
2 credits.

Develop knowledge of how people learn, adult learning principles, and how these apply to medicine. Learn and practice effective interpersonal communication techniques. Reflect on your own strategies for communicating with patients, and develop and implement a plan to improve your communication with patients. Effective communication and patient education allows physicians to act as advocates for their patients. Discuss barriers to patient education, and strategies to mitigate those barriers. Gain insight into communication and education strategies for patients with communication issues.

Requisites: MED SC-M 810, 811, 812, and 813
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2024

Learning Outcomes:
1. Demonstrate understanding of how people learn and adult learning principles and how these apply to medicine.
Audience: Graduate

2. Apply effective interpersonal communication techniques.
Audience: Graduate

3. Recognize how effective communication and patient education allows physicians to act as advocates for their patients.
Audience: Graduate

4. Identify barriers to patient education and use strategies to mitigate those barriers.
Audience: Graduate

5. Demonstrate knowledge of communication and education strategies for patients with communication issues.
Audience: Graduate
SURGERY 975 – MULTIDISCIPLINARY APPROACHES TO COLON CANCER PREVENTION/TREATMENT
2 credits.

Explore the reasons behind failure of colorectal cancer screening programs. Learn the standard of care for prevention, diagnosis, and treatment of colorectal cancer. Focus on all facets of the disease, with active engagement in dialogue to improve screening programs for colorectal cancer. Learn to identify methods to improve medical care and population health. Explore background studies to integrate emerging information on individual’s biologic and genetic risk with population-level factors when deciding upon prevention and treatment options. Work with the various members of the healthcare team involved in treating colorectal cancer and educate the public on the importance of colorectal cancer screening.

**Requisites:** MED SC-M 810, 811, 812, and 813

**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** No

**Last Taught:** Spring 2024

Learning Outcomes:

1. Identify the principles of developing a successful cancer screening program.
   Audience: Graduate

2. Identify the limitations of current cancer screening strategies.
   Audience: Graduate

3. Identify barriers to participation in colon cancer screening program.
   Audience: Graduate

4. Identify the pros and cons of various tests to screen for colorectal cancer and determine which are ideal from the physician’s and patient’s perspective as well as from the public health perspective.
   Audience: Graduate

5. Identify the group of patients who will benefit from chemotherapy and radiation therapy.
   Audience: Graduate

6. Identify the goals of radiation therapy.
   Audience: Graduate

7. Identify the negative side effects of various therapies.
   Audience: Graduate

8. Examine the role of surgery in the treatment of colorectal cancer.
   Audience: Graduate

9. Effectively utilize the principles and optimal timing of the workup of colorectal cancer.
   Audience: Graduate

10. Better identify the genetics of colorectal cancer and the impact on screening programs.
    Audience: Graduate

SURGERY 976 – THE SCIENCE OF OBESITY AND DIABETES
2 credits.

The science of diabetes and obesity as it correlates to the clinical setting. The history of endocrinology and discovery of insulin will provide the basis for understanding hormonal mechanisms controlling fuel metabolism and how these processes become dysfunctional in different disease states. Topics will include pancreatic and extrapancreatic control of metabolism, and diseases linked with obesity, including PCOS, type 2 diabetes, and cancer. Lifestyle, medical, and surgical treatments of obesity and diabetes, including pharmacologic mechanisms of insulin and non-insulin diabetes therapeutics and bariatric surgery, will be highlighted. The public health perspective will shine light on societal factors that influence obesity and diabetes care. Provides an advanced scientific foundation with which to approach evidence-based care and treatment of individuals with obesity and/or diabetes.

**Requisites:** MED SC-M 810, 811, 812, and 813

**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** No

**Last Taught:** Spring 2024

Learning Outcomes:

1. Describe the prevalence of obesity and diabetes and discuss the impact of these conditions on health care costs.
   Audience: Graduate

2. Describe the history of endocrinology and the discovery of insulin and illustrate how key scientific contributions have influenced the modern practice of medicine.
   Audience: Graduate

3. Discuss the biology of digestion and calorie expenditure on weight regulation and the development of obesity.
   Audience: Graduate

4. Illustrate the interplay among neurological, microbiota, and hormonal effects driving insulin resistance, obesity, and type 2 diabetes.
   Audience: Graduate

5. Illustrate the roles of insulin-sensitive tissues in the development of the pathological inflammatory, hyperglycemic, and dyslipidemic state(s) of obesity and diabetes.
   Audience: Graduate

6. Identify obesity-related diseases and syndromes, and discuss unique challenges these pose in the care of the obese/diabetic patient.
   Audience: Graduate

7. Discuss the mechanisms behind pediatric obesity and summarize the effects on childhood development and ways to combat and prevent pediatric obesity.
   Audience: Graduate

8. Identify the unique challenges in assessing the adult patient with obesity, including history and physical considerations as well as lab abnormalities commonly seen in the obese.
   Audience: Graduate

9. Discuss the available lifestyle, medical, and surgical treatments for obesity and diabetes, demonstrating knowledge of the science behind these treatments.
   Audience: Graduate

10. Identify ways that discrimination and prejudice of obese/diabetic patients exists and affects their care and outcomes.
    Audience: Graduate
SURGERY 977 – INJURY AND VIOLENCE PREVENTION
4 credits.

The concept of injury prevention is inherently challenging, despite the systemic global public health problem of violence and injuries. Provides a foundation to approach injury prevention and control. Incorporates curriculum from TEACH-VIP (Training, Educating, and Advancing Collaboration in Health on Violence and Injury Prevention).

Requisites: Graduate/professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2020
Learning Outcomes:
1. Identify resources for injury prevention at the state, national, and international level
   Audience: Graduate
2. Identify community partners at the local and state level in injury prevention
   Audience: Graduate
3. Place an injury into the Haddon matrix and identify places for intervention
   Audience: Graduate
4. Explain the concept of cost-effective analysis and demonstrate basic use of cost-effective analysis.
   Audience: Graduate
5. Describe a variety of successful injury prevention interventions.
   Audience: Graduate
   Audience: Graduate

SURGERY 980 – SEX, GENDER, AND SEXUALITY HEALTH EQUITY
2 credits.

An overview of how concepts of sex, gender, and sexuality in society and medicine impact medical care and lived experience for patients who are LGBQ, transgender, gender-diverse and/or have variations in sex characteristics (VSC). Topics include shared decision-making, allyship, trauma-informed care, gender-affirming care, and unique health disparities in patients who are LGBQ, transgender, gender-diverse and/or those with VSC. Gain insight into patient experience of medical care through patient-centered shadowing/observer opportunities.

Requisites: MED SC-M 810, 811, 812, and 813
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Learning Outcomes:
1. Describe differences between the terms “sex,” “gender,” and “sexuality,” identify potential for conflation of these terms, and apply these terms correctly in the context of clinical care and daily life.
   Audience: Graduate
2. Summarize how historical approaches to medical care for those with variations in sex characteristics (VSC) have impacted the patient-provider relationship on the individual and community level, and identify ethical principles that influence decision-making for early childhood medical care for people with VSC.
   Audience: Graduate
3. Identify how medical and non-medical systems level barriers and societal awareness of needs unique to these populations impact health care interactions and overall health of patients with variations in sex characteristics (VSC), trans and gender-diverse patients, and LGBQ patients.
   Audience: Graduate
4. Integrate knowledge of health disparities experienced by LGBTQI+ patients and apply understanding of available resources and care support for these populations in future clinical practice.
   Audience: Graduate
SURGERY 981 – MINDFULNESS TRAINING FOR RESIDENCY
1 credit.

Gain familiarity with Mindfulness-Based Stress Reduction interventions that have been shown to increase physician well-being and build resiliency. Cultivate non-judgmental and calm awareness of the present moment. Learn and practice formal and informal mindfulness meditation practices. Research mindfulness skills and their benefits to physicians. Understand guided mindful activities. Adapt individualized mindfulness techniques.

**Requisites:** Declared in Doctor of Medicine program with fourth year standing

**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** No

**Last Taught:** Spring 2024

**Learning Outcomes:**
1. Effectively practice the principles of mindfulness-based stress reduction
   Audience: Graduate

2. Gain experience and practice in contemplative movement, 3-point body scan, and breath awareness practice
   Audience: Graduate

3. Develop body and breath awareness and how they can be used to be present with emotions and sensations present during everyday clinical practice
   Audience: Graduate

4. Explore the evidence surrounding the neuroscience and clinical applications of meditation
   Audience: Graduate

5. Develop self-compassion and loving-kindness meditations and practices
   Audience: Graduate

6. Enhance communication skills and compassionate relationships with patients and colleagues
   Audience: Graduate

SURGERY 982 – SURGICAL AND PROCEDURAL CARE EDUCATION TEACHING ELECTIVE
2 credits.

Learn effective methods of teaching procedural skills and of small group case-based learning (CBL) facilitation. Demonstrate effective teaching strategies when instructing more junior medical students in in-person procedural skills (e.g., suturing, knot-tying, ultrasound/doppler, intubation) and facilitating virtual CBL learning. Bolster mastery in surgical and procedural education.

**Requisites:** MED SC-M 810, 811, 812, and 813 and declared in Doctor of Medicine with fourth-year standing

**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** No

**Last Taught:** Spring 2024

**Learning Outcomes:**
1. Use effective surgical and procedural teaching practices.
   Audience: Graduate

2. Develop effective small-group facilitation skills.
   Audience: Graduate

3. Demonstrate effective teaching strategies alongside resident and faculty teachers in the Sim lab and CBL didactic sessions
   Audience: Graduate

4. Mentor Phase 2 (more junior) students and assist them in their introduction to surgical and procedural care
   Audience: Graduate

5. Reflect on specific feedback on applied education and facilitation skills
   Audience: Graduate
SURGERY 983 – COMMON ANORECTAL DISEASES

2 credits.

The diagnosis and treatment of common anorectal diseases in the context of anatomical and physiological basis as it correlates to the clinical setting. The medical and surgical treatment of anorectal disorders will be discussed from the historical background to modern management algorithms. Topics will include fissures, perirectal abscess, fistula-in-ano, external and internal hemorrhoidal diseases, pruritus ani, fecal incontinence, rectal prolapse, obstructive defecation, sexually transmitted infections, and various anorectal manifestations of irritable bowel disease. Symptomatic presentation and natural progression of each of these disease processes will be discussed. Provide a sound scientific foundation with which to approach evidence-based diagnosis, triage, and treatment of patients with acute versus chronic anorectal disorders.

Requisites: MED SC-M 810, 811, 812, and 813
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2024

Learning Outcomes:
1. Describe the normal anatomy of the male and female pelvic floor, structural relationships of the pelvic organs, with special focus on the rectum, anal canal, and perianal spaces
Audience: Graduate

2. Describe the physiology and function of the anal sphincter complex and various defecatory reflexes
Audience: Graduate

3. Discuss the biology of stool formation, propulsion, and expulsion
Audience: Graduate

4. Describe the dietary roles of soluble and insoluble fiber in digestion, and its role in treatment strategies of benign anorectal disorders
Audience: Graduate

5. Describe the anatomical basis of symptomatic internal and external hemorrhoidal disorders in relation to their presentation and natural progression
Audience: Graduate

6. Discuss the surgical options in the treatment of different grades of internal hemorrhoids and the complications associated with each
Audience: Graduate

7. Discuss the etiology of perirectal abscesses and their progression/relationship to fistula-in-ano
Audience: Graduate

8. Describe the various types of fistula-in-ano, diagnostic techniques and imaging modalities, and treatment strategies
Audience: Graduate

9. Explain the rationale for medical versus surgical treatment options for anal fissures
Audience: Graduate

10. Identify the various lifestyle and dietary etiologies for pruritis ani, and explain the rational for treatment algorithm
Audience: Graduate

11. Differentiate between presentations of thrombosed external hemorrhoid, strangulated or prolapsed internal hemorrhoid, and rectal prolapse
Audience: Graduate