

Intro to Surgery Decal

Spring 2017

Welcome to Intro to Surgery. This class provides practical training in fundamental surgical skills, from knot tying to performing an anastomosis, which are skills that surgeons use every day. This course is meant for anyone with an interest in surgery; no prior background knowledge is necessary and all majors are welcome. We will be starting from basic techniques and working our way up. Along the way, we will discuss in more detail several complicated surgical techniques and procedures and how they are performed in the operating room. The field of surgery is very intimidating but also highly intriguing, and we are here to offer you the opportunity to get some basic hands-on experience in this field. Enjoy!

Goals:

1. Gain proficiency in basic surgical techniques through hands-on workshops.
2. Discuss innovation and development, both past and present, in the field of surgery.

Instructors:

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Office hours by appointment

Both instructors have experience in surgical techniques through the Stanford Cardiothoracic Surgical Skills Internship, a program designed to train students in cardiovascular anatomy and physiology as well as medical and surgical skills.

Time and location: Wednesday 6-8pm, 3019 VLSB

Class will meet every Wednesday evening for two hours. Sessions will typically begin with a brief lecture and discussion based on the technique to be covered that day. Three of the lectures will be extended presentations of more involved surgical techniques used in the field. The lecture and discussion will be followed by a hands-on workshop during which students will practice their technique with guidance from the instructors.

Course Requirements: P/NP, 1 unit

In order to receive a passing grade in this course, you must:

1. Attend all class sessions. As this is a workshop-based course, class attendance is a crucial part of your experience. Up to two absences may be cleared by the facilitators. **Any more will result in a NP.**
2. Submit a weekly journal entry reflecting on the techniques you learned during the week's class session, as well as ways in which you hope to improve on those skills. You can also include feedback or suggestions for the instructors. These journal entries will be due before the start of the next class session. The final entry will be a reflection on the class as a whole and your experience over the course of the semester. We will provide further guidance on a week-to-week basis.*
3. Complete all assigned readings and videos. These are intended to supplement the material we cover in class and as such should be completed before each week's session. You will be required to submit a short answer in response to a question based on the readings and/or videos. This will be due before the start of the next class session.*
4. Demonstrate proficiency in the surgical techniques you have learned by participating in a practical exam during Week 11. This practical exam is a culmination of all the practice you have put into your techniques. You will be evaluated on knot tying as well as the three basic types of sutures covered: interrupted, mattress, and running. The results will then be evaluated by the instructors. We will give you feedback focusing primarily on the spacing of your stitches, the tightness of the end knots, and the quality of the overall suture.

*Journal and reading assignments will be provided and submitted via bCourses.

Grading:

Attendance*: 1 point per week (x12)

Journals: 1 point per week (x11)

Reading question: 1 point per week (x11)

Practical exam**: 16 points (x1)

Total: 50 points

To pass: 35 points

*Must have a minimum of 10 attendance points to pass.

**Completion of practical exam is required to pass.

Course Content:

We will focus on two major skills over the course of the semester: knot tying and basic sutures. By the end of the course, you should be proficient in these techniques.

- Knot tying is one of the most fundamental skills that a surgeon needs to master, and there are many different techniques for this. We will cover two-handed, one-handed, and instrument ties.
- Sutures are commonly used for closing a laceration, either of the skin or of an internal vessel. In order to learn this technique, students will need to gain familiarity with the instruments used, particularly the needle driver. We will cover interrupted, mattress, and running stitches.

At the end of the course, we will also cover two more advanced techniques: vessel anastomosis and patches.

- Vessel anastomosis is a technique commonly used for procedures such as aortic root reconstruction. The anastomosis involves connecting two vessels by suturing them together.
- Patches are used for repair of structures such as the pulmonary artery.

Workshops:

As previously mentioned, this class will be heavily workshop-based. We will be using instruments such as needle drivers and forceps from Sim-Vivo. For practice materials, we will use commonplace materials such as bananas and oranges.*

During a given workshop, we will first demonstrate any new techniques being introduced, then give students at least an hour to practice these techniques. During practice time, both instructors will circulate the classroom to provide additional instruction and guidance. Any initial cuts needed for techniques such as the running stitch will be performed by the instructors, so as to avoid injury due to scalpel use. Needles will be collected and properly disposed of at the end of each session.

Open workshops are class sessions intended to allow students an extended period of time to practice more difficult techniques. During this time, students will work to improve and master their technique, with facilitators correcting errors and providing further guidance.

**Note on course materials: We will provide all central materials, including sutures, forceps, and needle holders. Each week students will be asked to bring in their own practice materials, such as bananas or oranges. They can also choose to purchase an optional practice pad, which is available from Sim-Vivo for \$29.95 (http://sim-vivo.com/sim*pad*bare.html#.VsrdNPkrJhE).*

Readings:

Reading assignments will be assigned on a week-to-week basis. These will primarily be taken from recent news or scientific articles about various topics in surgery. Examples include ethical issues involved in solid organ transplantation, a historical view of surgical innovation, and health problems that can lead to a need for surgical intervention. We will also provide readings from various guides for basic surgical techniques, covering instrument use, knot tying, and sutures.

In addition to these weekly reading assignments, we will occasionally assign videos that either complement the reading or provide extra background for the technique we will be covering that week.

Examples of articles that might be assigned for readings:

Apovian, Caroline M. "The Obesity Epidemic – Understanding the Disease and the Treatment." *The New England Journal of Medicine* 374.2 (2016): 177-179. Web. 21 Feb. 2016.

Cameron, Duke. "Why can't the aortic valve be more like the mitral?" *European Journal of Cardio-Thoracic Surgery* 49 (2016): 994. Web. 21 Feb. 2016.

Price, D.P.T. "Legal framework governing deceased organ donation in the UK." *British Journal of Anaesthesia* 108 (2012): i68–i72. Web. 21 Feb. 2016.

Riskin, D.J., Longaker, M.T., Gertner, M., Krummel, T.M. "Innovation in Surgery: A Historical Perspective." *Annals of Surgery* 244.5 (2006): 686-693. Web. 21 Feb. 2016.

Dress Code and Lab Policies:

Students must be dressed appropriately to participate in class each week. Students should wear long pants and closed toed shoes. Long hair should be tied up and there should be no jewelry on the hands. Students will not be able to eat or drink while in the lab.

Schedule*:

Week	Topic	Homework
1. February 1, 2017	- Intro to the class (waiver forms) - Knot tying	Reading 1 Journal 1
2. February 8, 2017	- Interrupted stitch	Reading 2 Journal 2
3. February 15, 2017	- Mattress stitch	Reading 3 Journal 3
4. February 22, 2017	- Lecture 1 - Open workshop	Reading 4 Journal 4
5. March 1, 2017	- Running stitch	Reading 5 Journal 5
6. March 8, 2017	- Lecture 2 - Open workshop	Reading 6 Journal 6
7. March 15, 2017	- Vessel anastomosis	Reading 7 Journal 7
8. March 22, 2017	- Patches	Reading 8 Journal 8
9. April 5, 2017	- Lecture 3 - Purse string stitch, U-stitch	Reading 9 Journal 9
10. April 12, 2017	- Open workshop	Reading 10 Journal 10
11. April 19, 2017	- Practical exam	Reading 11 Journal 11
12. April 26, 2017	- Course wrap-up	

*Schedule subject to change, as necessary.