



An ETS Company

Job Analysis Report

National Board of Surgical Technology and
Surgical Assisting (NBSTSA)

Certified Surgical First Assistant (CSFA)

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Executive Summary

This report describes the methodology and procedures used to conduct a job analysis and develop the exam specifications for the National Board of Surgical Technology and Surgical Assisting (NBSTSA) Certified Surgical First Assistant (CSFA) certification examination.

The three major activities that comprise the job analysis process described in this report are as follows:

1. **Job Analysis Committee Meeting** – A gathering of subject matter experts (SMEs) to discuss and develop a description of the scope of practice
2. **Job Analysis Survey** – A large-scale survey of practitioners not involved with the SME panel to validate the task and knowledge statements developed by the committee
3. **Development of Examination Specifications** – The development of an Examination Content Outline by the committee based on the results of the survey

Several practitioners were assembled by NBSTSA to serve as subject matter experts (SMEs). The individuals selected represent a wide variety of work-related characteristics such as years of experience, work setting, geographic location, and areas of specialty. This helps in developing a scope of practice that is reflective of the roles and responsibilities of the job role and is relatively free from bias. By analyzing the experiences and expertise of current practitioners, the results from the job analysis become the basis of a validated assessment that reflects the competencies required for competent job performance.

The job analysis process utilized in this study yields exam specifications that accurately reflect the scope of practice, allowing for the development of fair, accurate, and realistic assessments of candidates' readiness for certification. The resultant Examination Content Outline (Appendix E) indicates a 150-item examination with content distribution requirements at the competency area (content domain) level as well as topic (content subdomain) level. The three competency areas are:

1. Perioperative Care
2. Ancillary Duties
3. Advanced Science

Introduction

This report describes the methodology and procedures used to conduct a job analysis and develop the exam specifications for the National Board of Surgical Technology and Surgical Assisting (NBSTSA) Certified Surgical First Assistant (CSFA) certification examination.

The job analysis was conducted in accordance with principles and practices outlined in the *Standards for Educational and Psychological Testing*¹, which describe principles and guidelines for all aspects of test development, including content validation.

A job analysis (sometimes referred to as a practice analysis, job task analysis, role delineation study, work analysis, or competency profiling) is a scientific inquiry conducted to identify the tasks and work activities conducted, the context in which those tasks and activities are carried out, and the competencies (knowledge areas, skills, and abilities) required to perform a job role successfully². Different methods can be used which may differ in the levels of specificity in analyzing and describing different work elements, with the choice of method largely dependent on the intended purpose and use of the results. The methodology of the current analysis was tailored to the creation of exam specifications for test development.

When completed, the job analysis process utilized in this study yields exam specifications that accurately reflect the scope of practice, allowing for the development of fair, accurate, and realistic assessments of candidates' readiness for certification. The job analysis is typically performed every 5 to 7 years so that the content outline represents the current scope of practice. Because it serves as the primary basis for content validity evidence, as required by the aforementioned standards, the job analysis is a primary mechanism by which a certifying body or regulatory board can ensure the accuracy and defensibility of an exam. It serves as the foundation of the certification exam and is critical to the success of the entire exam development process. All necessary documentation verifying that the validation process has been implemented in accordance with professional standards is included in this report.

This report is divided into the major activities of the job analysis process, which are:

1. **Job Analysis Committee Meeting** – A gathering of subject matter experts (SMEs) to discuss and develop a description of the scope of practice
2. **Job Analysis Survey** – A large-scale survey to practitioners not involved with the SME panel to validate the task statements developed by the committee
3. **Development of Examination Specifications** – The development of an Examination Content Outline by the committee based on the results of the survey

¹ American Educational Research Association, American Psychological Association, National Council on Measurement in Education (2014). *Standards for Educational and Psychological Testing*. Washington, DC: AERA.

² Sackett, P.R., Walmsley, P.T., Laczko, R.M. (2012). *Job and work analysis: Industrial and Organizational Psychology*. In N. Schmitt, S. Highhouse (Eds.), *Comprehensive Handbook of Psychology*, Volume 12. New York, NY: John Wiley and Sons.

Job Analysis Committee Meeting

NBSTSA selected subject matter experts (SMEs) to represent a wide variety of work-related characteristics such as years of experience, work setting, geographic location, and areas of specialty to develop a scope of practice that is reflective of the roles and responsibilities of the job and is relatively free from bias. See Appendix A for a complete list of the SMEs and their qualifications.

Prior to the job analysis committee meeting, eight SMEs were asked to help provide background information on the job role which included keeping a detailed job log for two weeks and to provide any current job descriptions and/or descriptions of work activities. This background collection period was conducted between March 1, 2022 and March 18, 2022.

PSI Services LLC (PSI) conducted a job analysis committee meeting on March 28-29, 2022 with SMEs to discuss the scope of practice and develop a list of tasks that reflect the job role. PSI led the SMEs in refining task statements, and organizing them into a domain and subdomain structure. In addition to background information, the outgoing exam content outline was used as a resource when developing the tasks. See Appendix B for the presentation used to orient the job analysis committee at the beginning of the meeting.

The job analysis committee developed 159 task statements, as follows:

1. Perioperative Care

A. Preoperative Preparation

1. Acquire radiographic images for intraoperative reference.
2. Anticipate the needs of the surgical team prior to entering the operating room.
3. Prepare and maintain operating room environment according to surgical procedure (e.g., temperature, humidity, lights, furniture).
4. Confirm availability of grafts.
5. Confirm availability of any items needed for implantation (e.g., breast implants, tissue expanders, biological mesh, etc.).
6. Obtain instruments, supplies, and equipment and verify readiness for surgery.
7. Select appropriate patient positioning devices.
8. Don personal protective equipment.
9. Open sterile supplies while maintaining aseptic technique.
10. Assess and reduce risk for intraoperative injuries.
11. Transfer the patient during Pre-Op.
12. Remove external appliances.
13. Perform open and closed gloving techniques.
14. Utilize thermoregulatory devices.
15. Utilize appropriate skin preparation techniques.
16. Perform surgical hand scrub, gowning, and gloving.
17. Gown and glove sterile team members.
18. Specify methods of operative exposure.
19. Observe sounds by electrical devices not in use.
20. Review medical chart. History, Physical, Laboratory results, diagnostic results, and allergies, etc.
21. Prepare surgical consent.

22. Verify surgical consent.
23. Maintain familiarity with positioning equipment specific to specialty procedures.
24. Verify availability of medical supplies:
 - 24a. vendor trays;
 - 24b. suture & hemostatic agents;
 - 24c. "hold" items etc.
25. Actively participate in Time Out.
26. Verify packaging of sterile supplies; Items are not expired.
27. Apply safety strap.
28. Apply, connect, activate antiembolic devices.
29. Apply return electrode pad.
30. Apply pneumatic tourniquet.
31. Pre-op introduction to patient.
32. Insert and/or assist with placement of Foley catheter.
33. Perform and/or assist with draping of patient utilizing aseptic technique.
34. Assist with positioning of patient (e.g. supine, prone, lateral, chest, or lithotomy) considering:
 - 34a. patient comfort & safety;
 - 34b. Points of pressure;
 - 34c. Circulation;
 - 34d. Nerve damage;
 - 34e. Familiarity with common positions.
35. Test operational efficiency of equipment prior to use as appropriate.
36. Assist anesthesia provider.
37. Throw all cords off of the patient for circulator to connect.
38. Perform hand hygiene.
39. Assist with the plan of care under the direction of a physician.
40. Select appropriate suture based on. usage; tissue type; specific wound characteristics.

B. Intraoperative Procedures

1. Facilitate the efficiency of the surgical procedure.
2. Provide assistance to the rest of the surgical team in the assessment and care of the patient.
3. Awareness of patients intraoperative status (e.g., vital signs, monitor color of blood, onset of blood loss, monitor position of patient during procedure).
4. Pass needed instruments, sutures, supplies and other equipment.
5. Manipulate body tissues and anatomic structures (e.g., Halsted's Principles, tissue manipulation methods, traction/counter traction).
6. Utilize appropriate techniques for tissue dissection.
7. Operate specialty equipment (e.g., endoscopic devices, harmonic scalpel, power equipment).
8. Utilize vessel loops.
9. Facilitate the use of stapling devices (i.e. intraluminal, linear, robotic, endoscopic, etc.)
10. Procure grafts for tissue transplantation.
11. Prepare grafts for tissue transplantation.
12. Irrigate surgical wound.

13. Utilize appropriate suction equipment and techniques (e.g. liposuction, free-standing powered suction, suction D&C machine, etc.).
14. Assist in minimally invasive and robotics cases.
15. Assist in I & D procedures.
16. Assist in wound debridement.
17. Handle specimens appropriately.
18. Select appropriate wound drainage or vacuum devices.
19. Assist in the placement and securing of surgical drains, catheters and tubes.
20. Monitor use of supplies and solutions during procedure.
21. Transfer the patient during Intra-Op.
22. Assist with incision.
23. Insert of trocars under direct visualization.
24. Perform or assist with closure of tissue planes; Suturing, Skin staples.
25. Label margins on specimen.
26. Inject local anesthetic.
27. Participate in counting sharps, instruments and sponges.
28. Provide visualization of the operative site using appropriate methods, including:
 - 28a. manipulation of tissue and materials;
 - 28b. retraction;
 - 28c. sponging;
 - 28d. suctioning;
 - 28e. irrigation.
29. Tie or tag sutures as needed.
30. Cut sutures as needed.
31. Apply appropriate suturing techniques for wound closure.
32. Initiate corrective action for any break in sterile technique.
 - 32a. Avoid contamination of sterile drapes, personnel, & instruments;
 - 32b. Communicate any witnessed or suspected contamination to surgical team.
33. Minimize the potential for iatrogenic injury to the patient related to a surgical procedure.
34. Move patient or body part to promote surgical exposure while reducing the risk of discomfort and complications.
35. Monitor traffic in and out of the OR.
36. Utilize appropriate techniques to assist with hemostasis - Temporary:
 - 36a. Apply tourniquets and demonstrate awareness of the indications/ contraindications for use;
 - 36b. Apply vessel loops;
 - 36c. Apply non crushing clamps;
 - 36d. Apply direct digital pressure.
37. Utilize appropriate techniques to assist with hemostasis - Permanent:
 - 37a. Clamping and/or cauterizing vessels or tissue;
 - 37b. Tying and/or ligating clamped vessels or tissue;
 - 37c. Applying hemostatic clips;
 - 37d. Placing local hemostatic agents.
38. Apply knowledge of anatomy and surrounding structures pertaining to the operative procedure.

39. Follow safety procedures in regards to medication labeling.
40. Handle sharps appropriately.
41. Proper assembly and disassembly of specialty instruments.
42. Troubleshoot malfunctioning equipment or call biomedical equipment staff.
43. Ensure that operating personnel are wearing appropriate attire.
44. Protect integrity of catheters, drains, and intravascular lines.
45. Observe for alteration of skin integrity.

C. Postoperative Procedures

1. Dispose of contaminated sharps, wastes and supplies in compliance with Standard Precautions.
2. Change dressings.
3. Apply appropriate wound dressing.
4. Remove sutures and/or staples.
5. Transport patient.
6. Transfer the patient during Post-Op
7. Perform hand hygiene
8. Clean and prepare patient's wound for sterile dressing.
9. Remove Foley catheter as indicated.
10. Ensure patient safety and privacy during emergence from anesthesia.
11. Remove contaminated gown and gloves using appropriate technique.
12. Assist with room turnover.
13. Removal of drapes, cords, instruments, etc. from patient.
14. Apply negative pressure wound therapy.
15. Perform or assist in application of splints or casts.
16. Application of immobilization devices.

2. Ancillary Duties

A. Administrative and Personnel

1. Serve as technical subject matter expert to the rest of the surgical team.
2. Use effective communication skills to relay patient specific considerations.
3. Use interpersonal skills (e.g., listening, diplomacy, responsiveness) and group dynamics.
4. Apply ethical and legal practices related to surgical patient care.
5. Maintain awareness of appropriate environmental controls (e.g., temperature, air exchanges, humidity).
6. Assist in resuscitation of patient during cardiac arrest or other life threatening events.
7. Follow All Hazards emergency protocols.
8. Recognize safety and environmental hazards (e.g., lasers, radiologic equipment, fire, chemical spill, tissue plume).
9. Apply culturally and socially competent strategies to bridge or mediate between the patient's culture and the care team.

B. Equipment Sterilization and Maintenance

1. Operate sterilizing devices according to manufacturer's recommendations.
2. Maintain effective:
 - 2a. disinfection practices;
 - 2b. sterilization practices.

3. Maintain current knowledge of operative equipment (such as, but not limited to):
 - 3a. diagnostic equipment;
 - 3b. electrosurgery units (e.g., monopolar, bipolar, vessel sealing);
 - 3c. patient positioning equipment;
 - 3d. endoscopic instruments and equipment;
 - 3e. positioning and stabilizing equipment OR equipment;
 - 3f. doppler;
 - 3g. microscope;
 - 3h. dermatome and mesher;
 - 3i. robotics;
 - 3j. power equipment (e.g., drills, saws).

3. Advanced Science

A. Advanced Anatomy and Physiology

1. Apply advanced knowledge of pathophysiology and histology to handling and manipulation of tissue for:
 - 1a. abnormal anatomy (e.g., gastrointestinal tract, genitourinary tract, neurological, cardiothoracic, congenital defects);
 - 1b. disease processes (e.g., gastrointestinal tract, genitourinary tract, cardiovascular, respiratory, endocrine);
 - 1c. fractures (e.g., hip, shoulder, wrist, ankle, pelvis/spine);
 - 1d. malignancies (e.g., carcinomas, sarcomas, neurological malignancies, lymphatic malignancies, metastatic disease).

B. Advanced Principles of Microbiology

1. Practice Standard Precautions.
2. Apply the following principles of surgical microbiology to operative practice:
 - 2a. classification and pathogenesis;
 - 2b. factors influencing wound healing (e.g., condition of patient, infectious processes, wound type);
 - 2c. infection control procedures (e.g., aseptic technique);
 - 2d. surgical wound classification.

C. Surgical Pharmacology and Anesthesia

1. Apply advanced knowledge of pharmacology and anesthesia concepts to operative practice to:
 - 1a. assist physician in treating pharmacologic and/or complications;
 - 1b. handle and administer pharmacologic agents;
 - 1c. identify situations in which blood and fluid replacement is needed;
 - 1d. recognize signs and symptoms of drug reactions and interactions;
 - 1e. the use of anesthesia methods to assist anesthesia providers.
2. Verify medications and solutions at the sterile field.
3. Calculate amount of medications and solutions used.
4. Mix medications and solutions at the sterile field.

Job Analysis Survey

PSI developed, administered, and monitored a survey to validate the tasks developed by the job analysis committee and to help determine content weighting. To this end, the survey collected respondents' ratings of the importance and frequency for each task. The importance and frequency scale were used to evaluate the appropriateness of the inclusion of each task statement.

Importance How important is this task to the job role?

- 0 - Not Relevant
- 1 - Minimally Important
- 2 - Somewhat Important
- 3 - Moderately Important
- 4 - Very Important
- 5 - Critically Important

Frequency Approximately how frequently do you perform this task in your role?

- 0 - Never/Not Relevant
- 1 - Rarely
- 2 - Seldom
- 3 - Occasionally
- 4 - Frequently
- 5 - Very Frequently

Between May 16, 2022 and May 23, 2022, a pilot survey was conducted with the job analysis committee and NBSTSA staff members to ensure that the survey was operating correctly, and any modifications or corrections were made address the pilot survey reviewers' comments. See Appendix C for a copy of the final job analysis survey.

The live survey was sent using online survey software to a list of 5,966 individuals that was obtained from NBSTSA. The list consisted of certified surgical technologists and associate members. The number of individuals that responded to the survey (tasks statements) was 750 (12.6%). The survey was opened on June 21, 2022 and closed on July 18, 2022. See Appendix D for the email sent to potential respondents.

Following the close of the survey, the data were analyzed to identify any respondents who did not complete the survey or provided responses lacking any variance (i.e., "straight-lining" or providing the same response to every task). Responses from 373 respondents were removed from the data set, yielding a usable number of 377 completed responses. Of those respondents who were removed, 373 were removed due to not completing the survey and none were removed due to a lack of variance in their responses.

Table 1 shows the mean ratings provided for frequency and importance of the task statements.

Table 1.
Frequency and Importance Ratings for Task Statements.

Task Statements	Frequency	Importance
1 Acquire radiographic images for intraoperative reference.	2.574	2.651
2 Anticipate the needs of the surgical team prior to entering the operating room.	4.753	4.642
3 Prepare and maintain operating room environment according to surgical procedure (e.g., temperature, humidity, lights, furniture).	3.823	3.841
4 Confirm availability of grafts.	3.394	3.851
5 Confirm availability of any items needed for implantation (e.g., breast implants, tissue expanders, biological mesh, etc.).	3.628	4.061
6 Obtain instruments, supplies, and equipment and verify readiness for surgery.	4.097	4.188
7 Select appropriate patient positioning devices.	4.487	4.493
8 Don personal protective equipment.	4.818	4.742
9 Open sterile supplies while maintaining aseptic technique.	4.591	4.674
10 Assess and reduce risk for intraoperative injuries.	4.522	4.658
11 Transfer the patient during Pre-Op.	2.882	2.846
12 Remove external appliances.	2.717	2.944
13 Perform open and closed gloving techniques.	4.503	4.533
14 Utilize thermoregulatory devices.	3.453	3.664
15 Utilize appropriate skin preparation techniques.	3.957	4.381
16 Perform surgical hand scrub, gowning, and gloving.	4.874	4.812
17 Gown and glove sterile team members.	3.422	3.759
18 Specify methods of operative exposure.	4.213	4.306
19 Observe sounds by electrical devices not in use.	3.497	3.512
20 Review medical chart. History, Physical, Laboratory results, diagnostic results, and allergies, etc.	3.329	3.557
21 Prepare surgical consent.	0.836	1.635
22 Verify surgical consent.	3.255	3.666
23 Maintain familiarity with positioning equipment specific to specialty procedures.	4.543	4.566
24 Verify availability of medical supplies:	4.137	4.191
25 Verify availability of medical supplies: vendor trays;	3.235	3.509
26 Verify availability of medical supplies: suture & hemostatic agents;	4.364	4.383
27 Verify availability of medical supplies: "hold" items etc.	3.889	3.666
28 Actively participate in Time Out.	4.833	4.771
29 Verify packaging of sterile supplies; Items are not expired.	4.232	4.403
30 Apply safety strap.	4.449	4.592
31 Apply, connect, activate antiembolic devices.	3.651	3.840
32 Apply return electrode pad.	3.645	4.093
33 Apply pneumatic tourniquet.	3.353	3.683
34 Pre-op introduction to patient.	2.851	2.829
35 Insert and/or assist with placement of Foley catheter.	2.866	3.305

Task Statements		Frequency	Importance
36	Perform and/or assist with draping of patient utilizing aseptic technique.	4.866	4.777
37	Assist with positioning of patient (e.g. supine, prone, lateral, chest, or lithotomy) considering:	4.825	4.767
38	Assist with positioning of patient (e.g. supine, prone, lateral, chest, or lithotomy) considering: patient comfort & safety;	4.661	4.613
39	Assist with positioning of patient (e.g. supine, prone, lateral, chest, or lithotomy) considering: Points of pressure;	4.672	4.721
40	Assist with positioning of patient (e.g. supine, prone, lateral, chest, or lithotomy) considering: Circulation;	4.389	4.563
41	Assist with positioning of patient (e.g. supine, prone, lateral, chest, or lithotomy) considering: Nerve damage;	4.563	4.710
42	Assist with positioning of patient (e.g. supine, prone, lateral, chest, or lithotomy) considering: Familiarity with common positions.	4.686	4.660
43	Test operational efficiency of equipment prior to use as appropriate.	3.733	3.976
44	Assist anesthesia provider.	3.272	3.485
45	Throw all cords off of the patient for circulator to connect.	4.290	3.910
46	Perform hand hygiene.	4.906	4.788
47	Assist with the plan of care under the direction of a physician.	3.555	3.816
48	Select appropriate suture based on. usage; tissue type; specific wound characteristics.	4.456	4.454
49	Facilitate the efficiency of the surgical procedure.	4.633	4.533
50	Provide assistance to the rest of the surgical team in the assessment and care of the patient.	4.586	4.464
51	Awareness of patients intraoperative status (e.g., vital signs, monitor color of blood, onset of blood loss, monitor position of patient during procedure).	4.314	4.378
52	Pass needed instruments, sutures, supplies and other equipment.	3.327	3.495
53	Manipulate body tissues and anatomic structures (e.g., Halsted's Principles, tissue manipulation methods, traction/counter traction).	4.772	4.732
54	Utilize appropriate techniques for tissue dissection.	4.459	4.576
55	Operate specialty equipment (e.g., endoscopic devices, harmonic scalpel, power equipment).	4.133	4.370
56	Utilize vessel loops.	3.241	3.714
57	Facilitate the use of stapling devices (i.e. intraluminal, linear, robotic, endoscopic, etc.)	3.623	4.024
58	Procure grafts for tissue transplantation.	2.233	3.163
59	Prepare grafts for tissue transplantation.	2.631	3.449
60	Irrigate surgical wound.	4.592	4.375
61	Utilize appropriate suction equipment and techniques (e.g. liposuction, free-standing powered suction, suction D&C machine, etc.).	3.968	4.051
62	Assist in minimally invasive and robotics cases.	3.430	3.586



Task Statements		Frequency	Importance
63	Assist in I & D procedures.	3.324	3.367
64	Assist in wound debridement.	3.391	3.545
65	Handle specimens appropriately.	4.067	4.407
66	Select appropriate wound drainage or vacuum devices.	3.493	3.888
67	Assist in the placement and securing of surgical drains, catheters and tubes.	4.074	4.286
68	Monitor use of supplies and solutions during procedure.	3.719	3.740
69	Transfer the patient during Intra-Op.	3.812	3.928
70	Assist with incision.	4.098	4.072
71	Insert of trocars under direct visualization.	3.639	4.074
72	Perform or assist with closure of tissue planes; Suturing, Skin staples.	4.785	4.759
73	Label margins on specimen.	2.317	3.263
74	Inject local anesthetic.	4.008	4.191
75	Participate in counting sharps, instruments and sponges.	3.086	3.741
76	Provide visualization of the operative site using appropriate methods, including: manipulation of tissue and materials;	4.779	4.716
77	Provide visualization of the operative site using appropriate methods, including: retraction;	4.801	4.695
78	Provide visualization of the operative site using appropriate methods, including:	4.763	4.570
79	Provide visualization of the operative site using appropriate methods, including: suctioning;	4.805	4.634
80	Provide visualization of the operative site using appropriate methods, including: irrigation.	4.678	4.443
81	Tie or tag sutures as needed.	4.581	4.523
82	Cut sutures as needed.	4.777	4.423
83	Apply appropriate suturing techniques for wound closure.	4.695	4.732
84	Initiate corrective action for any break in sterile technique: Avoid contamination of sterile drapes, personnel, & instruments;	4.340	4.806
85	Initiate corrective action for any break in sterile technique: Communicate any witnessed or suspected contamination to surgical team.	4.045	4.782
86	Minimize the potential for iatrogenic injury to the patient related to a surgical procedure.	4.043	4.565
87	Move patient or body part to promote surgical exposure while reducing the risk of discomfort and complications.	4.277	4.531
88	Monitor traffic in and out of the OR.	3.255	3.573
89	Utilize appropriate techniques to assist with hemostasis - Temporary: Apply tourniquets and demonstrate awareness of the indications/ contraindications for use;	4.008	4.355
90	Utilize appropriate techniques to assist with hemostasis - Temporary: Apply vessel loops;	2.901	3.539
91	Utilize appropriate techniques to assist with hemostasis - Temporary: Apply non crushing clamps;	3.480	4.070

Task Statements		Frequency	Importance
92	Utilize appropriate techniques to assist with hemostasis - Temporary: Apply direct digital pressure.	3.780	4.237
93	Utilize appropriate techniques to assist with hemostasis - Permanent: Clamping and/or cauterizing vessels or tissue;	4.312	4.533
94	Utilize appropriate techniques to assist with hemostasis - Permanent: Tying and/or ligating clamped vessels or tissue;	3.918	4.382
95	Utilize appropriate techniques to assist with hemostasis - Permanent: Applying hemostatic clips;	3.303	4.045
96	Utilize appropriate techniques to assist with hemostasis - Permanent: Placing local hemostatic agents.	3.604	4.106
97	Apply knowledge of anatomy and surrounding structures pertaining to the operative procedure.	4.645	4.716
98	Follow safety procedures in regards to medication labeling.	3.814	4.398
99	Handle sharps appropriately.	4.782	4.707
100	Proper assembly and disassembly of specialty instruments.	3.621	3.912
101	Troubleshoot malfunctioning equipment or call biomedical equipment staff.	3.300	3.859
102	Ensure that operating personnel are wearing appropriate attire.	3.318	3.764
103	Protect integrity of catheters, drains, and intravascular lines.	4.125	4.416
104	Observe for alteration of skin integrity.	4.321	4.464
105	Dispose of contaminated sharps, wastes and supplies in compliance with Standard Precautions.	3.452	3.878
106	Change dressings.	2.855	3.479
107	Apply appropriate wound dressing.	4.644	4.475
108	Remove sutures and/or staples.	3.035	3.573
109	Transport patient.	2.175	2.655
110	Transfer the patient during Post-Op	2.700	2.918
111	Perform hand hygiene.	4.880	4.732
112	Clean and prepare patient's wound for sterile dressing.	4.554	4.496
113	Remove Foley catheter as indicated.	3.053	3.499
114	Ensure patient safety and privacy during emergence from anesthesia.	4.147	4.263
115	Remove contaminated gown and gloves using appropriate technique.	4.814	4.435
116	Assist with room turnover.	3.699	3.377
117	Removal of drapes, cords, instruments, etc. from patient.	4.503	3.920
118	Apply negative pressure wound therapy.	3.172	3.668
119	Perform or assist in application of splints or casts.	2.952	3.434
120	Application of immobilization devices.	3.016	3.503
121	Serve as technical subject matter expert to the rest of the surgical team.	3.925	3.919
122	Use effective communication skills to relay patient specific considerations.	4.249	4.375
123	Use interpersonal skills (e.g., listening, diplomacy, responsiveness) and group dynamics.	4.443	4.369

Task Statements		Frequency	Importance
124	Apply ethical and legal practices related to surgical patient care.	4.368	4.485
125	Maintain awareness of appropriate environmental controls (e.g., temperature, air exchanges, humidity).	3.705	3.871
126	Assist in resuscitation of patient during cardiac arrest or other life threatening events.	2.881	4.652
127	Follow All Hazards emergency protocols.	3.514	4.426
128	Recognize safety and environmental hazards (e.g., lasers, radiologic equipment, fire, chemical spill, tissue plume).	3.803	4.364
129	Apply culturally and socially competent strategies to bridge or mediate between the patient's culture and the care team.	3.324	3.954
130	Operate sterilizing devices according to manufacturer's recommendations.	1.638	2.636
131	Maintain effective: disinfection practices;	2.398	3.185
132	Maintain effective: sterilization practices.	1.850	2.901
133	Maintain current knowledge of operative equipment (such as, but not limited to): diagnostic equipment;	3.614	3.981
134	Maintain current knowledge of operative equipment (such as, but not limited to): electrosurgery units (e.g., monopolar, bipolar, vessel sealing);	4.144	4.275
135	Maintain current knowledge of operative equipment (such as, but not limited to): patient positioning equipment;	4.298	4.379
136	Maintain current knowledge of operative equipment (such as, but not limited to): endoscopic instruments and equipment;	3.500	3.738
137	Maintain current knowledge of operative equipment (such as, but not limited to): positioning and stabilizing equipment OR equipment;	4.111	4.215
138	Maintain current knowledge of operative equipment (such as, but not limited to): doppler;	2.699	3.384
139	Maintain current knowledge of operative equipment (such as, but not limited to): microscope;	2.412	3.070
140	Maintain current knowledge of operative equipment (such as, but not limited to): dermatome and mesher;	2.203	3.166
141	Maintain current knowledge of operative equipment (such as, but not limited to): robotics;	2.839	3.287
142	Maintain current knowledge of operative equipment (such as, but not limited to): power equipment (e.g., drills, saws).	3.654	3.975
143	Apply advanced knowledge of pathophysiology and histology to handling and manipulation of tissue for: abnormal anatomy (e.g., gastrointestinal tract, genitourinary tract, neurological, cardiothoracic, congenital defects);	3.915	4.285
144	Apply advanced knowledge of pathophysiology and histology to handling and manipulation of tissue for: disease processes (e.g., gastrointestinal tract, genitourinary tract, cardiovascular, respiratory, endocrine);	3.542	3.992

Task Statements		Frequency	Importance
145	Apply advanced knowledge of pathophysiology and histology to handling and manipulation of tissue for: fractures (e.g., hip, shoulder, wrist, ankle, pelvis/spine);	3.427	3.868
146	Apply advanced knowledge of pathophysiology and histology to handling and manipulation of tissue for: malignancies (e.g., carcinomas, sarcomas, neurological malignancies, lymphatic malignancies, metastatic disease).	3.392	3.877
147	Practice Standard Precautions.	4.671	4.644
148	Apply the following principles of surgical microbiology to operative practice: classification and pathogenesis;	3.130	3.494
149	Apply the following principles of surgical microbiology to operative practice: factors influencing wound healing (e.g., condition of patient, infectious processes, wound type);	3.910	4.171
150	Apply the following principles of surgical microbiology to operative practice: infection control procedures (e.g., aseptic technique);	4.656	4.728
151	Apply the following principles of surgical microbiology to operative practice: surgical wound classification.	3.398	3.772
152	Apply advanced knowledge of pharmacology and anesthesia concepts to operative practice to: assist physician in treating pharmacologic and/or complications;	2.415	3.232
153	Apply advanced knowledge of pharmacology and anesthesia concepts to operative practice to: handle and administer pharmacologic agents;	2.911	3.501
154	Apply advanced knowledge of pharmacology and anesthesia concepts to operative practice to: identify situations in which blood and fluid replacement is needed;	2.317	3.441
155	Apply advanced knowledge of pharmacology and anesthesia concepts to operative practice to: recognize signs and symptoms of drug reactions and interactions;	2.690	3.858
156	Apply advanced knowledge of pharmacology and anesthesia concepts to operative practice to: the use of anesthesia methods to assist anesthesia providers.	2.577	3.259
157	Verify medications and solutions at the sterile field.	4.175	4.418
158	Calculate amount of medications and solutions used.	3.347	3.912
159	Mix medications and solutions at the sterile field.	2.960	3.818

The survey included demographic questions regarding professional characteristics relevant to the job role. Table 2 shows a summary of the demographic questions in the survey.

Table 2.

Results of the Demographic Questions in the Job Analysis Survey.

1. Indicate the location of facility or organization in which you work.	<i>n</i>	%
Alabama	3	0.80%
Arizona	8	2.13%
Arkansas	6	1.60%
California	2	0.53%
Colorado	12	3.19%
Connecticut	1	0.27%
District of Columbia	1	0.27%
Florida	30	7.98%
Georgia	17	4.52%
Hawaii	2	0.53%
Idaho	4	1.06%
Illinois	11	2.93%
Indiana	16	4.26%
Iowa	1	0.27%
Kentucky	11	2.93%
Louisiana	9	2.39%
Maine	3	0.80%
Maryland	3	0.80%
Massachusetts	6	1.60%
Michigan	15	3.99%
Minnesota	8	2.13%
Mississippi	2	0.53%
Missouri	3	0.80%
Montana	4	1.06%
Nebraska	4	1.06%
Nevada	4	1.06%
New Hampshire	4	1.06%
New Jersey	1	0.27%
New Mexico	7	1.86%
New York	1	0.27%
North Carolina	4	1.06%
North Dakota	1	0.27%
Ohio	23	6.12%
Oklahoma	4	1.06%
Oregon	8	2.13%
Pennsylvania	9	2.39%
South Carolina	11	2.93%
South Dakota	3	0.80%
Tennessee	19	5.05%
Texas	56	14.89%
Utah	2	0.53%
Vermont	1	0.27%
Virginia	14	3.72%
West Virginia	4	1.06%
Wisconsin	13	3.46%
Other	5	1.33%

2. Indicate your primary place of employment.	<i>n</i>	%
Academic institution	15	3.98%
Ambulatory care center	21	5.57%
Hospital/Healthcare institution	235	62.33%
Medical/surgical sales company	4	1.06%
Military/Government	0	0.00%
Physician practice	26	6.90%
Self-employed/Independent	38	10.08%
Specialty hospital	4	1.06%
Traveling staffing agency	13	3.45%
Not employed	2	0.53%
Other	19	5.04%

3. Which of the following best describes your employment?	<i>n</i>	%
Administrator	2	0.53%
Consultant	2	0.53%
Educator	4	1.07%
Practitioner	251	67.11%
Both practitioner and educator	89	23.80%
Other	26	6.95%

4. Indicate the number of years you have worked as a surgical first assistant.	<i>n</i>	%
< 1 Year	26	6.93%
1 - 5 years	113	30.13%
6 - 10 years	74	19.73%
11 - 15 years	48	12.80%
16 - 20 years	31	8.27%
> 20 years	83	22.13%

5. Indicate the number of years you have held the CSFA credential.	<i>n</i>	%
< 1 Year	28	7.55%
1 - 5 years	132	35.58%
6 - 10 years	72	19.41%
11 - 15 years	54	14.56%
16 - 20 years	35	9.43%
> 20 years	50	13.48%

6. Do you supervise employees as part of your job responsibilities?	<i>n</i>	%
Yes	128	65.68%
No	245	34.32%

7. If you hold the CST in addition to your CSFA credential, indicate the percentage of your practice spent in the role of surgical first assistant.	<i>n</i>	<i>%</i>
0 - 5%	36	9.97%
11 - 20%	5	1.39%
21 - 30%	12	3.32%
31 - 40%	11	3.05%
41 - 50%	13	3.60%
51 - 60%	26	7.20%
6 - 10%	17	4.71%
61 - 70%	14	3.88%
71 - 80%	22	6.09%
81 - 90%	47	13.02%
91 - 100%	158	43.77%

8. Indicate the surgical specialties in which you work. (select all that apply)	<i>n</i>	<i>%</i>
Bariatrics	108	28.72%
Cardiovascular - Thoracic	71	18.88%
Cath lab	15	3.99%
Colorectal	149	39.63%
Dental	24	6.38%
Dermatological	13	3.46%
Endoscopy	54	14.36%
Endoscopic vein harvesting	31	8.24%
Endovascular	58	15.43%
ENT	118	31.38%
General surgery	275	73.14%
Genitourinary	135	35.90%
Labor and Delivery	81	21.54%
Neurosurgery	112	29.79%
OB/GYN	192	51.06%
Ophthalmology	44	11.70%
Oral/maxillofacial	56	14.89%
Organ Procurement	40	10.64%
Orthopaedic & Spine	158	42.02%
Orthopedics	251	66.76%
Pain	16	4.26%
Pediatrics	33	8.78%
Peripheral vascular	122	32.45%
Plastic/reconstructive	171	45.48%
Podiatry	122	32.45%
Robotics	188	50.00%
Tissue/Organ transplantation	22	5.85%
Thoracic	77	20.48%
Trauma	125	33.24%
Other	26	6.91%

9. Indicate your highest level of education you have completed.	<i>n</i>	%
High school diploma or equivalency diploma	2	0.53%
College/vocational certificate/diploma	96	25.46%
Some college	37	9.81%
Associate degree	158	41.91%
Bachelor's degree	60	15.92%
Master's degree	19	5.04%
Doctoral degree	1	0.27%
Foreign medical degree	0	0.00%
Other	4	1.06%

10. Indicate the type of training you have received in surgical first assisting. (select all that apply)	<i>n</i>	%
On-the-job	89	23.67%
Military	15	3.99%
CAAHEP-accredited surgical assistant program	252	67.02%
Non-accredited program	6	1.60%
Other	14	3.72%

11. Does your employer require certification as a CSFA as condition of employment?	<i>n</i>	%
Yes	314	83.73%
No	61	16.27%

12. Did your compensation increase after receiving your CSFA credential?	<i>n</i>	%
Yes	301	80.27%
No	74	19.73%

13. Which of these additional credentials do you hold? (select all that apply)	<i>n</i>	%
CHL	0	0.00%
CIS	1	0.27%
CNOR	6	1.60%
CRCST	6	1.60%
CRNFA	1	0.27%
CSA	19	5.05%
CSFA	289	76.86%
CSPDT	0	0.00%
CST	284	75.53%
DO	0	0.00%
FAST	16	4.26%
LPN/LVN	9	2.39%
MD	0	0.00%
OAC (OPA-C)	1	0.27%
PA-C	0	0.00%
RN	8	2.13%
SA-C	3	0.80%
TS-C	2	0.53%
None	9	2.39%
Other	40	10.64%

Development of Exam Specifications

The Job Analysis Committee met on August 21, 2022 to review the results of the survey, finalize the tasks that would comprise the next Examination Content Outline, and finalize the content weighting for the examination.

The committee reviewed the demographic results and confirmed that the results matched expectations and impressions of the practitioner population, suggesting that the respondent sample is reflective of the target population.

All tasks were reviewed by the committee for frequency and importance ratings. Criticality values (mean importance rating multiplied by the mean frequency rating) were used to evaluate the appropriateness of inclusion of the task statement. Tasks that fell below a threshold (7.5) were flagged for the committee to review and act upon. Table 3 displays the tasks that were reviewed and resulting decision.

Table 3.
Task List Changes.

		Committee Decision	Reason
1	Acquire radiographic images for intraoperative reference.	Exclude	Criticality
11	Transfer the patient during Pre-Op.	Exclude	Committee Vote
21	Prepare surgical consent.	Exclude	Criticality
52	Pass needed instruments, sutures, supplies and other equipment.	Exclude	Committee Vote
58	Procure grafts for tissue transplantation.	Exclude	Criticality
73	Label margins on specimen.	Exclude	Committee Vote
75	Participate in counting sharps, instruments and sponges. ³	Exclude	Not CSFA specific
86	Minimize the potential for iatrogenic injury to the patient related to a surgical procedure.	Exclude	Combined w/ 87
109	Transport patient.	Exclude	Criticality
110	Transfer the patient during Post-Op	Exclude	Committee Vote
111	Perform hand hygiene. ³	Exclude	Duplicative to 16 & 46
130	Operate sterilizing devices according to manufacturer's recommendations.	Exclude	Criticality
131	Maintain effective: disinfection practices.	Exclude	Criticality
132	Maintain effective: sterilization practices.	Exclude	Criticality
139	Maintain current knowledge of operative equipment (such as, but not limited to): microscope.	Exclude	Criticality
140	Maintain current knowledge of operative equipment (such as, but not limited to): dermatome and mesher.	Include	Committee Vote
151	Apply the following principles of surgical microbiology to operative practice: surgical wound classification.	Exclude	Committee Vote
154	Apply advanced knowledge of pharmacology and anesthesia concepts to operative practice to: identify situations in which blood and fluid replacement is needed;	Exclude	Committee Vote

³ Task was removed at an ad hoc meeting on January 28, 2023.

The committee then reviewed the draft content weighting, discussing any adjustments necessary to align the number of items per content area for adequate content coverage on the 150-item assessment. The draft content weighting was guided and developed by three sources 1) calculating the criticality value (mean importance rating multiplied by the mean frequency rating) and then determining a percentage weight based on the relative weight of the criticality value for each content area 2) survey responses on percent allocation to the three major domains and 3) committee judgement. The committee also considered complexities in the job role faced within each of the three major domains and provided individual judgements for the distribution of items classified as either recall or application (i.e., secondary classifications).

See Table 4 for a summary of the criticality values and weight. Table 5 contains respondent source information and Table 6 contains committee source information. The final Examination Content Outline can be found in Appendix E.

Table 4.
Criticality Values and Weight.

Task Statements			Criticality	Percentage	Items
1	1.A	Acquire radiographic images for intraoperative reference.	6.824	0.28%	0.41
2	1.A	Anticipate the needs of the surgical team prior to entering the operating room.	22.062	0.89%	1.34
3	1.A	Prepare and maintain operating room environment according to surgical procedure (e.g., temperature, humidity, lights, furniture).	14.682	0.59%	0.89
4	1.A	Confirm availability of grafts.	13.069	0.53%	0.79
5	1.A	Confirm availability of any items needed for implantation (e.g., breast implants, tissue expanders, biological mesh, etc.).	14.734	0.60%	0.89
6	1.A	Obtain instruments, supplies, and equipment and verify readiness for surgery.	17.159	0.69%	1.04
7	1.A	Select appropriate patient positioning devices.	20.160	0.81%	1.22
8	1.A	Don personal protective equipment.	22.849	0.92%	1.39
9	1.A	Open sterile supplies while maintaining aseptic technique.	21.459	0.87%	1.30
10	1.B	Assess and reduce risk for intraoperative injuries.	21.060	0.85%	1.28
11	1.A	Transfer the patient during Pre-Op.	8.202	0.33%	0.50
12	1.A	Remove external appliances.	8.000	0.32%	0.48
13	1.A	Perform open and closed gloving techniques.	20.411	0.82%	1.24
14	1.A	Utilize thermoregulatory devices.	12.651	0.51%	0.77
15	1.A	Utilize appropriate skin preparation techniques.	17.336	0.70%	1.05
16	1.A	Perform surgical hand scrub, gowning, and gloving.	23.450	0.95%	1.42
17	1.A	Gown and glove sterile team members.	12.862	0.52%	0.78
18	1.A	Specify methods of operative exposure.	18.140	0.73%	1.10

Task Statements			Criticality	Percentage	Items
19	1.A	Observe sounds by electrical devices not in use.	12.283	0.50%	0.74
20	1.A	Review medical chart. History, Physical, Laboratory results, diagnostic results, and allergies, etc.	11.841	0.48%	0.72
21	1.A	Prepare surgical consent.	1.367	0.06%	0.08
22	1.A	Verify surgical consent.	11.931	0.48%	0.72
23	1.A	Maintain familiarity with positioning equipment specific to specialty procedures.	20.747	0.84%	1.26
24	1.A	Verify availability of medical supplies:	17.338	0.70%	1.05
25	1.A	Verify availability of medical supplies: vendor trays;	11.353	0.46%	0.69
26	1.A	Verify availability of medical supplies: suture & hemostatic agents;	19.127	0.77%	1.16
27	1.A	Verify availability of medical supplies: "hold" items etc.	14.258	0.58%	0.86
28	1.A	Actively participate in Time Out.	23.059	0.93%	1.40
29	1.A	Verify packaging of sterile supplies; Items are not expired.	18.633	0.75%	1.13
30	1.A	Apply safety strap.	20.427	0.83%	1.24
31	1.A	Apply, connect, activate antiembolic devices.	14.020	0.57%	0.85
32	1.A	Apply return electrode pad.	14.920	0.60%	0.90
33	1.A	Apply pneumatic tourniquet.	12.348	0.50%	0.75
34	1.A	Pre-op introduction to patient.	8.067	0.33%	0.49
35	1.A	Insert and/or assist with placement of Foley catheter.	9.471	0.38%	0.57
36	1.A	Perform and/or assist with draping of patient utilizing aseptic technique.	23.244	0.94%	1.41
37	1.A	Assist with positioning of patient (e.g. supine, prone, lateral, chest, or lithotomy) considering:	23.000	0.93%	1.39
38	1.A	Assist with positioning of patient (e.g. supine, prone, lateral, chest, or lithotomy) considering: patient comfort & safety;	21.501	0.87%	1.30
39	1.A	Assist with positioning of patient (e.g. supine, prone, lateral, chest, or lithotomy) considering: Points of pressure;	22.059	0.89%	1.34
40	1.A	Assist with positioning of patient (e.g. supine, prone, lateral, chest, or lithotomy) considering: Circulation;	20.026	0.81%	1.21
41	1.A	Assist with positioning of patient (e.g. supine, prone, lateral, chest, or lithotomy) considering: Nerve damage;	21.494	0.87%	1.30
42	1.A	Assist with positioning of patient (e.g. supine, prone, lateral, chest, or lithotomy) considering: Familiarity with common positions.	21.837	0.88%	1.32

Task Statements			Criticality	Percentage	Items
43	1.A	Test operational efficiency of equipment prior to use as appropriate.	14.843	0.60%	0.90
44	1.A	Assist anesthesia provider.	11.403	0.46%	0.69
45	1.A	Throw all cords off of the patient for circulator to connect.	16.774	0.68%	1.02
46	1.A	Perform hand hygiene.	23.489	0.95%	1.42
47	1.A	Assist with the plan of care under the direction of a physician.	13.569	0.55%	0.82
48	1.A	Select appropriate suture based on. usage; tissue type; specific wound characteristics.	19.843	0.80%	1.20
49	1.B	Facilitate the efficiency of the surgical procedure.	21.002	0.85%	1.27
50	1.B	Provide assistance to the rest of the surgical team in the assessment and care of the patient.	20.474	0.83%	1.24
51	1.B	Awareness of patients intraoperative status (e.g., vital signs, monitor color of blood, onset of blood loss, monitor position of patient during procedure).	18.884	0.76%	1.14
52	1.B	Pass needed instruments, sutures, supplies and other equipment.	11.627	0.47%	0.70
53	1.B	Manipulate body tissues and anatomic structures (e.g., Halsted's Principles, tissue manipulation methods, traction/counter traction).	22.581	0.91%	1.37
54	1.B	Utilize appropriate techniques for tissue dissection.	20.402	0.82%	1.24
55	1.B	Operate specialty equipment (e.g., endoscopic devices, harmonic scalpel, power equipment).	18.058	0.73%	1.09
56	1.B	Utilize vessel loops.	12.037	0.49%	0.73
57	1.B	Facilitate the use of stapling devices (i.e. intraluminal, linear, robotic, endoscopic, etc.)	14.580	0.59%	0.88
58	1.B	Procure grafts for tissue transplantation.	7.064	0.29%	0.43
59	1.B	Prepare grafts for tissue transplantation.	9.075	0.37%	0.55
60	1.B	Irrigate surgical wound.	20.090	0.81%	1.22
61	1.B	Utilize appropriate suction equipment and techniques (e.g. liposuction, free-standing powered suction, suction D&C machine, etc.).	16.073	0.65%	0.97
62	1.B	Assist in minimally invasive and robotics cases.	12.300	0.50%	0.75
63	1.B	Assist in I & D procedures.	11.194	0.45%	0.68
64	1.B	Assist in wound debridement.	12.022	0.49%	0.73
65	1.B	Handle specimens appropriately.	17.921	0.72%	1.09
66	1.B	Select appropriate wound drainage or vacuum devices.	13.582	0.55%	0.82
67	1.B	Assist in the placement and securing of surgical drains, catheters and tubes.	17.464	0.71%	1.06



Task Statements			Criticality	Percentage	Items
68	1.B	Monitor use of supplies and solutions during procedure.	13.909	0.56%	0.84
69	1.B	Transfer the patient during Intra-Op.	14.974	0.61%	0.91
70	1.B	Assist with incision.	16.686	0.67%	1.01
71	1.B	Insert of trocars under direct visualization.	14.827	0.60%	0.90
72	1.B	Perform or assist with closure of tissue planes; Suturing, Skin staples.	22.771	0.92%	1.38
73	1.B	Label margins on specimen.	7.562	0.31%	0.46
74	1.B	Inject local anesthetic.	16.797	0.68%	1.02
75	1.B	Participate in counting sharps, instruments and sponges.	11.542	0.47%	0.70
76	1.B	Provide visualization of the operative site using appropriate methods, including: manipulation of tissue and materials;	22.540	0.91%	1.37
77	1.B	Provide visualization of the operative site using appropriate methods, including: retraction;	22.538	0.91%	1.37
78	1.B	Provide visualization of the operative site using appropriate methods, including: sponging;	21.770	0.88%	1.32
79	1.B	Provide visualization of the operative site using appropriate methods, including: suctioning;	22.265	0.90%	1.35
80	1.B	Provide visualization of the operative site using appropriate methods, including: irrigation.	20.785	0.84%	1.26
81	1.B	Tie or tag sutures as needed.	20.717	0.84%	1.26
82	1.B	Cut sutures as needed.	21.126	0.85%	1.28
83	1.B	Apply appropriate suturing techniques for wound closure.	22.217	0.90%	1.35
84	1.B	Initiate corrective action for any break in sterile technique: Avoid contamination of sterile drapes, personnel, & instruments;	20.857	0.84%	1.26
85	1.B	Initiate corrective action for any break in sterile technique: Communicate any witnessed or suspected contamination to surgical team.	19.346	0.78%	1.17
86	1.B	Minimize the potential for iatrogenic injury to the patient related to a surgical procedure.	18.454	0.75%	1.12
87	1.B	Move patient or body part to promote surgical exposure while reducing the risk of discomfort and complications.	19.378	0.78%	1.17
88	1.B	Monitor traffic in and out of the OR.	11.631	0.47%	0.71
89	1.B	Utilize appropriate techniques to assist with hemostasis - Temporary: Apply tourniquets and demonstrate awareness of the indications/ contraindications for use;	17.457	0.71%	1.06

Task Statements			Criticality	Percentage	Items
90	1.B	Utilize appropriate techniques to assist with hemostasis - Temporary: Apply vessel loops;	10.266	0.41%	0.62
91	1.B	Utilize appropriate techniques to assist with hemostasis - Temporary: Apply non crushing clamps;	14.161	0.57%	0.86
92	1.B	Utilize appropriate techniques to assist with hemostasis - Temporary: Apply direct digital pressure.	16.018	0.65%	0.97
93	1.B	Utilize appropriate techniques to assist with hemostasis - Permanent: Clamping and/or cauterizing vessels or tissue;	19.547	0.79%	1.18
94	1.B	Utilize appropriate techniques to assist with hemostasis - Permanent: Tying and/or ligating clamped vessels or tissue;	17.167	0.69%	1.04
95	1.B	Utilize appropriate techniques to assist with hemostasis - Permanent: Applying hemostatic clips;	13.362	0.54%	0.81
96	1.B	Utilize appropriate techniques to assist with hemostasis - Permanent: Placing local hemostatic agents.	14.798	0.60%	0.90
97	1.B	Apply knowledge of anatomy and surrounding structures pertaining to the operative procedure.	21.905	0.89%	1.33
98	1.B	Follow safety procedures in regards to medication labeling.	16.775	0.68%	1.02
99	1.B	Handle sharps appropriately.	22.511	0.91%	1.36
100	1.B	Proper assembly and disassembly of specialty instruments.	14.168	0.57%	0.86
101	1.B	Troubleshoot malfunctioning equipment or call biomedical equipment staff.	12.735	0.51%	0.77
102	1.A	Ensure that operating personnel are wearing appropriate attire.	12.490	0.50%	0.76
103	1.B	Protect integrity of catheters, drains, and intravascular lines.	18.216	0.74%	1.10
104	1.B	Observe for alteration of skin integrity.	19.290	0.78%	1.17
105	1.C	Dispose of contaminated sharps, wastes and supplies in compliance with Standard Precautions.	13.387	0.54%	0.81
106	1.C	Change dressings.	9.933	0.40%	0.60
107	1.C	Apply appropriate wound dressing.	20.779	0.84%	1.26
108	1.C	Remove sutures and/or staples.	10.843	0.44%	0.66
109	1.C	Transport patient.	5.776	0.23%	0.35
110	1.C	Transfer the patient during Post-Op	7.877	0.32%	0.48
111	1.C	Perform hand hygiene	23.094	0.93%	1.40
112	1.C	Clean and prepare patient's wound for sterile dressing.	20.477	0.83%	1.24
113	1.C	Remove Foley catheter as indicated.	10.683	0.43%	0.65

Task Statements			Criticality	Percentage	Items
114	1.C	Ensure patient safety and privacy during emergence from anesthesia.	17.678	0.71%	1.07
115	1.C	Remove contaminated gown and gloves using appropriate technique.	21.352	0.86%	1.29
116	1.C	Assist with room turnover.	12.492	0.50%	0.76
117	1.C	Removal of drapes, cords, instruments, etc. from patient.	17.652	0.71%	1.07
118	1.C	Apply negative pressure wound therapy.	11.632	0.47%	0.71
119	1.C	Perform or assist in application of splints or casts.	10.136	0.41%	0.61
120	1.C	Application of immobilization devices.	10.564	0.43%	0.64
121	2.A	Serve as technical subject matter expert to the rest of the surgical team.	15.381	0.62%	0.93
122	2.A	Use effective communication skills to relay patient specific considerations.	18.589	0.75%	1.13
123	2.A	Use interpersonal skills (e.g., listening, diplomacy, responsiveness) and group dynamics.	19.414	0.78%	1.18
124	2.A	Apply ethical and legal practices related to surgical patient care.	19.589	0.79%	1.19
125	2.A	Maintain awareness of appropriate environmental controls (e.g., temperature, air exchanges, humidity).	14.339	0.58%	0.87
126	2.A	Assist in resuscitation of patient during cardiac arrest or other life threatening events.	13.404	0.54%	0.81
127	2.A	Follow All Hazards emergency protocols.	15.550	0.63%	0.94
128	2.A	Recognize safety and environmental hazards (e.g., lasers, radiologic equipment, fire, chemical spill, tissue plume).	16.595	0.67%	1.01
129	2.A	Apply culturally and socially competent strategies to bridge or mediate between the patient's culture and the care team.	13.145	0.53%	0.80
130	2.B	Operate sterilizing devices according to manufacturer's recommendations.	4.318	0.17%	0.26
131	2.B	Maintain effective: disinfection practices;	7.638	0.31%	0.46
132	2.B	Maintain effective: sterilization practices.	5.366	0.22%	0.33
133	2.B	Maintain current knowledge of operative equipment (such as, but not limited to): diagnostic equipment;	14.386	0.58%	0.87
134	2.B	Maintain current knowledge of operative equipment (such as, but not limited to): electrosurgery units (e.g., monopolar, bipolar, vessel sealing);	17.718	0.72%	1.07
135	2.B	Maintain current knowledge of operative equipment (such as, but not limited to): patient positioning equipment;	18.823	0.76%	1.14

Task Statements			Criticality	Percentage	Items
136	2.B	Maintain current knowledge of operative equipment (such as, but not limited to): endoscopic instruments and equipment;	13.081	0.53%	0.79
137	2.B	Maintain current knowledge of operative equipment (such as, but not limited to): positioning and stabilizing equipment OR equipment;	17.327	0.70%	1.05
138	2.B	Maintain current knowledge of operative equipment (such as, but not limited to): doppler;	9.134	0.37%	0.55
139	2.B	Maintain current knowledge of operative equipment (such as, but not limited to): microscope;	7.403	0.30%	0.45
140	2.B	Maintain current knowledge of operative equipment (such as, but not limited to): dermatome and mesher;	6.973	0.28%	0.42
141	2.B	Maintain current knowledge of operative equipment (such as, but not limited to): robotics;	9.332	0.38%	0.57
142	2.B	Maintain current knowledge of operative equipment (such as, but not limited to): power equipment (e.g., drills, saws).	14.524	0.59%	0.88
143	3.A	Apply advanced knowledge of pathophysiology and histology to handling and manipulation of tissue for: abnormal anatomy (e.g., gastrointestinal tract, genitourinary tract, neurological, cardiothoracic, congenital defects);	16.776	0.68%	1.02
144	3.A	Apply advanced knowledge of pathophysiology and histology to handling and manipulation of tissue for: disease processes (e.g., gastrointestinal tract, genitourinary tract, cardiovascular, respiratory, endocrine);	14.141	0.57%	0.86
145	3.A	Apply advanced knowledge of pathophysiology and histology to handling and manipulation of tissue for: fractures (e.g., hip, shoulder, wrist, ankle, pelvis/spine);	13.259	0.54%	0.80
146	3.A	Apply advanced knowledge of pathophysiology and histology to handling and manipulation of tissue for: malignancies (e.g., carcinomas, sarcomas, neurological malignancies, lymphatic malignancies, metastatic disease).	13.149	0.53%	0.80
147	3.B	Practice Standard Precautions.	21.695	0.88%	1.32
148	3.B	Apply the following principles of surgical microbiology to operative practice: classification and pathogenesis;	10.937	0.44%	0.66

Task Statements			Criticality	Percentage	Items
149	3.B	Apply the following principles of surgical microbiology to operative practice: factors influencing wound healing (e.g., condition of patient, infectious processes, wound type);	16.308	0.66%	0.99
150	3.B	Apply the following principles of surgical microbiology to operative practice: infection control procedures (e.g., aseptic technique);	22.017	0.89%	1.33
151	3.B	Apply the following principles of surgical microbiology to operative practice: surgical wound classification.	12.820	0.52%	0.78
152	3.C	Apply advanced knowledge of pharmacology and anesthesia concepts to operative practice to: assist physician in treating pharmacologic and/or complications;	7.805	0.32%	0.47
153	3.C	Apply advanced knowledge of pharmacology and anesthesia concepts to operative practice to: handle and administer pharmacologic agents;	10.193	0.41%	0.62
154	3.C	Apply advanced knowledge of pharmacology and anesthesia concepts to operative practice to: identify situations in which blood and fluid replacement is needed;	7.973	0.32%	0.48
155	3.C	Apply advanced knowledge of pharmacology and anesthesia concepts to operative practice to: recognize signs and symptoms of drug reactions and interactions;	10.380	0.42%	0.63
156	3.C	Apply advanced knowledge of pharmacology and anesthesia concepts to operative practice to: the use of anesthesia methods to assist anesthesia providers.	8.396	0.34%	0.51
157	3.C	Verify medications and solutions at the sterile field.	18.446	0.75%	1.12
158	3.C	Calculate amount of medications and solutions used.	13.097	0.53%	0.79
159	3.C	Mix medications and solutions at the sterile field.	11.300	0.46%	0.69

Table 5.
Survey Respondent Mean Content Allocation.

	<i>n</i>	Mean (%)
1. Perioperative Care	332	54.7%
2. Ancillary Duties	331	14.2%
3. Advanced Science	332	31.2%

Table 6.
Committee Judgement.

Domain	Committee Weight	# Items	Recall	Application
1. Perioperative Care	55%	83	30%	70%
A. Preoperative Preparation	10%	8		
B. Intraoperative Procedures	80%	67		
C. Postoperative Procedures	10%	8		
2. Ancillary Duties	14%	21	30%	70%
A. Administrative and Personnel	30%	6		
B. Equipment Operation	70%	15		
3. Advanced Science	31%	46	30%	70%
A. Advanced Anatomy and Physiology	80%	36		
B. Advanced Principles of Microbiology	10%	5		
C. Surgical Pharmacology and Anesthesia	10%	5		



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