# KINGSBOROUGH COMMUNITY COLLEGE

Of

The City University of New York

Department of Nursing

**ST 2 – Surgical Technology II** Course Syllabus: 2009

Pre/Corequisite: Eng 12, BIO 11 Credit Hours: 2

Corequisites: ST 1 Lab : 4

Catalogue Description: This course provides theoretical knowledge for the application of essential operative skills during the perioperative phase. It introduces the student to the practice of surgical technology with a focus on those skills necessary for function in the first scrub role. This course will be taught as lecture in conjunction with an active hands-on college laboratory component. Topics include surgical asepsis, sterilization and disinfection and perioperative patient care.

Course Overview: This course will be taught as a 2-hour weekly lecture in conjunction with a 4 hourly weekly hands-on college laboratory component. The principles of those basics skills required for successful functioning in the surgical environment as well as the development of the understanding of the principles behind the practice.

Course Objectives: Upon successful completion of the course the student will be able to:

1. Describe the methods of sterilization and discuss the advantages and disadvantages of each.
2. Demonstrate and discuss the principles of aseptic technique.
3. Demonstrate and discuss the principles of scrubbing, gowning and gloving.
4. Demonstrate and discuss the principles of skin preparation.
5. Demonstrate and discuss the principles of sterile draping methods.
6. Demonstrate and discuss case preparation, including instrumentation, sutures and surgical supplies and equipment.
7. Discuss the normal progression of surgical procedures from preparation, beginning, intraoperative and ending.

Topical Outline:

Unit I - Sterilization and Disinfection
Unit II - Aseptic Technique
Unit III - Surgical Scrubbing, Gowning and Gloving
Unit IV - Surgical Skin Preparation
Unit V - Surgical Draping Principles
Unit VI - Surgical Needles and Suture
Unit VII - Basic Case Preparation and Perioperative Routines.

Teaching Strategies:

Lecture
Teacher- guided discussions
Audio-visual materials
Demonstration/Return Demonstration
Role-playing

Course Requirements:

1. Textbooks

Required:

Fuller, Joanna K., *Surgical Technology: Principles and Practice, 4th Edition,* Elsevier, 2005

Rutherford, Colleen J., *Differentiating Surgical Instruments,* F.A. Davis Company, 2005

Recommended:

Meeker, Maragaret H. and Jane C. Rothrock, *Alexander's Care of the Patient in Surgery*, Mosby, St. Louis, Missouri, 13th Edition, 2007

Thomas, L. Clayton, *Taber's Cyclopedic Medical Dictionary*, F.A. Davis Company, Philadelphia, Pennsylvania, 20th Edition, 2006

2. Attendance:

A student is deemed excessively absent when he or she has been absent 15% of the number of contact hours a class meets during a semester. When a student is excessively absent, a grade of "W" or "WU" will be assigned as described in the college catalog.

3. Evaluation:

Grades will be calculated according to college and departmental policy as follows:

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| A+ | 98-100 |
| A | 95-97 |
| A- | 90-94 |
| B+ | 88-89 |
| B | 85-87 |
| B- | 80-84 |
| C+ | 78-79 |
| C | 75-77 |
| C- | 70-74 |
| D+ | 68-69 |
| D | 65-67 |
| D- | 60-64 |
| F | 59 and below |
| W | Withdrew without penalty |
| WU | Unofficial Withdrawal (Counts as failure) |
| INC | Term's Work Incomplete. Counts as "F" grade unless work is completed within six months. |

Grades will be determined as described below:

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| Lab Practicum: | 20% |
| Unit Tests: | 50% |
| Final Exam | 30% |

The Department of Nursing adheres to the Policies and Procedures on Academic Integrity as set forth by CUNY. See the Surgical Technology Student Handbook, the KCC Catalog and website for further details.
Students are expected to take all tests when scheduled. Exceptions to this rule will be for emergency situations and the faculty must know in advance.
Students who do not take a test on the scheduled date are required to take a makeup test. All makeup tests will be given at the end of the semester.
Students who fail to take the scheduled exams or makeup will receive a grade of zero for that test.

All written assignments must comply with college standards for written work. Written assignments are to be turned in during the class period on the date that they are due.
All assignments must be handed in by the end of the course to complete the requirements of the course. A late assignment will meet the requirements of the course but will not receive full credit. If written assignments are not submitted by the end of the course, the student will receive a grade of "F" for the course.

A conference with the instructor is required at mid-semester and at the end of the course to discuss the student's progress. Students may initiate conferences at other times.

4. Classroom Decorum:

All pagers, wireless phones, electronic games, radios, tape or CD players or other devices that generate sound must be turned off when any member of the academic community enters a classroom. Cellular devices are allowed to be on in the classroom only if the owner is using the caller ID, voice messages or a vibrating battery mechanism. Members of the academic community must exit the classroom to make or receive calls.

5. Retention Criteria:

Criteria for retention in the Program mandates that students must:

a. receive no more that two grades under "C" in any pre or corequisites
b. earn a minimum final grade of "C" in every Surgical Technology course.
c. the student must repeat a Surgical Technology course once if the grade is below "C"
d. a second grade below "C" will result in the student's dismissal from the program.
e. Students who fail a course achieving a grade of not less the "C-" may apply to repeat the course one time only. Repeating the course is subject to space availability.
f. Students must submit an **"Intent to Return to Surgical Technology Form"** outlining what they thought caused them to be unsuccessful and include a plan for success that demonstrates significant changes in how they will approach the course when repeated.

6. Dress Requirements:

Students must present themselves as professional role models.
Students will be required to dress in solid navy blue scrub attire for their lab sessions.

7. Fatigue can certainly impair a health care worker's ability to provide safe, professional case. Thus KCC's Nursing Department states: All students need to carefully assess his/her level of fatigue, school requirements in terms of lecture, on-campus labs and clinical experiences and own work schedules. This assessment should carefully consider the potential impact of excessive employment on his/her ability to provide safe, professional care. Each student has an ethical responsibility to ensure that fatigue does not negatively impact student responsibilities.

| **Unit 1: Sterilization and Disinfection** | | | |
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| **Learner Objectives** | **Content/Lecture Discussion** | **Related Learner Experiences** | **Laboratory Objectives** |
| Upon completion of this unit the student shall be able to:<br>1. Describe the physical and chemical methods used to protect patients and health care workers | 1. Necessary factors for infection<br>- organism in sufficient number<br>- virulence<br>2. Factors influencing growth<br>3. Effectiveness of antimicrobial procedures.<br>4. Physical antimicrobial methods.<br>5. Chemical antimicrobial methods.<br>6. Action of chemicals.<br>7. Terminology. | Handout:<br>Syllabus<br>Week to week<br><br>Reading Assignment:<br>Fuller, *Surgical Technology: Principles and Practice*, p.88-136 | |
| 2. Identify principles and techniques for disinfection. | 1. Environmental decontamination procedures.<br>2. Methods<br>3. Agents<br>4. Factors for selection | AORN *Standards, Recommended Practices and Guidelines*<br>Disinfection, High Level | |
| 3. Identify principles of sterilization and demonstrate the appropriate techniques for each method. | 1. Methods:<br>- steam under pressure<br>- ethylene oxide<br>- paracetic acid<br>- plasma<br>- ionizing radiation<br>2. Sterilizers<br>- gravity<br>- vacuum<br>- washer-sterilizers<br>3. Principles<br>- preparation<br>- precautions<br>- packing materials<br>- loading<br>- time/temperature/pressure<br>- drying<br>- aeration<br>- shelf life<br>4. Monitoring methods | Reading Assignment:<br><br>AORN *Standards, Recommended Practices and Guidelines*<br>Sterilization in the Perioperative Setting.<br>Packaging Systems<br><br>Films:<br>"Sterilization in the 21st Century"<br>" Steris"<br>"Sterrad"<br><br>Media Center:<br>1. Sterilization in the 21st Century | The student will:<br>1. Demonstrate the correct methods of packaging items for sterilization.<br>2. Demonstrate the correct loading of sterilizers for each method of processing.<br>3. Demonstrate the proper method of sterilizer testing. |

| **Unit 2: Aseptic Techniwue** | | | |
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| **Learner Objectives** | **Content/Lecture Discussion** | **Related Learner Experiences** | **Laboratory Objectives** |
| Upon completion of this unit the student will be able to:<br>1. Define terms related to asepsis. | 1. Terminology | Reading Assignment:<br>Fuller, p 137-150 | |
| 2. Discuss sources of contamination. | 2. Sources<br>- personnel<br>- patient<br>- environment | | |
| 3. Discuss and demonstrate the principles of asepsis and their application. | 3. Principles of Aseptic Technique<br>- Definition of the sterile field.<br>- Boundaries of the sterile field on the draped patient and sterile personnel.<br>- Boundaries of the sterile field on packages and containers.<br>- Traffic patterns within the sterile field.<br>- The concept of "strike through" | Film:<br>"Fundamentals of Aseptic Technique"<br><br>Handouts:<br>Standard setup for Back table and Mayo stand<br><br>Media Center:<br>1. Asepsis and Sterile Technique – CD Rom<br>2. Introduction to Asepsis and Sterile Technique | The student will:<br>1. Demonstrate the boundaries of the sterile field.<br>2. Demonstrate the proper establishment of the sterile field.<br>3. Demonstrate the correct opening and presentation.<br>4. Demonstrate correct movement around the sterile field. |
| 4. Discuss principles of CDC's Standard Precautions | 1. Concepts of Standard Precautions | AORN *Standards, Recommended Practices and Guidelines*<br>Prevention of Transmissible Infections | |

| **Unit 3: Surgical Scrubbing, Gowning and Gloving** | | | |
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| **Learner Objectives** | **Content/Lecture Discussion** | **Related Learner Experiences** | **Laboratory Objectives** |
| Upon completion of this unit the student shall be able to:<br>1. Demonstrate the basic technique of gowning, gloving self and other team members | 1. Routine prior to surgical scrub<br>2. Preliminary wash.<br>3. Disinfectants used.<br>4. Scrub methods and principles/<br>5. Drying<br>6. Open vs closed glove technique.<br>7. Team member preparation.<br>8. Changing and removing attire. | Reading Assignment:<br>Fuller, p 151-161<br>AORN *Standards, Recommended Practices and Guidelines*<br>Hand Antisepsis, Surgical<br><br>Media Center:<br>1. Scrubbing, Gowning and Gloving | The student will:<br>1. Demonstrate the proper method of scrubbing.<br>2. Demonstrate the proper method of gowning and gloving self both open and closed.<br>3. Demonstrate the proper method of gowning and gloving others. |

| **Unit 4: Surgical Skin Preparation** | | | |
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| **Learner Objectives** | **Content/Lecture Discussion** | **Related Learner Experiences** | **Laboratory Objectives** |
| Upon completion of this unit the student shall be able to:<br>1. State the purpose and procedure for skin preparation. | 1. Purpose<br>2. Time of skin prep<br>3. Equipment used.<br>4. Solutions used.<br>5. Procedure | Reading Assignment:<br>Fuller, p. 196-208,<br>AORN *Standards, Recommended Practices and Guidelines*<br>Skin Preparation of Patients | The student will:<br>1. Demonstrate the proper method of performing a skin prep. |
| 2. Compare the prep for a clean area with a contaminated area. | 1. Routine preps:<br>- abdomen<br>- chest<br>- perineum<br>- extremities<br>- head and face<br>2. Special Handling<br>- umbilicus<br>- stoma<br>- foreign bodies<br>- traumatic wounds<br>- donor/recipient sites<br>- contaminated areas | Handout:<br>Skin Prep Guidelines | |
| 3. Identify methods of skin marking. | 1. Dye solutions<br>2. Sterile needles. | | |

| **Unit 5: Surgical Draping Principles** | | | |
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| **Learner Objectives** | **Content/Lecture Discussion** | **Related Learner Experiences** | **Laboratory Objectives** |
| Upon completion of this unit the student shall be able to:<br>1. Describe the materials and types of drapes used for surgical procedures. | 1. Materials<br>- woven textiles<br>- nonwoven fabrics<br>- plastic<br>2. Types<br>- towels and sheets<br>- fenestrated and split sheets<br>- leggings, stockinettes<br>- incise drapes | Reading Assignment:<br>Fuller, p. 209-214<br><br>AORN *Standards, Recommended Practices and Guidelines*<br>Gowns and Drapes – Selection | |
| 2. Demonstrate the basic methods of draping. | 1, Principles of drape placement.<br>2. Protecting hands.<br>3. Securing drapes<br>4. Application of specialty/incise drapes.<br>5. Maintenance of barrier | | The student will:<br>1. Demonstrate the proper method of handling sterile drapes.<br>2. Demonstrate the proper application of basic drape. |
| 3. Describe and demonstrate the methods of draping various body parts. | 1. Procedural draping<br>- abdomen<br>- chest<br>- head<br>- face<br>- extremities<br>- vaginal<br>- rectal | Handout:<br>Draping Diagrams | The student will:<br>1. Demonstrate the proper method of draping specialized areas of the body. |
| 4. Demonstrate the draping of Operating Room furniture. | 1. Tables<br>2. Ring stands<br>3. Mayo stands | | The student will:<br>1. Demonstrate the proper method of draping tables, ring stands and mayo stands, |

| **Unit 6: Surgical Needles and Sutures** | | | |
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| **Learner Objectives** | **Content/Lecture Discussion** | **Related Learner Experiences** | **Laboratory Objectives** |
| Upon completion of this unit the student shall be able to:<br>1. Define suture and suture terms. | 1. Definition<br>- noun v verb<br>2. Terminology<br>- filament<br>- absorbable<br>- tensile strength<br>- inert v reactive | Reading Assignment:<br>Fuller, p. 321-346<br>Rutherford, xv-xvi | |
| 2. Describe packing and sizing scale. | 1. Packaging<br>- color coding<br>- package information<br>2. Sizing scales | | |
| 3. Describe types and characteristics of suture materials. | 1. Types<br>- absorbable v non absorbable<br>- synthetic v natural<br>- monofilament v multifilament<br>2. Coatings | | |
| 4. Describe suture absorption process. | 1. Phagocytosis<br>2. Enzymatic action.<br>3. Hydrolysis | | |
| 5. Describe and demonstrate the handling of suture. | 1. Suture preparation<br>- estimate of needs<br>- sequence of use<br>- placement on field<br>- loading of suture<br>2. Ligating methods | | The student will:<br>1. Demonstrate the proper method of handling different suture materials; ie ties, reels and atraumatic needles.<br>2. Demonstrate the proper method of loading suture on instruments. |
| 6. Discuss Choice of suture materials. | 1. Type of procedure.<br>2. Condition of tissue.<br>3. Disease process.<br>4. Surgeon preference.<br>5. Cost and availability. | | |

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| 7. Discuss the techniques of suturing and accessories. | 1. Suturing techniques<br>- continuous<br>- interrupted<br>- buried<br>- pursestring<br>- subcuticular<br>- retention<br>- traction<br>- other<br>2. Accessory devices<br>- bolsters/bridges<br>- buttons<br>- tapes<br>- vessel loops<br>- adhesive skin closures<br>- liquid sutures | | The student will:<br>1. Demonstrate the proper method of preparing suture adjuncts. |
| 8. Describe and discuss suture alternatives | 1. Internal and external staplers.<br>2. Use of staples<br>3. Advantages and disadvantages<br>4. Types of staplers.<br>5. Loading and handling. | Handout:<br>Stapler Summary | The student will:<br>1. Demonstrate the proper method for loading and unloading stapling devices. |
| 9. Describe and discuss the use of surgical needles. | 1. Sweged v free<br>2. Needle bodies<br>3. Needle points<br>4. Eyed needles<br>5. Needle holder selection<br>6. Loading: right v left hand | | The student wil:<br>1. Demonstrate the proper method of loading various needles on specific needle holders.<br>2. Demonstrate the proper method of preparing non-atruamatic needles.<br>3. Demonstrate the proper loading technique for “Handedness”<br>4. Demonstrate proper technique for passing needles.<br>5. Demonstrate proper |

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| | | | technique to passing needles. |
| 10. Discuss the accountability of the Surgical Technologist in the use of surgical needles. | 1. Exchange methods.<br>2. Needle and needleholder as a unit.<br>3. Count<br>4. Inspection on return.<br>5. Sharps precautions. | | |

| **Unit 7: Basic Case Preparation and Perioperative Routines** | | | |
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| **Learner Objectives** | **Content/Lecture Discussion** | **Related Learner Experiences** | **Laboratory Objectives** |
| Upon completion of this unit the student shall be able to:<br>1. Demonstrate and discuss the preparation of the OR prior to setting up a sterile field and the set up of the sterile field. | 1. Opening and dispensing supplies<br>2. Timing of field preparation.<br>3. Organization and standardization.<br>4. Prep table<br>5. Back table.<br>6. Mayo stand.<br>7. Surgeon preference cards.<br>8. Environmental preparation.<br>9. Furniture and equipment.<br>10. Positioning devices | Reading Assignment:<br>Fuller, p. 293-320<br>AORN *Standards, recommended Practices and Guidelines*<br>Sterile Field, Maintaining | The student will<br>1. Demonstrate the proper opening of sterile supplies.<br>2. Demonstrate the proper setup of a sterile field. |
| 2. Demonstrate and discuss the application of a sponge and instrument count procedure. | 1. Standards of count policies.<br>2. Documentation.<br>3. Legal aspects of counts.<br>4. Incorrect count protocol. | AORN *Standards, recommended Practices and Guidelines*<br>Counts – Sponge, Sharp and Instrument<br><br>Handout:<br>Sample Policy and Procedure | The student will<br>1. Demonstrate the proper method of performing a complete instrument and sponge count. |
| 3. Demonstrate the initial steps of starting a procedure. | 1. Preparation of the surgeon and surgical team.<br>2. Placing and securing surgical drapes.<br>3. Positioning of sterile tables.<br>4. Anchoring accessories. | Reading Assignment:<br>Rutherford, *Differentiating Surgical Instruments, p 1-38* | |
| 3. Demonstrate and discuss 4ntraoperative techniques. | 1. Preparation of the scalpel<br>- blade sizes and used.<br>- changing blades<br>- passing scalpels<br>2. Preparation of medications and irrigation solutions.<br>- temperature<br>- labeling<br>- recording | Media Center:<br>1. Basic Surgical Instrumentation, Equipment and Supplies<br>2. Preoperative Case Management<br>3. Intraoperative Case Management<br>4. Postoperative Case Management | The student will:<br>1. Demonstrate the proper method of loading and unloading blades.<br>2. Demonstrate the proper method of passing scalpels.<br>3. Demonstrate the proper method of receiving, labeling and passing surgical medications. |

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| 5. Discuss and demonstrate the use of surgical instruments. | 1. Classification of instruments<br>- dissecting<br>- grasping<br>- clamping<br>- retracting<br>- probing<br>- cutting<br>- suturing<br>2. Care and handling<br>- check function and integrity<br>- cleaning methods<br>- terminal sterilization<br>- preparation for sterilization<br>- safety precautions | Reading Assignment:<br>Fuller, p. 404-421<br>AORN *Standards, Recommended Practices and Guidelines*<br>Care and Cleaning of Surgical Instruments and Powered Equipment | The student will:<br>1. Demonstrate the proper method of passing each classification of surgical instrument.<br>2. Demonstrate the proper method of disassembling, cleaning and reassembling instrumentation.<br>3. Demonstrate the proper method of preparation for sterilization. |
| 6. Discuss and demonstrate the use of surgical supplies. | 1. Packs<br>- types and uses<br>- disposable v non-disposable<br>2. Sponges and dressings<br>3. Drains, catheters<br>4. Needles. Syringes and irrigators<br>5. Surgical fabrics | | The student will:<br>1. Demonstrate the proper method of preparation for various catheters, drains and basic surgical supplies for use on the sterile field. |
| 7. Discuss the operative sequence opening and closing the surgical wound. | 1. Anatomy of the abdominal wall.<br>2. Abdominal incisions.<br>3. Instrumentation and suture sequence. | Reading Assignment:<br>Fuller, p. 422-425 | |
| 8. Discuss various surgical incisions and the procedure for basic laparoscopy. | | | |