

Bachelor of Science in Operating Room Technology

Program Overview

Program Definition

This program is designed to train skilled and committed personnel who can effectively perform caregiving, technical, and executive roles within the operating room team. Graduates work closely with surgeons, anesthesiologists, and nurses to ensure high-quality, standard-compliant care for patients before, during, and after surgery.

Career Opportunities

Graduates can work in:

- Public and private hospital operating rooms
- Outpatient surgical centers
- Emergency department surgical suites
- Clinics and day surgery units

Philosophy, Vision, and Mission

Philosophy (Values & Beliefs)

- Respect for patient dignity, autonomy, and individuality
- Commitment to social justice and equality
- Adherence to Islamic and professional ethical principles
- Patient-centered care from admission to discharge
- Reduction of patient anxiety through effective communication
- Optimal use and maintenance of surgical equipment
- Avoidance of discrimination in service delivery

Vision (Outlook)

Within the next 10 years, graduates will be trained according to international standards set by the Association of Surgical Technologists (AST), fully prepared to participate in advanced and robotic surgical procedures, and firmly established in various surgical specialties.

Mission (Core Purpose)

To educate knowledgeable, committed, and efficient human resources who can provide high-quality, cost-effective, and standard-compliant care to patients before, during, and after surgery. This includes infection control, psychological support, and proper equipment maintenance.

General Program Objectives

Graduates must be able to:

- Demonstrate sufficient knowledge and performance in anatomy, physiology, pathology, equipment, patient care, and surgical techniques.
- Identify patient care needs upon admission through effective communication.
- Prepare the OR environment using aseptic techniques (sterilization and disinfection).
- Assist the surgeon with standard prep, draping, scrubbing, aseptic principles, positioning, cauterization, hemostasis, instrument use, calibration, and patient safety monitoring.
- Recognize critical and warning conditions.
- Maintain equipment safety and ensure a safe environment for patients and staff.
- Display professional and responsive attitudes expected of healthcare professionals.

Roles of Graduates

Communicative Role

- Effective interaction with patients
- Professional communication with the surgical team
- Coordination with other hospital units (especially nursing units)
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Caregiving Role (Circulator & Scrub)

- Preparing the operating room and equipment
- Coordinating patient admission and safe transfer
- Assisting with patient positioning
- Performing surgical hand scrub and scrub duties
- Preparing (prepping) the surgical site
- Providing exposure, hemostasis, and suctioning during surgery
- Performing counts of sponges, needles, and instruments
- Participating in patient resuscitation
- Preparing the patient for transfer to the recovery room

Executive Role

- Reporting operational issues to hospital authorities
- Documentation and record-keeping
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General Competencies

- Communication skills
- Analytical and assessment skills
- Problem-solving skills
- Management skills
- Professional ethics adherence
- Documentation and reporting skills

Special Competencies (Summary Table)

Specific Competency	Related Professional Duties
Planning	Receiving schedules, controlling daily surgical lists, time management, prioritization
Preparation & Arrangement	Checking sterility, classifying and arranging sterile packs
Equipment Operation	Initial equipment checks, calibration, setting electrosurgical units, tourniquet pressure/time
Equipment Maintenance	Ensuring functionality, draping microscope and C-arm, basic troubleshooting

Safety	Checking OR for light, temperature, cleanliness, humidity, and physical/chemical/biological safety
Patient Admission & Transfer	Verifying patient identity, effective communication, safe transfer to the OR table
Positioning	Setting up the table and attachments, placing cautery plate and tourniquet cuff properly
Circulator Role	Catheterization, assisting scrub with gowning/gloving, preparing prep supplies, counting, specimen care, neonate preparation and care, aseptic technique, dressing, documentation, patient transfer to recovery, room turnover
Scrub Role	Hand scrubbing, gowning and gloving, setting up the sterile back table, assisting team members with gowning/gloving, maintaining sterility, anticipating surgeon needs, exposure, hemostasis, suctioning, suturing, dressing, instrument collection
Vital Signs Monitoring	Checking and monitoring patient vital signs
Resuscitation	Participating in CPR and cerebral resuscitation
Cleaning & Sterilization	Participating in daily disinfection of OR equipment and surfaces

Educational Strategies & Methods

Strategies

- Task-based learning
- Blended (student-centered and teacher-centered) approach
- Competency-based education
- Problem-oriented learning
- Community-oriented education

Teaching Methods

- Inter- and intra-departmental conferences

- Small group discussions
- Case presentations
- Workshops
- Clinical and outpatient training
- Self-education and independent learning
- Other methods as needed per objectives

10. Program Structure & Credits

Total Credits: 132

Course Type	Credits
General Courses	24
Basic and Specialty Courses	74
Internships	17
Externships (Clinical Rotations)	17
Total	132

Credit Hour Conversion:

- 1 theoretical credit = 17 hours
- 1 practical credit = 24 hours
- 1 workshop credit = 51 hours
- 1 internship credit = 51 hours
- 1 externship credit = 51 hours

Basic and Specialty Courses (Table)

Code	Course Name	Total Credits
01	General Anatomy	2 (1.5 theory, 0.5 practical)
02	Clinical and Surgical Anatomy	2.5 (1.5 theory, 1 practical)
03	Physiology 1	2
04	Physiology 2	1
05	Biochemistry	1
06	Microbiology and Parasitology	2 (1.5 theory, 0.5 practical)
07	Pathology	2 (1.5 theory, 0.5 practical)
08	Hematology and Blood Transfusion	2
09	Immunology	1 (1 theory, 1 practical)
10	Vital Statistics	1
11	Research Methods in the OR	2 (1.5 theory, 0.5 practical)
12	Information Technology in the OR	1 (1 theory, 1 practical)
13	Medical Physics, Electricity, Robotics, and Applications in the OR	2
14	General Psychology and Common Psychiatric Disorders	2
15	Pharmacology	2
16	Medical Terminology	1.5
17	English for Specific Purposes	2
18	Mental Health in the OR	1
19	Hygiene in the OR	1
20	Principles of Clinical Skills	1 (1 theory, 1 practical)
21	Principles of Circulator and Scrub Performance	2
22	Safety in the OR and Prevention of Occupational Hazards	1
23	Principles of Sterilization and Disinfection	1
24	Introduction to OR Instruments and Equipment	2 (1.5 theory, 0.5 practical)
25	Introduction to Surgical Technology	1
26	Surgical Aseptic Techniques	1
27	OR Techniques and Care in General Surgery	2
28	OR Techniques and Care in Orthopedic Surgery	2
29	OR Techniques and Care in Neurosurgery	2

30	OR Techniques and Care in Reconstructive and Plastic Surgery	2
31	OR Techniques and Care in Gynecologic and Obstetric Surgery	2
32	OR Techniques and Care in Urologic Surgery	2
33	OR Techniques and Care in Cardiothoracic Surgery	2
34	OR Techniques and Care in Ophthalmic Surgery	1
35	OR Techniques and Care in Maxillofacial Surgery	1
36	OR Techniques and Care in Thoracic Surgery	1
37	OR Techniques and Care in ENT Surgery	1
38	OR Techniques and Care in Pediatric Surgery	2
39	OR Techniques and Care in Gastrointestinal and Endocrine Surgery	2
40	OR Techniques and Care in Emergency Surgery	1
41	Intensive Care in the OR	1
42	Principles of Recovery Room Care	1
43	Management in the OR	1
44	Medical Emergencies	1
45	Practical Calculations and Mathematics in the OR	1
46	Diagnostic and Therapeutic Measures in Surgery	1
47	Pain Management and Anesthesia in the OR	1

Internship Courses

Code	Course Name	Credits	Prerequisite(s)
48	Internship in Clinical Skills	2	Course 20
49	Internship in OR Behavior	1	Codes 21, 24, 25
50	Internship in Central Sterile Supply Department (CSSD)	1	Code 23
51	Internship in Circulator Performance	2	Codes 21, 24, 25
52	Internship in Scrub Performance	2	Codes 21, 24, 25
53	OR Technique Internship 1	2	Codes 21, 24, 25
54	OR Technique Internship 2	2	Codes 21, 24, 25
55	Internship in CPR	1	Code 40
56	Internship in Recovery Room Care	2	Code 41
57	Internship in OR Management	2	Code 43

Externship Courses (Clinical Rotations) Sample Course Syllabi

Code	Course Name	Credits
58	Externship in Orthopedic OR	2
59	Externship in Neurosurgery OR	2
60	Externship in Reconstructive/Plastic OR*	1
61	Externship in Gynecology/Obstetrics OR	1
62	Externship in Urology OR	1
63	Externship in Cardiothoracic OR*	1
64	Externship in Ophthalmic OR	1
65	Externship in Maxillofacial OR*	1
66	Externship in Thoracic OR*	1
67	Externship in ENT OR	1
68	Externship in Pediatric OR*	1
69	Externship in Gastrointestinal/Endocrine OR	2
70	Externship in Emergency OR	1
71	Elective Externship (Trauma or Transplant)	1
Note: Universities without sufficient facilities for these specialized rotations may add equivalent credits to Orthopedic, Gynecology, GI/Endocrine, or Neurosurgery rotations.		

(Detailed Examples)

Course: General Anatomy (Code 01)

- **Credits:** 2 (1.5 theory, 0.5 practical)
- **Prerequisite:** None
- **Objective:** Understanding the anatomy of various body organs and systems.
- **Content:** Cell structure, histology, skeletal, muscular, joint, cardiovascular, respiratory, and nervous systems.
- **Evaluation:** Midterm (20%), Final Exam (60%), Assignments (10%), Class Participation (10%).

Course: Pharmacology

- **Credits:** 2
- **Prerequisite:** None
- **Objective:** Familiarity with various drugs, especially those used in the OR.
- **Content:** Drug calculations, terminology, care and administration, drugs used in surgery (analgesics, sedatives, antibiotics, anticoagulants, IV fluids, contrast media, etc.), anesthesia drugs.
- **Evaluation:** Midterm (20%), Final Exam (60%), Assignments (10%), Class Participation (10%).

Course: Medical Terminology

- **Credits:** 1.5
- **Prerequisite:** Introduction to Surgical Technology (Code 25)
- **Objective:** Familiarity with components of common medical terms used in the OR.
- **Content:** Prefixes, suffixes, roots for each body system, common terminology in general and specialty surgeries.
- **Evaluation:** Final Exam (90%), Class Participation (10%).

Course: Principles of Circulator and Scrub Performance

- **Credits:** 2
- **Prerequisites:** Introduction to OR Instruments (24), Introduction to Surgical Technology (25), OR Aseptic Techniques (26)

- **Objective:** Familiarity with the duties of circulator and scrub roles.
- **Content:** Aseptic technique, gowning/gloving, sterilization, environmental safety, patient transfer and positioning, skin prep, draping, hemostasis, suturing, wound dressing, surgical counts, and post-op routines.
- **Evaluation:** Practical exam (OSCE), Midterm, Final, and Class Participation.

Educational Standards (Accreditation Requirements)

The program must provide:

- Dedicated classrooms, conference halls, and library resources.
- Specialized laboratories and hospital training fields.
- Welfare facilities (faculty rooms, student lounges, cafeteria, dormitory, and sports/cultural spaces).
- Adequate patient populations and hospital beds for training.
- Sufficient capital and consumable equipment.
- Qualified faculty and trained support staff.
- Accessible curriculum, educational regulations, and guidelines for all students.
- Active participation of students in conferences, seminars, research, and teaching lower-level students.
- At least 80% alignment of theoretical course content with the official syllabus.
- Documented satisfaction and approval of the skill acquisition process.

Dress Code and Professional Ethics (Summary)

Dress Code

- Clean, long-sleeved, knee-length white coat (non-tight) with university logo; all buttons fastened.
- Visible, valid photo ID card on the left chest.
- Female students must cover all hair, neck, and under-neck areas.
- Simple, non-tight pants; jeans and similar are not allowed.
- Simple socks covering the entire foot and leg; no lace or decorative socks.
- Comfortable, quiet shoes.
- No flashy or inappropriate colors.
- No jewelry (except wedding rings), visible tattoos, or body piercings.
- No sandals or open-toe shoes (except in OR/delivery rooms).

Personal Hygiene & Appearance

- Short, clean, natural nails; no artificial nails or nail art.
- No excessive or unprofessional makeup.
- No strong perfumes or scents.

Professional Behavior

- Respectful, humble, and professional interaction with patients, families, faculty, and staff.
- Quiet, polite speech; no loud noises or inappropriate language.
- No smoking, chewing gum, or eating in clinical areas.
- Mobile phones must be silenced during classes, labs, and rounds.
- No inappropriate jokes or discussions in public spaces.

Enforcement

- Violations are addressed with verbal warnings; repeated offenses are referred to the Student Disciplinary Council.