

**Bossier Parish Community College  
Master Syllabus**

**Course Prefix and Number:** STEC 120

**Credit Hours:** 3

**Course Title:** Surgical Procedures II

**Course Prerequisites:** STEC 110, STEC 111, STEC 112

Course Corequisites: STEC 121, STEC 122

**Clock Hours:** 45 hours lecture

**Time Increments:** semester

**Textbooks:** Rothrock, June C. and Alexander, Sherri; Alexander's Surgical Procedures, 1<sup>st</sup> edition. Fuller, J.; Surgical Technology Principles and Practice, 7<sup>th</sup> edition Allhoff, T. and Hinton, D.; Surgical Mayo Setups, 2<sup>nd</sup> edition Rutherford, Colleen J; Differentiating Surgical Instruments Chambers, Karen, L. and Roche, Valerie; Surgical Technology Review, Certification & Professionalism, 2010 edition.

**Course Description:**

This course covers 7 surgical specialties: ophthalmic, oral/maxillofacial, thoracic and pulmonary, cardiac, orthopedic, pediatric, and peripheral vascular, as well as disaster preparedness and response and emergency trauma surgery. For each specialty, methods and principles are taught which include care of supplies and equipment, principles of patient safety, skin preps, patient positioning, and draping the operative site. Selected mock surgeries will be performed in the mock OR lab. Enrollment in the Surgical Technology Program courses is limited to those students who have been selected and admitted to the program. Program courses are sequenced by semester and must be taken as a group each semester per program requirements and policies.

**Methods of Teaching:** Lecture, team discussions with required reading assignments and homework, textbooks, handouts, audio-visual, computer programs (Live-OR, Websurg), and hands-on demonstration

**Learning Outcomes:**

At the end of this course, the student will

- A. apply knowledge of medical terminology and anatomy to set up the surgical field and select and maintain appropriate instrumentation.

To achieve the learning outcomes, the student will

1. analyze and explain the psychological effects and considerations of having eye surgery. (A)
2. practice safe procedures and techniques in eye surgery. (A)
3. describe the anatomy of the eye. (A)
4. explain how to prepare the microscope for use and care for it properly. (A)
5. name and recognize commonly used eye instruments. (A)
6. differentiate the types of ophthalmic drugs and their uses. (A)
7. identify surgical techniques to repair maxillofacial fractures. (A)
8. identify the instrumentation and equipment used in cardiac and pulmonary surgery. (A)
9. explain endoscopic procedures of the lungs and mediastinum. (A)
10. describe the proper method of handling specimens in cardiopulmonary surgery. (A)
11. explain the use of a water-seal chest drainage system. (A)
12. describe common cardiac and pulmonary procedures. (A)
13. discuss orthopedic terminology. (A)
14. identify the muscle groups, the bones, and their functions. (A)
15. identify the names and uses of orthopedic instruments, hardware, and supplies. (A)
16. describe the proper sequence of events in orthopedic procedures. (A)
17. describe the types of diagnostic tests and laboratory tests used preoperatively in the orthopedic patient. (A)
18. identify the anatomical structure and functions of arteries and veins. (A)
19. identify common obstructions of vessels. (A)
20. describe the scheme for performing bypass grafts. (A)
21. identify the goal of peripheral vascular surgery. (A)
22. identify various grafts used for peripheral vascular surgery. (A)
23. read each chapter prior to attending class. (A)

**Course Requirements:** To earn a grade of “C” or higher the student must earn 75% of the total points for the course and meet all of the following course requirements.

- minimum average of 75% on tests with no test score less than 75%
- minimum test score of 90% on all medical term quizzes within two attempts
- reading assignments/homework (outline of each chapter, turned in at the start of each chapter) will comprise 20% of total grade
- 80% average on anatomy/physiology quizzes within two attempts
- 80% on mid-term comprehensive exam

**Outcome Assessment Methods:** Written exams

**Course Grading Scale:**

- A- 90% or more of total points with no test score less than 75%
- B- 80% or more of total points with no test score less than 75%
- C- 70% or more of total points with no test score less than 75%
- D- 60% or more of total points with no test score less than 75%

F- less than 60% of total points or one or more test scores less than 75%

**Attendance Policy:** The college attendance policy, which is available at <http://www.bpcc.edu/catalog/current/academicpolicies.html>, allows that “more restrictive attendance requirements may apply to some specialized classes such as laboratory, activity, and clinical courses because of the nature of those courses.” The attendance policy of the Surgical Technology program is described in the Surgical Technology Clinical Handbook.

**Course Fees:** \$6.00

### **Nondiscrimination Statement**

Bossier Parish Community College does not discriminate on the basis of race, color, national origin, gender, age, religion, qualified disability, marital status, veteran's status, or sexual orientation in admission to its programs, services, or activities, in access to them, in treatment of individuals, or in any aspect of its operations. Bossier Parish Community College does not discriminate in its hiring or employment practices.

#### COORDINATOR FOR SECTION 504 AND ADA

Angie Cao, Student and Disability Services Specialist

Disability Services, F254, 6220 East Texas Street, Bossier City, LA 71111

318-678-6511

[acao@bpcc.edu](mailto:acao@bpcc.edu)

Hours: 8:00 a.m.-4:30 p.m. Monday - Friday, excluding holidays and weekends.

Equity/Compliance Coordinator

Teri Bashara, Director of Human Resources

Human Resources Office, A-105

6220 East Texas Street

Bossier City, LA 71111

Phone: 318-678-6056

Hours: 8:00 a.m.-4:30 p.m. Monday - Friday, excluding holidays and weekends.

### **Course Content Outline:**

Chapter 26: Ophthalmic Surgery

- I. Surgical Anatomy
  - A. Orbital Cavity
  - B. Eyelids
  - C. Globe
  - D. Eye Muscles
  - E. Conjunctiva

- F. Cornea
- G. Sclera
- H. Choroid and Ciliary Body
- I. Iris
- J. Retina
- K. Lens
- L. Anterior and Posterior Chambers
- M. Lacrimal Apparatus
- II. Refraction
- III. Pathology of the Eye
- IV. Diagnostic Testing
- V. Perioperative Considerations
  - A. Psychological Considerations in Eye Surgery
  - B. Verification of the Operative Site
  - C. Positioning the Patient for Ophthalmic Surgery
  - D. Prepping and Draping
  - E. Anesthesia
  - F. Ophthalmic Drugs
  - G. Instruments
  - H. Equipment and Supplies
- VI. Surgical Techniques in Eye Surgery
  - A. Microsurgery
  - B. Operating Microscope
- VII. Role of the Scrubbed Surgical Technologist
- VIII. Surgical Procedures
  - A. Excision of a Chalazion
  - B. Repair of an Entropion
  - C. Repair of an Ectropion
  - D. Excision of a Pterygium
  - E. Dacryocystorhinostomy
  - F. Lacrimal Duct Probing
  - G. Muscle Resection and Recession
  - H. Penetrating Keratoplasty (Corneal Transplantation)
  - I. Lasik (Laser in Situ Keratomileusis)
  - J. Extracapsular Cataract Extraction (Phacoemulsification)
  - K. Anterior Vitrectomy
  - L. Sclera Buckling Procedure for a Detached Retina
  - M. Filtering Procedures and Trabeculectomy
  - N. Argon Laser Trabeculoplasty
  - O. Orbital Decompression
  - P. Enucleation
  - Q. Orbital Exenteration

- I. Surgical Anatomy
  - A. Bones of the Face
- II. Pathology of the Midface and mandible
- III. Diagnostic Procedures
- IV. Equipment and Instruments
  - A. Power Drill
  - B. Plates and Screws
- V. Prepping and Draping
- VI. Sponges and Dressings
  - A. Sponges
  - B. Dressings
- VII. Surgical Procedures of the Face
  - A. Maxillomandibular Fixation (application of arch bars)
  - B. Open Reduction/Internal Fixation: Midface Fracture
  - C. Open Reduction/Internal Fixation: Frontal Sinus Fracture
  - D. Open Reduction/Internal Fixation: Orbital Floor Fracture
  - E. Open Reduction/Internal Fixation: Mandibular Fracture
- VIII. Oral Surgery
  - A. Dental Implants
  - B. Tooth Extraction
- IX. Orthognathic Procedures
  - A. Mandibular Advancement
  - B. Midface (Maxillary) Advancement
  - C. Temporomandibular Joint Arthroplasty

## Chapter 32: Thoracic and Pulmonary Surgery

- I. Surgical Anatomy
  - A. Upper Respiratory Tract
  - B. Pharynx
  - C. Larynx
  - D. Trachea
  - E. Bronchi
  - F. Lungs
- II. Pathology of the Thoracic and Pulmonary Systems
- III. Diagnostic Tests
  - A. Pulmonary Function
  - B. Laboratory Tests
  - C. Imaging Studies
- IV. Perioperative Considerations
  - A. Prepping and Draping
  - B. Instruments
  - C. Closed Chest Drainage
- V. Surgical Procedures
  - A. Insertion of Chest Tubes

- B. Bronchoscopy
- C. Rigid Bronchoscopy
- D. Flexible Bronchoscopy
- E. Mediastinoscopy
- F. Thoracoscopy (Video-assisted Thoroscopic Surgery)
- G. Thoracoscopy: Lung Biopsy
- H. Lung Volume Reduction Surgery
- I. Scalene Node Biopsy
- J. Thoracotomy
- K. Lobectomy
- L. Pneumonectomy
- M. Rib Resection for Thoracic Outlet Syndrome
- N. Decortications of the Lung
- O. Lung Transplantation

### Chapter 33: Cardiac Surgery

- I. Surgical Anatomy
  - A. Heart
  - B. Heart Valves
  - C. Cardiac Cycle
  - D. Conduction System
- II. Pathology of the Heart
- III. Diagnostic Procedures
  - A. Cardiac Catheterization
- IV. Perioperative Considerations
  - A. Positioning
  - B. Instruments
  - C. Equipment and supplies
  - D. Drugs
- V. Surgical Procedures
  - A. Median Sternotomy
  - B. Cardiopulmonary Bypass
  - C. Sump Catheterization
  - D. Infusion of a Cardioplegic Solution
  - E. Coronary Artery Bypass Grafting
  - F. Transmyocardial Revascularization
  - G. Resection of a Left Ventricular Aneurysm
  - H. Aortic Valve Replacement
  - I. Mitral Valve Repair and Replacement
  - J. Resection of an Aneurysm of the Ascending Aorta
  - K. Resection of an Aneurysm of the Aortic Arch
  - L. Resection of an Aneurysm of the Descending Thoracic Aorta
  - M. Endovascular Repair of a Thoracic Aneurysm
  - N. Insertion of an Artificial Cardiac Pacemaker
  - O. Replacement of a Pacemaker Battery

- P. Implantable Cardioverter Defibrillator
  - Q. Surgery for Atrial Fibrillation (Cardiac Ablation)
  - R. Pericardial Window
  - S. Pericardiectomy
- VI. Heart Failure
- A. Insertion and Removal of an Intraaortic Balloon catheter
  - B. Ventricular assist Device
  - C. Heart Transplantation.

## Chapter 30: Orthopedic Surgery

- I. Surgical Anatomy
  - A. Skeleton
  - B. Bone Tissue
  - C. Bone Membranes
  - D. Bone Structure and Shape
  - E. Landmarks
  - F. Bone Healing
- II. Joints
  - A. Classification
  - B. Joint Movement
- III. Soft Connective Tissues
  - A. Tendons and Ligaments
  - B. Muscle
- IV. Pathology
- V. Diagnostic Procedures
  - A. Special Studies
- VI. Patient Transport and Transfer
- VII. Positioning
- VIII. Hemostasis
  - A. Pneumatic Tourniquet
  - B. Hemostatic Agents
- IX. Infection Control
- X. Fractures
  - A. Classification of Fractures
  - B. Fracture Patterns
  - C. Biomechanical Forces on Bone
  - D. Fracture Repair
- XI. Orthopedic Technology
  - A. Power Equipment
  - B. Hand Instruments
  - C. Orthopedic Implants
  - D. Joint Replacement Implants
  - E. Grafts, Bone Cement, and Bioactive materials
  - F. Bone Cement
  - G. Casting

- H. Traction
- I. Modular Rod and Pin Fixation
- J. Arthroscopic Surgery
- XII. Shoulder and Arm
- XIII. Surgical Approaches to the Shoulder
  - A. Bankart Procedure
  - B. Open Rotator Cuff Repair
  - C. Plating of the Proximal Humerus
  - D. Shoulder Arthroscopy
  - E. Shoulder Arthroplasty
  - F. Elbow Arthroplasty
- XIV. Wrist and Hand
  - A. Open Reduction and internal Fixation of the Wrist
  - B. Carpal Tunnel Release
  - C. Metacarpophalangeal Joint Arthroplasty
  - D. Dupuytren Contracture
- XV. Hip and Pelvis
  - A. Femoral Neck Fractures
  - B. Intramedullary Femoral Nailing
  - C. Hip Arthroplasty
  - D. Fracture of the Pelvis
- XVI. Knee and Lower Leg
  - A. Knee Arthroscopy
  - B. Arthroscopic Meniscectomy
  - C. Arthroscopic Anterior Cruciate Ligament Repair
  - D. Knee Arthroplasty
  - E. Intramedullary Nailing (Tibia)
- XVII. Foot
  - A. Repair of the Achilles Tendon
  - B. Triple Arthodesis
  - C. Fracture of the Ankle
  - D. Bunionectomy
  - E. Hammertoe Correction

## Chapter 31: Peripheral Vascular Surgery

- I. Surgical Anatomy
  - A. Structure of Blood Vessels
  - B. Pulmonary and Systemic Circulatory Systems
  - C. Blood Pressure
  - D. Blood Vessels of the Body
  - E. Lymphatic System
- II. Pathology of the Peripheral vascular System
- III. Diagnostic Procedures
  - A. Arterial Plethysmography
  - B. Doppler “Scanning”

- C. Arteriography
- D. Intravascular Ultrasonography
- IV. Instruments
  - A. Vascular Clamps
  - B. Scissors
  - C. Forceps
  - D. Retractors
  - E. Suction Tips
  - F. Tuner
- V. Equipment and Supplies
  - A. Sutures
  - B. Vascular Grafts
  - C. Catheters
  - D. Stents
  - E. Vessel Retraction
  - F. Drugs
- VI. Techniques in Vascular Surgery
  - A. Endarterectomy
  - B. Vessel Anastomosis
- VII. Surgical Procedures
  - A. Intraoperative Angiography
  - B. Transluminal Angioplasty
  - C. Insertion of a Vena Cava Filter
  - D. Vascular Access for Renal Hemodialysis
  - E. Thrombectomy (Open Procedure)
  - F. Carotid Endarterectomy
  - G. Abdominal Aortic Aneurysm
  - H. Aortofemoral Bypass
  - I. Axillofemoral Bypass
  - J. Femorofemoral Bypass
  - K. In Situ Saphenous Femoropopliteal Bypass
  - L. Femoropopliteal Bypass
  - M. Saphenous Vein Graft
  - N. Management of Varicose Veins
  - O. Above-the-Knee Amputation

#### Chapter 34: Pediatric Surgery ( Take-home exam)

- I. Physiological and Anatomical Considerations
  - A. Thermoregulation
  - B. Perioperative Interventions to Maintain Normothermia
  - C. Fluid Balance
  - D. Respiratory System and Airway
- II. Pathology
- III. Anesthesia
  - A. Preparation for Anesthesia

- B. Preoperative Medication and Induction
- IV. Psychosocial Care of the Pediatric Patient
  - A. Developmental Stages of the Child
- V. Safety of the Pediatric Patient
  - A. Safe Handling of Drugs
  - B. Transportation of the Pediatric Patient
  - C. Positioning of the Patient
  - D. Electrosurgery
  - E. Instruments
  - F. Sponges
  - G. Sutures
- VI. Surgical Procedures
  - A. Repair of Cleft Lip
  - B. Repair of a Cleft Palate
  - C. Otoplasty
  - D. Reconstruction of the Ear
  - E. Correction of Esophageal Atresia and Tracheoesophageal Fistula
  - F. Pyloromyotomy
  - G. Resection and Pull-Through for Hirschsprung Disease
  - H. Bowel Reconstruction for Imperforate Anus
  - I. Reduction of Intussusception
  - J. Reduction of a Volvulus
  - K. Repair of an Omphalocele
  - L. Repair of Bladder Exstrophy/Epispadias
  - M. Orchiopexy for an Undescended Testicle
  - N. Closure of a Patent Ductus Arteriosus
  - O. Correction of a Coarctation of the Thoracic Aorta
  - P. Correction of Pulmonary Valve Stenosis
  - Q. Closure of an Atrial Septal Defect
  - R. Closure of a Ventricular Septal Defect
  - S. Total Correction of Tetralogy of Fallot
  - T. Repair of Pectus Excavatum
  - U. Neural Tube Defects
  - V. Repair of a Myelomeningocele
  - W. Correction of Syndactyly

Reviewed by: A. Smith, March 28, 2019