McLennan

COMMUNITY

C O L L E G E

WACO, TEXAS

COURSE SYLLABUS

AND

INSTRUCTOR PLAN

INTRODUCTION TO SURGICAL TECHNOLOGY

SRGT 1405

Mrs. F. Howard

NOTE: This is a 16-week course.
NOTE: This is a Blended/Hybrid course.

INTRODUCTION TO SURGICAL TECHNOLOGY

SRGT 1405

Course Description:
This is a 16 week introductory course in the theory of Surgical Technology. This course is designed to provide the surgical technologist student with the knowledge of how to function competently and safely in the perioperative setting with an in-depth look at surgical technology theory, surgical pharmacology and anesthesia, technological sciences, and patient care concepts. Student will also learn hospital organization, safety and legal issues, professionalism, and how to deal with ethical issues. Students will be actively involved in applying learned concepts in the classroom and lab setting.

Prerequisites and/or Corequisites:
Prerequisite
> HPRS 1206 Medical Terminology
> BIOL 2401 A&P I
> BIOL 2402 A&P II
> HPRS 2301 Pathophysiology

Co-requisites
> SRGT 1409 Fundamentals of Surgical Technology
> SRGT 1260 Introduction to Clinicals
> SRGT 2130 Professional Readiness

Course Notes and Instructor Recommendations:
- Attend all lectures, clinical and labs and be on time.
- Be prepared for class by having completed all reading and homework assignments **before** class and bring all textbooks and handouts to class each day.
- Check Brightspace **daily** for messages, assignments, grades and any class information updates.
- Cell phones are to be turned on silent during lecture.
- Cell phones are to be turned on off during testing.
- No airpods are allowed during class.
- Program uniforms will be worn in the class setting and the lab.
- Students are allowed to bring laptops, tablets, or ipads but must remember that they are only to be used for course purposes during class time. If the student is caught "surfing the web" then no electronic devices will be allowed.
- Keep the OR lab clean after practicing.
- Testing days will be announced, be on time, no leaving the room after the tests begins, no entrance after the test starts.
- Students are expected to use their MCC issued student email for all communications for this program. Those that need help setting-up or accessing their student email should seek help immediately. The student will be held responsible for all communications that are sent to the student email.
- Students are expected to be in class on time. For security reasons, the **doors to the classroom will be locked from the outside and the doors will remain locked after class starts.**
- Students that leave before half of the class is completed will be counted absent for the day.
- *Please refrain from talking and socializing during lectures.*
- *Please wear your mask and stay social distance apart.*

Going to campus?

Don't forget your mask!

Help us protect our community.
Face coverings are now required on campus.

For more information, visit the COVID-19 updates page.

[You] matter. [I] matter. [Face coverings] matter.

Instructor Information:
Instructor Name: Mrs. Felicia Howard AA, CST
MCC E-mail: fhoward@mclennan.edu
Office Phone Number: 299-8301
Office Location: HP111
Office/Teacher Conference Hours: by appointment
Other Instruction Information:
Any email sent over the weekend or holiday break will be responded to within 24-48 hrs of the following workday.

Virtual Office Hours:

Appointments can be made in advance to meet. NO face to face meeting will be held. ALL office visits will be conducted via Zoom.

Class Location and Time:
Location; HPN 103
Time: Tuesdays- 11:30a- 1:55p
      Fridays- online

Required Text & Materials:
Title: **Bundle:** Surgical Technology for The Surgical Technologist: A Positive Care Approach +
Study Guide with Lab Manual + Mind tap
Author: Kevin Frey
Edition: 5th
Publisher: Cengage
ISBN: 9781337584876

MCC Bookstore Website: http://www.mclennan.edu/bookstore/

Student Support/Resources:
MCC provides a variety of services to support student success in the classroom and in your
academic pursuits to include counseling, tutors, technology help desk, advising, financial aid,
etc. A listing of these and the many other services available to our students is available at
http://www.mclennan.edu/campus-resource-guide/

College personnel recognize that food, housing, and transportation are essential for student
success. If you are having trouble securing these resources, we encourage you to contact a
success coach by calling (254) 299-8226. Students can visit the Completion Center Monday-
Friday from 8:00 a.m.-5:00 p.m. to meet with a success coach and receive additional resources
and support to help reach academic and personal goals. Paulanne's Pantry (MCC's food pantry)
is open 12:00 p.m.-1:00 p.m., Monday-Friday, without an appointment. The Completion Center
and pantry are located on the Second Floor of the Student Services Center (SSC).

MCC Foundation Emergency Grant Fund:
Unanticipated expenses, such as car repairs, medical bills, housing, or job loss can affect us all.
Should an unexpected expense arise, the MCC Foundation has an emergency grant fund that may
be able to assist you. Please go to https://www.mclennan.edu/foundation/scholarships-and-
resources/emergencygrant.html to find out more about the emergency grant. The application can
be found here (https://www.mclennan.edu/foundation/docs/Emergency_Grant_Application.pdf).

Minimum Technical Skills:
Students should have basic computer skills, knowledge of word processing software, and a basic
understanding of how to use search engines and common web browsers.

Backup Plan for Technology:

In the event MCC's technology systems are down, you will be contacted/notified through your MCC student email address. Please note that all assignments and activities will be due on the date specified in the Instructor Plan, unless otherwise noted by the instructor.

* Click Here for the Minimum System Requirements to Utilize MCC's D2L|Brightspace **(https://www.mclennan.edu/center-for-teaching-and-learning/Faculty%20and%20Staff%20Commons/requirements.html)** Click on the link above for information on the minimum system requirements needed to reliably access your courses in MCC's D2L|Brightspace learning management system.

Email Policy:
McLennan Community College would like to remind you of the policy (http://www.mclennan.edu/employees/policy-manual/docs/E-XXXI-B.pdf) regarding college email. All students, faculty, and staff are encouraged to use their McLennan email addresses when conducting college business.

A student's McLennan email address is the preferred email address that college employees should use for official college information or business. Students are expected to read and, if needed, respond in a timely manner to college emails.

Instructional Uses of Email:
Faculty members can determine classroom use of email or electronic communications. Faculty should expect and encourage students to check the college email on a regular basis. Faculty should inform students in the course syllabus if another communication method is to be used and of any special or unusual expectations for electronic communications.

If a faculty member prefers not to communicate by email with her/his students, it should be reflected in the course syllabus and information should be provided for the preferred form of communication.

Email on Mobile Devices:
The College recommends that you set up your mobile device to receive McLennan emails.

Forwarding Emails:
You may forward the emails that come to your McLennan address to alternate email addresses; however, the College will not be held responsible for emails forwarded to an alternate address that may become lost or placed in junk or spam filters.

Methods of Teaching and Learning:
Methods of teaching include but are not limited to:

- Lectures and demonstrations
- Group projects and exercises via online and classroom
- Lab exercises
- Tests/quizzes
- Tutorial video/media/software
- Guest lecturers
- Homework assignments
- Classroom discussions

Program Evaluation System

Evaluation of Students	*Evaluation of Course*
1. Tests, Quizzes	1. Results of student competencies
2. Assignments	2. Results of Final Comprehensive Exam
3. Class Participation	
4. Final Comprehensive Exam	3. Student Course Feedback
5. Lab Competencies	
6. Attendance and Professionalism	

Course Objectives and/or Competencies:

To provide the introductory knowledge and skills that will enable the student to evaluate new concepts, attain more knowledge, and solve problems within the perioperative field through:

1. Learning the foundations of Surgical Technology
2. Utilizing critical thinking skills
3. Practicing professionalism and ethical decision making.
4. Application of physical and biological sciences
5. Basic background in behavioral theories and social sciences.
6. Introduction to the physical, interpersonal and legal aspects of the operating room environment.
7. Introduction to the concepts of technological sciences, electricity, robotics and basic physics
8. Reinforcement of learned aseptic technique and theory.
9. Introduction to pharmacology, the use of medications in the surgical environment and receiving medications in the sterile field.
10. Introduction to Anesthesia and the needs of the patient during anesthesia

Course Outline or Schedule:

Unit 1: Professional Practice

In this unit the student will learn key concepts in professional and personal development; how to apply these concepts in the professional workplace environment; legal and ethical standards that influence the field of surgical technology; communication and teamwork; and the psychosocial needs of the patient. By the end of this unit the student will be able to discuss and apply theory relating to the following topics:

INTRODUCTION TO SURGICAL TECHNOLOGY

SRGT 1405

I.   Introduction to Surgical Technology

A.   **The Surgical Team (Ch. 1) (Test 1)**
1.   Sterile Team Members and Their Roles
1.   First and Second Scrub Roles
a.   Surgical Technologist
b.   LVN/PN
c.   Registered Nurse
2.   Surgical First Assistant
a.   Surgeon
b.   Non-physician Surgical First Assistant
3.   Surgeon
a.   Medical Doctor (MD)
b.   Doctor of Osteopathy (DO)
c.   Doctor of Dental Science (DDS)
d.   Doctor of Dental Medicine (DDM)
e.   Doctor of Podiatric Medicine (DPM)
2.   Non-sterile Team Members and Roles
1.   Circulator
a.   Registered Nurse – Primary
b.   Surgical Technologist – Secondary
2.   Anesthesia Provider
a.   Anesthesiologist (MD or DO)
b.   Certified Registered Nurse Anesthetist (CRNA)
3.   Support Personnel
a.   Anesthesia Technician/Technologist
b.   Biomedical Engineering Technician (BMET)

4. Technician
1.   Clerical
2.   EEG Technicians
3.   Medical Sales Representatives
4.   Patient Care Technician
5.   Perfusionist
6.   Radiology Technician
7.   Central Sterile Supply Technician
B.   Healthcare Facility Chain of Command
1.   Organizational Chart
C.   Healthcare Agencies
1.   Health Insurance
a   Medicare
b   Medicaid
c   Private
d   Preferred Provider Organizations (PPO)
e   Health Maintenance Organizations (HMO)

    2. Prospective Payment Systems
       a   Diagnosis-Related Groups (DRGs)
       3.   Impact of Health Insurance DRGs

D.   Professional Management **(Ch. 1) (Test 1)**
    1.   Traits of the Professional Surgical Technologist
       a) Personal and Professional Behaviors
           1) Aegar Primo (The Patient First)
           2) Critical Thinking Skills
               i)Identify Problems
                    Anticipate and Plan for the Unexpected
               ii) Define Problems
               iii) Gather Information
               iv) Identify solutions
               v) Evaluate Outcomes
                    Analyze role in Prevention Strategies
           3) Surgical conscience
       b) Supports Profession
       c) Participates in Professional Self-development
       d) Educates Others About the Profession
    2.   Obtains and Maintains National Certification from NBSTSA
    3.   Supports and Participates in Continuing Education
    4.   Community Service
    5.   Service to Others
       a) Mentor
       b) Role Mode
    6.   Ethical Behavior

II.   **Professional Organizations and Credentialing**
    1.   Commission on Accreditation of Allied Health Education Programs (CAAHEP)
    2.   Accreditation Review Council on Education in Surgical Technology & Surgical Assisting   (ARC/STSA)
    3.   Association of Surgical Technologists (AST)
       a)   Historical Background
       b)   Goals
       c)   Purpose
       d)   Membership composition
       e)   Committees
       f)   Meetings
       g)   Annual National Conference
       h)   Workshops and Forums
       i)   State Assemblies
       k)   Professional Liability Insurance
       l)   AST Journal *The Surgical Technologist*
    4.   Credentialing Organizations
       a)   National Board of Surgical Technology and Surgical Assisting (NBSTSA)

     5.   Related Professional Organizations
- a) American College of Surgeons (ACS)
- b) American Medical Association (AMA)
- c) American Society of Anesthesiologists (ASA)
- d) Association for Professionals of Infection Control and Epidemiology (APIC)
- e) Association for the Advancement of Medical Instrumentation (AAMI)
- g) Association of periOperative Registered Nurses (AORN)
- h) Centers for Disease Control (CDC)
- i) Emergency Services Advanced Registry for Volunteer Health Professionals (ESAR-VHP)
- j) Environmental Protection Agency (EPA)
- k) Food and Drug Administration (FDA)
- l) International Association of Healthcare Central Service Material Management (IAHCSMM)
- m) The Joint commission
- n) Medical Reserve Corps (MRC)
- o) National Disaster Life Support Education Consortium (NDLSEC)
- p) National Fire Protection Association (NFPA)
- q) National Institute of Occupational Safety and Health (NIOSH)
- r) Occupational Safety and Health Administration (OSHA)
- s) World Health Organization (WHO)

     6.   Private Volunteer Organizations
- a) Local
- b) State
- c) Federal

III. Communication, Teamwork and Professionalism (Ch. 1) (Test 1)

A. Types of communication Relationships
1. Social
2. Professional
3. Therapeutic

B. Goals of Communication
1. Provide Information
2. Obtain Information
3. Express Oneself
4. Solve Problems
5. Persuade Audience
6. Prevent Error in the OR
7. Promote Patient Safety

C. Principles of Communication
1. Types of Communication
- a) Verbal
- b) Nonverbal
  - 1) Tone Content
  - 2) Body Language

            3) Eye Contact
            4) Touch
            5) Written
    2. Components
        a) Sender
        b) Message
        c) Receiver
        d) Feedback
    3. Qualities of Communication
        a) Respect
            1) Eye Contact
            2) Active Listening
            3) Sensitive
            4) Assertiveness vs. Aggressiveness
            5) Clarity
D.   Principles of Good Teamwork and Group Interactions
    1. Team
    2. Discussion of Conflict
    3. Yielding
    4. Acceptance
    5. Politeness
    6. Collaboration
    7. Constructive Criticism
    8. Stages of Team Development
        a) Forming
        b) Storming
        c) Norming
        d) Performing
        e) Adjourning
E. Conflict Management and Problem Behaviors
    1. Verbal Abuse
        a) Causes
        b) Coping
    2. Lateral Violence and Bullying
        a) Chronic
        b) Coping
        c) Reporting
    3. Disruptive Behaviors
        a) Rumors
        b) Coping
    4. Feedback
        a) Positive
        b) Negative
        c) Implementation
    5. Sexual Harassment and Hostile Environment

        a)   Misuse of Power
        b)   Legal Implications
        c)   Coping
        d)   Reporting

F.   Conflict Resolution
    1.   Communication Skills
    2.   Solution Concepts
        a)   Win-Win
        b)   Win-Lose
        c)   Lose-Lose

IV.   Legal Concepts, Risk Management and Ethical Issues (Ch. 2) (Test 1)
    A. Ethical and Moral Issues
    1.   AHA Patient Care Partnership
    2.   Elements of Ethical Decision Making
        a.   Accountability
        b.   Corporate Integrity
        c.   Cultural Beliefs
        d.   Ethical Decision-making
        e.   Ethical Principles
        f.   Morality
        g.   Moral Dilemmas
        h.   Personal Values
        i.   Problem Solving
        j.   Religious Beliefs
        k.   Responsibility
    3.   Surgical Conscience (Ch 1 and 2)
        a.   Concepts
                Commitment to Cost Containment
                Confidentiality
                Nondiscriminatory Treatment of all Patients
                Personal Moral Integrity
                Principles of Asepsis
                Professional Honesty
                Sterile Technique
        b.   Barriers
                Lack of Resources
                Peer Apathy
                Stress

    4.   Legal Issues, Documentation and Risk Management (Ch. 2) (Test 1)
Law

A.   Legal Terminology (Pg. 25-26)

1. Law

    a   Statutory
    b   Common

2. Liability

    a   Corporate
    b   Personal

3. Torts

    a   Define
    b   Intentional
    1)   Civil Assault
    2)   Civil Battery
    3)   False Imprisonment
    4)   Defamation
    5)   Invasion of Privacy

    c   Unintentional

B.   Negligence
1.   Standard of Care
2.   Failure to Meet the Standard of Care
3.   Foreseeability of Harm Existed
4.   Omission of an Act
5.   Commission of an Act
6.   Actual Damages Occurred
7.   Malpractice

    a   Plaintiff
    b   Defendant
    c   Subpoena
    d   Deposition
    e   Trial
    f   Jury
    g   Perjury

C.   Legal Doctrines
1.   Doctrine of Personal Liability
2.   Doctrine of Respondeat Superior
3.   Doctrine of Borrowed Servant
4.   Doctrine of Res Ipsa Loquitur
5.   Doctrine of Foreseeability
6.   Informed consent

    a   Patients Right to Know
    b   Preparation
    c   Verification
    d   Legality

7.   Traditional Principles

    a Aeger Primo
    b Primum Non Nocere
  8. Advance Directives
D. Professional Standards of Conduct
  1. Federal Law
  2. Federal Agencies
  3. State Laws and Regulations
  4. Health Care Facility Policy
  5. Legal Precedent
  6. Professional Agencies
  7. AST Code of Ethics
  8. AST Recommended Standards of Practice
  9. Private Agencies
E. Documentation Concepts
  1. Document Patient Care
    a Patient Care Intervention
    b Evaluation
    c Outcomes
  2. Types of Documents
    a Intraoperative Record
    b Consent Forms
      1) Surgical
      2) Anesthesia
      3) Sterilization
      4) Special Procedure
      5) Implants
    c Sentinel Event Report
    d Patient Charge
    e Count
    f Pathology
    g Laboratory
    h Patient Medical Record
    i Anesthesia Record
    j Birth and Death Certificates
    k Preference Cards
    l Timeout
  3. Legal Elements of Documentation
    a Standard Terminology and Abbreviations
      1) The Joint commission "do not use" list
    b Spelling
    c Factual Information
    d Legible
    e Correction of Errors
    f Legal Signature of Reporter
F. Operating Room Sentinel Events

1. Harm Secondary to Use of Defective Equipment and Instruments
   a   Safe Medical Devices Act
2. Exceeding Authority or Accepted Functions
3. Loss or Damage of Patient's Property
4. Abandonment of Patient
5. Patient Misidentification
6. Lack of Informed consent
7. Documentation Errors
8.. Harm Secondary to Major Break in Sterile Technique
9.. Specimen
   a   Improper Identification
   b   Loss
10. Burns Due to Use of ESU
11. Medication Errors
    a   Incorrect Medications
    b   Incorrect Administration
12. Patient Positioning
    a   Patient Injury
    b   Inadequate Padding
13. Patient Falls
14. Retained Foreign Bodies
15. Incorrect Procedure
16. Critical Events
    a   Failure to Recognize
    b   Failure to Act
17. Invasion of Privacy
18. Assault
19. Battery
20. Defamation
21. Breach of confidentiality
    a   HIPAA
    b   Confidentiality Statement
G. Risk Management for Sentinel Events
    1. Objectives
       a   Minimize Risks to Patients
       b   Minimize Risks to Employees
       c   Proactive Identification Potential Causes of Sentinel Events
       d   Implement Policies and Procedures to Eliminate/reduce Sentinel Events
       e   Procedures for Collecting Data on Sentinel Events
    2. Risk Management Issues
       a   Reduced Staffing
       b   Patient Safety
       c   Employee Rights
    3. Prevention Practices
       a   Preventative Maintenance of Equipment

        b   Continuing Education for Employees
- 1) Annual Updates
- 2) Review of Policies and Procedures

        c   Location and Use of Emergency Equipment

4. Managing Sentinel Events
   - a   Report Unsafe Conditions
   - b   Malfunctioning Equipment Reported
   - c   Patient Injury
     - 1) Immediately Reported
     - 2) Treat
   - d   Employee Injury
     - 1) Immediately Reported
     - 2) Treated
   - e   Documentation
     - 1) Sentinel Event Report
     - 2) Witnesses

H. Ethical Conflicts in Clinical Practice
   - a. Abortion
   - b. Animal Experimentation
   - c. Communicable Diseases
   - d. Elective Sterilization
   - e. Genetic Engineering
   - f. Gender Reassignment
   - g. Good Samaritan Law
   - h. Human Experimentation
   - i. Medicare Fraud
   - j. Organ Donation and Transplantation
   - k. Refusal of Treatment
   - l. Reproductive Technology
   - m. In-vitro Fertilization
   - n. Artificial Insemination
   - o. Right-to-die
   - p. Assisted Suicide
   - q. End-of-life Decisions
   - r. Substance Abuse
   - s. Impaired Health Care Provider
   - t. Self
   - u. Stem Cell Research
   - v. Work Place Violence

Classroom Activities
Problem solve ethical issues
HIPAA
Research professional organizations

Critical Thinking
Case studies from the workbook

Student's Responsibilities:
Read: Surgical Technology for The Surgical Technologist
       Ch. 1 and Ch. 2
       Classroom Handout's
Create 10 Flash cards per chapter
Memorize AST Code of Ethics
Complete exercises Ch. 1 and 2 in MindTap
Print lecture outline and bring to class (optional)
Be prepared for Unit Test and pop quizzes (Kahoot or Traditional)

Employability Skills will be discussed in SRGT 2130 Professional Readiness

Unit 2: Patient Care Concepts
     In this unit the student will learn the physical as well as psychological needs of various patient demographics in surgery. Students will learn how to address safety issues that involve special populations as well as how to handle death in the operating room. By the end of this unit the student will be able to discuss and apply theory relating to the following topics:

I.   **The Surgical Patient (Ch. 3) (Test 2)**

    A.   **Maslow's Hierarchy of Needs**
        1.   Physical and Physiological Needs
        2.   Psychological Needs
        3.   Social Needs
        4.   Spiritual Needs
        5.   Cultural Needs
    B.   Special Populations **(Ch. 4)**
        1.   Pediatrics
        2.   Geriatrics
        3.   Bariatric
        4.   Immunocompromised Patient
        5.   Diabetic Patient
        6.   Pregnant Patient
        7.   Physically Challenged Patient
        8.   Mentally Challenged Patient
            a)   Disabilities
            b)   Post-traumatic Stress Syndrome (PTSD)
       9. Isolation Patient
        10.   Trauma Patient
        11.   Language Barriers
        12.   Substance Abuse Patient

II.   Death and Dying (Ch. 3) (Test 2)
    A   Death and Dying
          1.   Perceptions of Death and Dying
                    a)   Religious Beliefs
                    b)   Cultural Beliefs
                    c)   Ethnicity Beliefs
                    d)   Attitudes of Family Members
                    e)   Attitudes of Caregivers
          2.   Categories of Causes of Death
                    a)   Accidental
                    b)   Terminal
                    c)   Prolonged (chronic)
                    d)   Sudden
          3.   Definitions of Death
                    a)   Cardiac
                    b)   Higher Brain
                    c)   Whole Brain
          4.   Responses to Loss/Grief (Kubler-Ross)
                    a)   Denial
                    b)   Anger
                    c)   Bargaining
                    d)   Depression
                    e)   Acceptance
          5.   Quality of life vs. Quantity of Life
                    a)   Palliative Procedures
                    b)   Therapeutic Procedures
                    c)   Life-Support Therapy
                    d)   Life Sustaining Therapy
                    e)   Euthanasia
                    f)   Right to Die
                    g)   Advance Directives
                            1)   Living Will
                            2)   Durable Power of Attorney
                    h).   Do Not Resuscitate (DNR)
                            1)   Medical
                            2)   Surgical

         6.   Death of a Patient in the Operating Room
                    a)   Notification of Perioperative Manager
                    b)   Notification of Family and Significant Others
                    c)   Notification of Chaplain/Clergy
                    d)   Preparation of the Body for Family Viewing
                    e)   Forensic Issues and Coroner's Cases
                    f)   Postmortem Patient Care/Autopsy

       g)   State and Federal Law and Hospital Policy
       h)   Documentation
7.   Coping Strategies
       a)   Empathy
       b)   Grieving Process
       c)   Share Feelings with Others
       d)   Fears
       e)   Team Effort
       f)   Support Groups for Staff Members
       g)   Support Groups for Bereaved Families
       h)   Chaplain/Clergy

8.   Organ and Tissue Recovery and Transplantation
       a)   Organ and Tissue Recovery
          1)   Establishing Death
          2)   Consent for Donation
          3)   Recovery Team
          4)   Types of Recovery
       b)   Transplantation

Classroom Activities

Fill out an Advanced Directive and a Living Will
Case studies from workbook
Maslow's Project
Special Populations Project

Student's Responsibilities:

Read: Surgical Technology for The Surgical Technologist
         Ch. 3 & 4
Classroom Handout's
Create 10 Flash Cards per chapter
Complete exercises for Ch. 3 & 4 in MindTap
Print lecture outline and bring to class (optional)
Be prepared for Unit Test and pop quizzes (Kahoot or Traditional)

UNIT 3: Technological Sciences

In this unit, the student will learn the basic concepts of how biomedical science relates to the operating room and the surgical technologist. Students will be able to move safely and confidently within the perioperative environment and be able to recognize safety concerns. By the end of this unit, the student will be able to discuss and apply theory relating to the following topics:

I.   Physical Environment and Safety Standards (Ch. 5) (Test 3)

Healthcare Facility Organization and Management

A.   Related Health Care Facility Departments
      1.   Direct Patient Care
          a   Nursing Care Units
          b   Diagnostic Imaging
          c   Blood Bank
          d   Pathology
          e   Clinical Laboratories
          f   Surgery Department

      2.   Indirect Patient Care
          a   Environmental Services
          b   Facilities Management
          c   Processing and Decontamination
          d   Nutrition Services Department
          e   Biomedical Engineering
          f   Pharmacy
          g   Law Enforcement
B.   Physical Environment
      1.   Surgical Services
          a   Locations within the healthcare facility
          b   Floor plan
      2.   Principles of the Layout
          a   Traffic Patterns
          b   Environmental Control
          c   Communication Systems
      3   Operating Room
          a   Location
          b   Floor Plan
          c   Environmental Systems
              1)   Gases
                      Oxygen
                      Nitrous Oxide
                      Nitrogen
                      Compressed Air
              2)   Suction
              3)   Electrical Outlets
              4)   Environmental control
                    Temperature
                    Humidity
                    Ventilation Systems
              Positive Pressure

                  Negative Pressure
                  Air Exchange Rate
                  Laminar Flow

      5)   Environmental Safety
                  Traffic Control
                  Electrical Hazards
                  Fire Safety
                  Radiation Precautions
                  Surgical Plume
                  OSHA Guidelines
                      Material Safety Data Sheet (MSDS)
                      Standard Precautions
                  CDC Guidelines
                      Post-exposure Protocols

I.   **Physics and Information Technology (Ch. 6) (Test 3)**
    A.   Computer Hardware
        1.   Basic Computer Components
           a)   On/Off
               1)   Stitch User
               2)   Shut Down
               3)   Log Off
           b)   Drives
               1)   Internal Storage
               2)   External Storage
           c)   Monitor
           d)   Keyboard
           e)   Mouse
           f)   Printer/Scanner/Fax
           g)   Modem/Wireless Card
           h)   Speakers
           i)   Accessory Ports

        2.   Computer Applications and Document Processing
           a)   Desktop
           b)   Toolbars
           c)   Finding/Opening Files
           d)   Opening Documents
           e)   Document Management
           f)   Printing Documents
           g)   Saving and Closing Files/Applications

II.   Energy Source in Surgery (Ch. 6) (Test 3)
    A.   Terms

        1.   Circuit
        2.   Conductor
        3.   Current
        4.   Frequency
        5.   Ground
        6.   Insulator
        7.   Isolated Circuit
        8.   Radio Frequency
        9.   Resistance
        10.   Voltage
        11.   Hertz
        12.   Load
        13.   Cycle

    B.   Basic Principles of Electrical Flow
        1.   Electron Theory
        2.   Magnetism
        3.   Volts
        4.   Amps
    C.   Types of Current
        1.   Direct Current (DC)
        2.   Alternating Current (AC)
    D.   Electrical Safety
        1.   Insulators
        2.   Grounded Plug
        3.   Protecting Self
        4.   Equipment Safety
        5.   Electrical Shock
        6.   Fire Triangle Component

III.   Minimally Invasive Surgery and Robotics (Ch. 6)
    A.   Terms

        1.   Articulated
        2.   Binaural Hearing
        3.   Cartesian Coordinate Geometry
        4.   Cylindrical Coordinate Geometry
        5.   Degrees of Freedom
        6.   Degrees of Rotation

       7.   Manipulators
       8.   Pitch
       9.   Resolution
       10.   Revolute Geometry
       11.   Roll
       12.   Telechir
       13.   Telepresence
       14.   Yaw

B.   Robotic System
       1.   Clinical Application in the Operating Room
       2.   Decontamination and Sterilization Components

       3.   Design
          a)   Endoscopic Positioner
          b)   Surgeon Console
          c)   Manipulators and Instrumentation
          d)   Telesurgery
       4.   Patient Safety
       5.   Preparation and Position of the Robotic System
       6.   Role of the Surgical Technologist
       7.   Troubleshooting
C.   Other Technologies
    A.   Navigation Systems

Classroom Activities
      Research a Laparoscopic Procedure – poster project
      Identifying Furniture & OR Equipment – worksheet
      Computer Lab Assignment
      Guest speaker
Student Responsibilities:
      Read: Surgical Technology for The Surgical Technologist
             Ch. 5 & Ch. 6
      Classroom Handouts
      Complete exercises for Ch. 5 & 6 in MindTap
      Print lecture outline and bring to class (optional)
      Create 10 flash cards per chapter
      Be prepared for Unit Test and pop quizzes (Kahoot or Traditional)

UNIT 4: Surgical Pharmacology and Anesthesia

In this unit the student will learn the purpose for anesthesia and its various stages and how to care for the anesthetized patient. The student will also learn the various medications used in anesthesia, medications used on the surgical field and how to distribute as well as receive medication into the sterile field. At the end of this unit the student will be able to discuss and implement various theories and techniques in the following topics:

I.   Anesthesia & Pharmacology (Ch. 9)

Anesthesia and Physiological Monitoring (Ch. 9)
A.   Definition of Anesthesia
B.   Assessment to Determine Anesthesia Choice
    1.   American Society of Anesthesiologists Determination
    2.   Patient Factors
        a)   Age
        b)   Height
        c)   Weight
        d)   General Health
        e)   Co-morbid conditions
        f)   Current Medications
        g)   Allergies
        h)   Substance Abuse
        i)   Emergency Conditions
        j)   Patient's Psychological State
    3.   Type of Procedure
        a)   Duration
        b)   Surgical Position
    4.   Surgeon's Preference
    5.   Patient's Preference
    6.   Anesthesia Provider's Preference
    7.   Choices of Anesthesia Administration
        a)   General
        b)   Regional
        c)   Related Terms
C.   Surgical Team Roles During Administration
    1.   Health Care Facility Policy
    2.   Assisting Anesthesia Personnel
        a)   General anesthesia

        b)   Spinal/Epidural Anesthesia
        c)   Regional Anesthesia
        d)   Local Anesthesia
   3.   Dispensing Medications
   3.   Monitoring
   4.   Documenting

D.   Preoperative Medication of the Patient
   1.   Sedative Hypnotic Agents
        a)   Diazepam
        b)   Lorazepam
        c)   Midazolam
   2.   Analgesics
        a)   Natural Opioid
        b)   Synthetic Opioid's
   3.   Anti-cholinergic
        a)   Atropine
        b)   Glycopyrrolate
        c)   Scopolamine
   4.   Antacid/H2-receptor Blocking Agents
        a)   Sodium Citrate with Citric Acid
        b)   Cimetidine
        c)   Famotidine
        d)   Ranitidine
   5.   Antiemetic
        a)   Promethazine
        b)   Ondansetron
        c)   Metoclopramide

E.   General Anesthesia
   1.   Patient Position for Induction
        a)   Supine
   2.   Patient Monitoring Devices- Vital signs
        a)   Electrocardiogram (ECG)
        b)   Blood Pressure
        c)   Pulse
        d)   Bispectral Index Monitor (BIS)
        e)   Intravascular Catheters
        f)   Temperature
        g)   Pulse Oximeter
        h)   Capnography

      i)   Respiration
      j)   System for Anesthetic and Respiratory analysis (SARA)
      k)   Doppler
      l)   Arterial Blood Gases

3. Related Patient Care Devices
      a)   Hypo/Hyperthermia Units (Bair Hugger)
      b)   Fluid Warming Devices
      c)   Fluid Pump
      d)   Infusion Control Devices
      e)   Double-cuffed Pneumatic Tourniquet

4. Anesthesia Machine
      a)   Vaporizer
      b)   Ventilator
      c)   Re-breathing Apparatus
      d)   Scavenging System

5. Methods for Delivering Inhalation General Anesthesia
      a)   Mask
      b)   Laryngeal Airway
      c)   Endotracheal Intubation
      d)   Nasal Intubation

6. Intubation and Extubation Assistive Devices
      a)   Laryngoscope
      b)   McGill Forceps
      c)   Stylet
      d)   Oral Airway
      e)   Nasal Airway
      f)   Nerve Stimulator

7. Phases of General Anesthesia
      a)   Induction
      b)   Maintenance
      c)   Emergence
      d)   Recovery

8. Stages of General Anesthesia
      a)   Stage 1
      b)   Stage 2
      c)   Stage 3
      d)   Stage 4

9. Anesthetic Agents
      a)   Inhalation

        b)   Intravenous
        c)   Neuromuscular Blocking Agents
        d)   Neuromuscular Blocking Reversal Agents for Non-Depolarizing Agents
        e)   Neuroleptic Agents
        f)   Antagonistic Agents

F.   Local Anesthesia
    1.   Delivery Methods
        a)   Injection
        b)   Topical
    2.   Local and Topical Agents
        a)   Amides
        b)   Esters

G.   Complications of Anesthesia
    1.   Allergic Reaction
    2.   Aspiration
        a)   Sellick's Maneuver
    3.   Laryngospasm
    4.   Bronchospasm
    5.   Malignant Hyperthermia
    6.   Shock
        a)   Hemorrhagic
        b)   Cardiogenic
    7.   Cardiac Dysrhythmias
    8.   Cardiac Arrest

H.   Alternative Anesthesia Methods
    1.   Cryoanesthesia
    2.   Acupuncture

Perioperative Pharmacology (Ch. 9)
    I.   Medication Measurements
        1.   Conversion and Equivalent Tables
            a)   Metric System
            b)   Household System
            c)   Temperature Conversion
            d)   Units of Measure
        2.   Basic Mathematics
            a)   Fractions
            b)   Decimals
            c)   Ratios

       d)   Proportions
       e)   Percentages
   3.   Dosage Calculations
       a)   Calculating Unit per Milliliter Dosages
       b)   Calculating Amount/Dosage Delivered
   4.   Mixing Medications
       a)   Combing
       b)   Reconstituting
       c)   Diluting

J.   Terminology
   1.   General Definitions
       a)   Pharmacology
       b)   Pharmacokinetics
       c)   Pharmacodynamics
   2.   Types of Medication Actions and Effects
       a)   Actions
       b)   Therapeutic Actions
       c)   Effects

K.   Medications
   1.   Medication Nomenclature
       a)   Chemical Name
       b)   Generic Name
       c)   Trade or Brand Name
   2.   Medication Classifications
       a)   Controlled Substance (Schedule I-V)
       b)   Prescription Medications
       c)   Nonprescription Medications (OTC)
       d)   Alternative Medications
   3.   Medication/Solution Violations
       a)   Narcotic Precautions
       b)   Personnel Negligence
       c)   Consequences to Patient
   4.   Laws, Policies and Procedures
       a)   Healthcare Facility Policies and Procedures
       b)   State and Federal Laws
       c)   Types of Medication Orders
   5.   Medication Publications
       a)   *Physician's Desk Reference*
       b)   *The National Formulary*

    c)   *Pharmacopeia of the United States of America*
    d)   *American Hospital Formulary Service Index*
    e)   The Joint Commission National Patient Safety Goals

6.   Sources of Medications
    a)   Plants
    b)   Animals
    c)   Minerals
    d)   Laboratory Synthesis
    e)   Biotechnology

7.   Drug Forms
    a)   Gas
    b)   Liquid
    c)   Solid
    d)   Semisolid

8.   Routes of Administration
    a)   Injection (parenteral)
    b)   Instillation
    c)   Enteral
    d)   PO
    e)   Inhalation
    f)   Topical Application

L.   Care and Handling of Medications and Solutions
1.   Medication Identification
    a)   Label Information
    b)   Trade Name
    c)   Generic Name
    d)   Concentration
    e)   Amount
    f)   Expiration Date
    g)   Directions for Reconstitution/Dilution
    h)   Storage
    i)   Route of Administration

2.   Packaging, Measurement and Delivery
    a)   Syringes
    b)   Finger Control
    c)   Vial
    d)   Ampule
    e)   Tube
    f)   Sterile Packets

        g)   Metal Containers
        h)   Graduated Pitcher
        i)   Plastic Containers
        j)   Intrathecal Pump
3.   Medication Preparation
        a)   Non-sterile Area
        b)   Transfer of Medications to the Sterile Field
        c)   Techniques of Identification
M.   Medications Used in Surgery
    1.   Classification of Agents
        a)   Analgesics
        b)   Analgesic Antipyretic Agents
        c)   Anticoagulants and Fibrinolytics
        d)   Anticonvulsants
        e)   Antiemetic and Antihistamines
        f)   Anti-infective Agents
        g)   Antineoplastic Chemotherapy
        h)   Autonomic Agents
        i)   Blood Replacement Interventions
        k)   Cardiac Medication
        l)   Central Nervous System Stimulants
        m)   Coagulants and Hemostatic
        n)   Contrast Media
        o)   Diuretics
        p)   Dyes
        q)   Emergency Drugs
        r)   Gastric Medication
        s)   Hormones
        t)   Inhalation
        u)   Irrigation Solutions
        v)   IV Fluids
        w)   Narcotics
        x)   Narcotic Antagonist
        y)   Obstetrical Agents
        z)   Ophthalmic Medications
        aa)   Sedative-hypnotic Agents
        bb)   Staining Agents
        cc)   Tranquilizers
    2.   Alternative Medications

a)   Herbal Medicine
b)   Nutritional Supplements

Classroom Activities

Calculation exercises – groups
        Create 20 flash cards

Student's Responsibilities:

        Read: Surgical Technology for The Surgical Technologist
                Ch. 9
                Classroom Handout's
                Print lecture outline and bring to class (optional)
                Complete exercises for Ch. 9 in MindTap
                Be prepared for Unit Test and pop quizzes (Kahoot or Traditional)
                Guest speaker

Course Grading Information:

Grading Rubric

A – 89.5-100	30% Unit Tests
B – 79.5 – 89.4	40% Quizzes, Assignments, Homework
C – 74.5 – 79.4	15% Comprehensive Final
D – 69.5 -74.4	10% Lab
F – 0-69.4	5% Attendance
	100% Total

Academic Standing:

Students will be evaluated on a constant and frequent basis. This allows the student and faculty to track the students' progress throughout the program. Students are encouraged to schedule a time to come into the program directors office and review their lab, clinical, and classroom academic standing. An Academic Counseling form will be signed and kept in the students file. Students are encouraged to ask for academic counseling any time they feel the need for it. Grades can be viewed at any time on Brightspace. Students must maintain and have at least a 75% score in each didactic and clinical course in order to sit for the Clinical Practical.

Late Work, Attendance, and Make Up Work Policies:

All assignments must be turned in at the beginning of class. Late assignments will have 10 points taken off. No late assignments will be accepted after 1 week of the due date. When tests are scheduled students are expected to have a pencil and arrive on time. *No* students will be allowed in the classroom once the testing has begun. *NO* students are allowed to leave during the test unless they are finished.   It is the responsibility of each student to schedule a make-up test at

the convenience of the instructor. All make-up tests will start with 10 pt's off. This also applies to the Clinical Practical Exam.

"Students are expected to be in class, on time. For security reasons, the **doors to the classroom will be locked from the outside and the doors will remain locked after class starts.** If you can't be in the classroom by the time class starts, do not expect to be let in; go to the library and study or make that time productive some other way. If you must leave the classroom for an emergency, quietly pick up your course materials and leave the classroom and, since the doors are locked from the outside, you won't be able to come back into the class."

During F2F class, students that leave before half of the class is completed will be counted absent for that day.

Weekly discussions will account for your attendance for the online component of this course. Missing consecutive weeks will affect your overall grade.

Student Behavioral Expectations or Conduct Policy:
In order to be able to take the Clinical Practical Exam students must maintain a 74.5 or better in SRGT 1405 prior to testing time.

"Students are expected to maintain classroom decorum that includes respect for other students and the instructor, prompt and regular attendance, and an attitude that seeks to take full advantage of the education opportunity." Unprofessional behavior or conduct will not be tolerated in the classroom or lab setting. Inappropriate behavior will not be tolerated and will be dealt with immediately. Please refer to the MCC Highlander Guide and the ST program handbook for a more detailed explanation. Students are not allowed to eat or drink in the OR lab or computer lab. Students are expected to be prepared for scheduled tests and will not be allowed to enter or leave during testing. Once the test starts students are expected to sit for the complete test.

Due to the sensitive nature of some of the classroom discussions students are not to take topics outside of the classroom and into the public setting. This is a direct violation of program policies and will not be tolerated and will lead to dismissal from the program.

**Please refer to your student handbook for further information.

* Click Here for the MCC Academic Integrity Statement
(www.mclennan.edu/academic-integrity)
The link above will provide you with information about academic integrity, dishonesty, and cheating.

* Click Here for the MCC Attendance/Absences Policy
(https://www.mclennan.edu/highlander-guide/policies.html)
Click on the link above for the college policies on attendance and absences. Your instructor may have guidelines specific to this course.

Accommodations/ADA Statement
Any student who is a qualified individual with a disability may request reasonable accommodations to assist with providing equal access to educational opportunities. Students should contact the Accommodations Coordinator as soon as possible to provide documentation and make necessary arrangements. Once that process is completed, appropriate verification will be provided to the student and instructor. Please note that instructors are not required to provide classroom accommodations to students until appropriate verification has been provided by the Accommodations Coordinator. Instructors should not provide accommodations unless approved by the Accommodations Coordinator. For additional information, please visit mclennan.edu/disability.

Students with questions or who require assistance with disabilities involving physical, classroom, or testing accommodations should contact:
>   disabilities@mclennan.edu
>   254-299-8122
>   Room 319, Student Services Center

* Click Here for more information about Title IX
(www.mclennan.edu/titleix)
We care about your safety, and value an environment where students and instructors can successfully teach and learn together. If you or someone you know experiences unwelcomed behavior, we are here to help. Individuals who would like to report an incident of sexual misconduct are encouraged to immediately contact the Title IX Coordinator at titleix@mclennan.edu or by calling Dr. Drew Canham (Vice President for Student Success) at 299-8645. Individuals also may contact the MCC Police Department at 299-8911 or the MCC Student Counseling Center at MCC by calling 299-8210. The MCC Student Counseling Center is a confidential resource for students. Any student or employee may report sexual harassment anonymously by visiting the following website: http://www.lighthouse-services.com/mclennan/.

McLennan's Title IX webpage (http://www.mclennan.edu/titleix/) contains more information about definitions, reporting, confidentiality, resources, and what to do if you or someone you know is a victim of sexual misconduct, gender-based violence or the crimes of rape,

acquaintance rape, sexual assault, sexual harassment, stalking, dating violence or domestic violence.

* *You will need to access each link separately through your Web browser (for example: Internet Explorer, Mozilla, Chrome, or Safari) to print each link's information.*