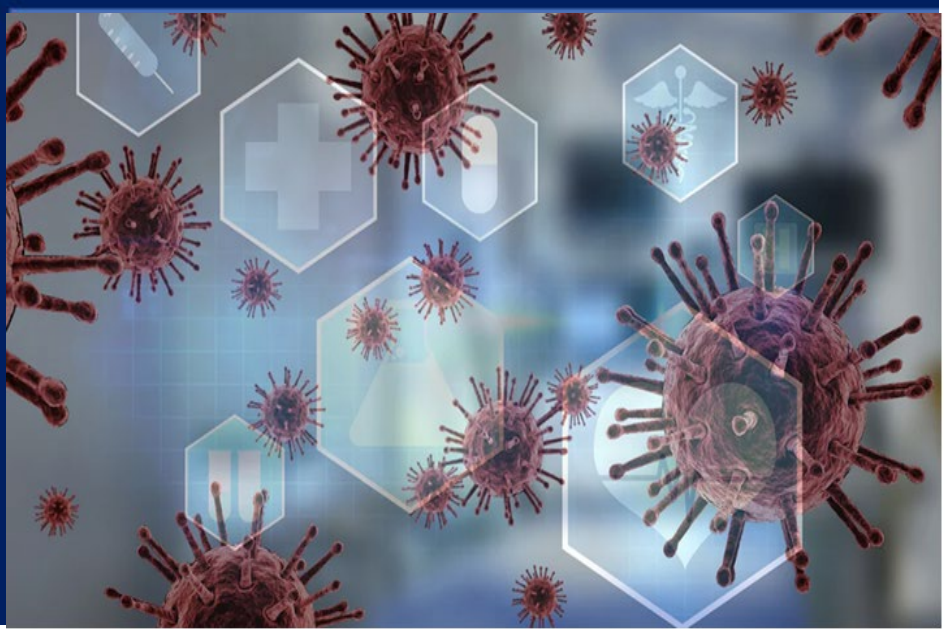


BMET 2310 Introduction to Infection Control



About Us

The College of Biomedical Equipment Technology and Imaging Academy represents a joint venture designed to meet the education, training, and professional development needs of Healthcare Technology Management professionals. Our headquarters is in San Antonio, Texas, adjacent to Fort Sam Houston, the military's home for biomedical equipment technician training. Our Imaging Academy training center is in Woodstock, Georgia, approximately 30 minutes from the Atlanta airport.

Locations

Main Campus

105 Windy Meadows,
Suites 201 & 202,
Schertz, Texas 78154
www.cbet.edu

Mission

"The mission of the College is to provide innovative and relevant Healthcare Technology Management, Compliance, and Imaging education, training, and career services to prepare our students to meet the evolving needs of employers in the healthcare industry."

About the Course

The Infection Control (IC) course is designed as an Interactive Distance Learning (IDL) course, including asynchronous and synchronous live virtual instruction. The course introduces transmission methods relative to a BMET's role in developing a foundational awareness of infectious pathogens in the healthcare and medical industry and in promoting infection control.

- Standard practices and methods of IC
- Modes of Transmission
- Transmission-based Precautions
- Periods of Infection

Course Description

The course is designed to develop a foundational awareness of infection control, safety precautions, and basic preventative protocols for working in the healthcare and medical industry. The course discusses topics associated with standard and transmission-based precautions to prevent the spread of infection and highlights safety as it pertains to the Environment of Care (EOC). The course identifies infectious microorganisms and reviews the types of transmissions, including bloodborne pathogens. The course content includes the factors required for an infection to occur and the chain of infection.

Learning Objectives

- LO1. Understand the categories of infectious microorganisms.
- LO2. Understand standard and transmission-based precautions and the modes of transmission.
- LO3. Identify the requirements for infection and the communicable infection cycle.
- LO4. Evaluate multiple healthcare settings and equipment and understand their unique infection control requirements.
- LO5. Understand updated COVID information and regulations as they apply to the medical field and the BMET department.
- LO6. Develop environmental awareness for the safety of medical equipment and infection control. Identify medical ethics, employee rights, and responsibilities.

Instructional Team

BMET 2310 Introduction to Infection Control program is led by a webinar and interactive distance learning formats. In addition to the weekly live sessions, the instructor is accessible via the Learning Management System (LMS) daily and by appointment via Zoom between the hours of Monday through Friday from 0800-1700 (CST).



Lupe McKnight serves as the instructor for BMET2310, BMET1302 Medical Terminology and Anatomy, and IMAG2380 Radiographic Anatomy for the College of Biomedical Equipment Technology and Imaging Academy. As an instructor, Lupe focuses on a student-centered approach to developing and delivering a curriculum to achieve student academic needs and success. Lupe proudly served as a member of the U.S. Army and is currently a Ph.D. student at Liberty University for a doctoral degree in higher education administration and organizational leadership. Throughout the course, Lupe can be contacted directly through CANVAS messaging or via e-mail at gmcknight@cbet.edu, during office hours, Monday through Friday, 0800-1700 CST.

Instructional Methods and Activities

The student online learning environment is structured to mirror the course syllabus and includes all the information students require to successfully navigate the course. The online learning environment, referred to as CANVAS, provides a means for students to engage, communicate, and learn. CBET instructors will actively engage students in CANVAS via discussion board forums and other activities designed to cultivate student engagement and participation.

Online Classes (Daily). Students are expected to engage in CANVAS. Courses include weekly assignments, quizzes, tests, and other requirements prescribed by the instructor. Students are responsible for completing weekly assignments in a

timely manner as prescribed by the instructor(s). It is important to remember that in addition to the resulting grades, completion of weekly assignments is also used to measure student engagement, attendance, and participation

Weekly Live Webinars. Mandatory instructor-led webinars will be conducted at least once per week (60 Minutes). Additionally, students may request one-on-one counseling or tutoring sessions based on the instructor's availability. Webinars are not optional; however, we understand that from time-to-time students may not be able to attend in person. If you cannot attend a live session, the webinars will be posted in CANVAS for review.

Online Discussion Forum (daily/weekly). CANVAS includes a discussion board with weekly prompts and instructions for completing daily/weekly assignments. Students are required to respond to all weekly discussion board topics and instructor-directed prompts. Responses must be substantive and meet the minimum word count requirement. Additionally, students are required to engage with peers by responding to no fewer than two student responses per week. Student participation and attendance in CANVAS is reported to the Director of Education on a weekly basis and the information is used, in part, to measure attendance and participation in the course.

Week 1/Module 1 (Intro to IC)

Learning Objective 1. Understand the different categories of infectious microorganisms and identify the differences between viral and bacterial pathogens.	
TLO 1	Understand the main microorganisms that cause infections and diseases.
TLO 2	Identify the difference between viral pathogens and bacterial pathogens.
TLO 3	Understand the terminology associated with infectious microorganisms and infection control.

Module 1 Overview. The first module requires students to evaluate their role as a BMET and the opportunities for infection control and exposure. Students will review various infectious microorganisms and focus on bacterial and viral pathogens.

Module 1 Webinar Session (60 Minutes). Provides an overview of the course and instructions to help students access the materials and resources. Course formalities and assignment expectations will be discussed. The webinar reviews various microorganisms and focuses on infectious pathogens, specifically viruses, and bacteria.

Module 1 Assignments

Assignment 1. Webinar Assessment

Based on the webinar content, answer the following with a minimum of 200 words:

Webinar Question (WQ) 1 – *What is the difference between viral and bacterial pathogens?*

Webinar Question (WQ) 2 – *Explain why you consider a virus to be living or not living.*

Assignment 2. Discussion Questions

Answer the Discussion Questions by Thursday, 11:59 pm CST, and reply to two posts by Sunday, 11:59 pm CST. Each response must contain substantive information, consist of a minimum of 150 words, and be written in the student's own terms and understanding.

Discussion Question (DQ) 1 – *Introduce yourself to the class by describing your (1) experience in the medical field, including infection control, and (2) where you work currently.*

Discussion Question (DQ) 2 – *Explain why it is vital for a biomedical technician without direct patient interaction to understand infection control when retrieving, repairing, or distributing medical equipment.*

Assignment 3. Quiz.

Complete the quiz by Sunday, 11:59 pm CST. The quiz is timed, one attempt is allotted, and it is open notes.

Week 2/Module 2 (PPE, Transmissions, & Bloodborne Pathogens)

Learning Objective 2. Understand the difference between standard and transmission-based precautions. Understand the methods of transmission for infectious pathogens.	
TLO 1	Identify standard precautions and transmission-based precautions and understand when to apply them.
TLO 2	Understand the types of transmissions and preventative measures.
TLO 3	Identify possible exposure to bloodborne pathogens and mitigating methods.

Module 2 Overview. Week 2 students will identify PPE available and recommended daily. Students will review the different transmission-based precautions and identify when additional PPE is required. Students will evaluate the different stages of infection and identify the transmission methods. Students will review the transmission methods of bloodborne pathogens and identify safety precautions.

Module 2 Webinar Session (60 Minutes). The class discussion focuses on PPE, the modes of transmission of infectious agents, and the stages of disease. The webinar reviews the categories of direct and indirect contact for transmitting infectious pathogens and droplet and airborne transmission.

Module 2 Assignments.

Assignment 1. Webinar Assessment.

Based on the webinar content, answer the following by Sunday 11:59 pm CST with a minimum of 200 words:

Webinar Question (WQ) 1 – (1) *What are the types of transmissions for infectious agents, including bloodborne pathogens?* (2) *Provide an example for each mode of transmission.*

Webinar Question (WQ) 2 – (1) *What are standard and transmission-based precautions?* (2) *Provide an example of each.*

Assignment 2. Discussion Questions.

Answer the Discussion Questions by Thursday, 11:59 pm CST, and reply to two posts by Sunday, 11:59 pm CST. Each response must contain substantive information, consist of a minimum of 150 words, and be written in the student's own terms and understanding.

Discussion Question (DQ) 1 – (1) *List and define the stages of infection.*

Discussion Question (DQ) 2 – (1) *Select a disease and provide information about the incubation period, and (2) what are some factors that influence the incubation period?*

Assignment 3. Quiz.

Complete the quiz by Sunday, 11:59 pm CST. The quiz is timed, one attempt is allotted, and it is open notes.

Week 3/Module 3 (Requirements, Chain of Infection, & Stages)

Learning Objective 3. Identify the requirements for infection and how the communicable infection cycles.	
TLO 1	Learn the three requirements for an infection to occur.
TLO 2	Establish an understanding of the chain of infection and the opportunity to break the cycle.
TLO 3	Understand the different stages of infection marked by the number of pathogens and symptoms.

Module 3 Overview. Students will review the continuous cycle of infection and identify methods for stopping the spread of infection. Students will identify the three things required for an infection and the subdivisions of the chain of infection. Students will review the different stages of infection, from subclinical to clinical symptoms.

Webinar Session (60 Minutes). The module 3 webinar will review the chain of infection, how the infection cycles through society, and methods to mitigate the spread of infection. The webinar covers the likelihood of an infection occurring and the five stages of an infection. The webinar highlights the difference between infection and disease. A midterm exam review is conducted at the end of the webinar, and students will participate in poll questions.

Module 3 Assignments.

Assignment 1. Webinar Assessment

Based on the webinar content, answer the following by Sunday, 11:59 pm CST, with a minimum of 200 words:

Webinar Question (WQ) 1 – *(1) List in order the chain of infection and (2) give a brief description of each.*

Assignment 2. Discussion Questions.

Answer the Discussion Questions by Thursday, 11:59 pm CST, and reply to two posts by Sunday, 11:59 pm CST. Each response must contain substantive information, consist of a minimum of 150 words, and be written in the student's own terms and understanding.

Discussion Question (DQ) 1 – *(1) According to the CDC, what are the three things required for an infection to occur? (2) Give an example of each requirement.*

Assignment 3. Midterm Exam.

Complete the exam by Sunday, 11:59 pm CST. The exam is timed, one attempt is allotted, and it is open notes.

Week 4/Module 4 (Temperature & Disinfecting)

Learning Objective 4. Evaluate multiple healthcare settings and equipment and understand their unique infection control requirements.	
TLO 1	Identify the optimal temperature range for bacterial growth.
TLO 2	Understand the difference between critical, semi-critical, and noncritical equipment and when to disinfect vs. sterilize.
TLO 3	Understand the requirements for individualized department housekeeping and the BMET's role.
TLO 4	Distinguish between sanitizing, disinfecting, sterilization, and proper solution application for medical equipment.

Module 4 Overview. During module 4, students will identify the different categories of disinfecting and sterilizing medical equipment. Students will explore protocols that apply to the BMET's role in reprocessing medical equipment. Module four includes evaluating the environment and identifying the optimal temperature for bacterial growth.

Discussion Questions.

Discussion Question (DQ) 1 – *(1) Explain the different categories determining when equipment must be disinfected or sterilized.*

Discussion Question (DQ) 2 – *(1) Select a common cleaning and disinfectant solution, and (2) describe the recommended application and purpose for each solution.*

Webinar Session (60 Minutes). The module 4 webinar will review the medical equipment reprocessing and factors that determine disinfecting or sanitizing requirements. The webinar highlights different types of bacteria that grow in various optimal temperatures. The webinar will cover the week five writing or PPT presentation requirements.

Assignments.

Assignment 1. Based on the webinar content, answer the following with a minimum of 200 words:

Webinar Question (WQ) 1 – *(1) Select a temperature range, and (2) identify what type of pathogen thrives in that range. (3) Provide an example of where the pathogen can live.*

Webinar Question (WQ) 2 – *(1) What is one aspect that stood out to you during the webinar?*

Assignment 2. Answer the Discussion Questions by Thursday, 11:59 pm CST, and reply to two posts by Sunday, 11:59 pm CST. Each response must contain substantive information, consist of a minimum of 150 words, and be written in the student's own terms and understanding.

Week 5/Module 5 (COVID Updates)

Learning Objective 5. Understand updated COVID data and regulations as they apply to the medical field and the BMET department.	
TLO 1	Identify resources for updated data about COVID-19.
TLO 2	Understand the methods of transmission, treatment, and requirements for COVID in the medical field.
TLO 3	Identify resources to verify approved disinfecting solutions for COVID-19 and approved safety PPE as respirators and hand sanitizer.
TLO 4	Understand the factors that influence research data and safety recommendations.

Module 5 Overview. During module 5, students will explore updated information about COVID-19 and identify new regulations in medical facilities. Students will review the different factors that influence the studies and decisions for preventing the spread of COVID and treatment.

Discussion Questions.

Discussion Question (DQ) 1 – Identify the avenues of infection for COVID-19.

Discussion Question (DQ) 2 – *Select an article pertaining to COVID-19 and describe one aspect you agree with, disagree with, or have learned.*

Webinar Session (60 Minutes). During the Week 5 webinar, students discuss the changes in COVID-19 safety precautions and the relations and regulations for the medical field. The webinar highlights FDA EAU (emergency use authorization) hand sanitizers that are recalled and on the non-approved list. The webinar reviews resources for identifying approved disinfecting solutions and remaining updated with COVID changes.

Assignments.

Assignment 1. Based on the webinar content, answer the following (no minimum word count):

Webinar Question (WQ) 1 – *(1) Use the List N tool to select a disinfectant and (2) summarize the purpose of the solution. (3) Describe the application of the product, including aspects of dwell time, method of covering the surface, the type of recommended surface, etc.*

List N: <https://www.epa.gov/coronavirus/about-list-n-disinfectants-coronavirus-covid-19-0>

Webinar Question (WQ) 2 – *(1) Select a hand sanitizer and use the link below to identify if it is on the FDA non-approved list. (2) Share the information about the hand sanitizer, such as the type (spray, gel, foam) and the percentage of components.*

<https://www.fda.gov/drugs/drug-safety-and-availability/fda-updates-hand-sanitizers-consumers-should-not-use>

Assignment 2. Answer the Discussion Questions by Thursday, 11:59 pm CST, and reply to two posts by Sunday, 11:59 pm CST. Each response must contain substantive information, consist of a minimum of 150 words, and be written in the student's own terms and understanding.

Assignment 3. Writing Assignment/ PPT. Select a topic related to infection control and gather data about the transmission methods and mitigating factors. Select the delivery method between a writing assignment or a PowerPoint presentation to disclose the information and incorporate class knowledge content. The writing assignment requirements are APA format, which consists of a cover page, an abstract, the body, and a reference page. The paper should be 2-4 pages and include 2 in-text references and a minimum of 2 references. The font size is 12, and the font style can be either Calibri or Times New Roman. The cover and reference pages do not count towards the 2–4-page requirement. The PPT consists of 2-4 slides that cover the topic, where it is occurring, what the environment is, what transmission methods are, and what are preventative measures for infection control. The PPT slides must include 2 in-text references and a minimum of 2 references.

Week 6/Module 6 (Rights, Responsibility, & Safety)

Learning Objective 6. Identify medical ethics, the responsibilities, and the rights of a BMET. Develop environmental awareness for the safety of medical equipment and infection control.	
TLO 1	Identify the professional roles and responsibilities of a BMET for personnel and facility safety.
TLO 2	Evaluate professional ethics and ethical responsibilities within the BMET scope.
TLO 3	Understand employee rights and access resources for updated regulations.
TLO 4	Understand the electrical safety precautions related to a BMETs responsibility and identify safety requirements in the medical field.

Module 6 Overview. During module 6, students will identify ethical responsibilities and the professional role of a BMET. Students will identify safety protocols in the BMET department and understand employee rights.

Discussion Questions.

Discussion Question (DQ) 1 – *Select a safety regulation for the BMET department and summarize the standards.*

Discussion Question (DQ) 2 – *Identify where to learn the possible protocols for BMETs to retrieve, receive, and deliver medical equipment.*

Webinar Session (60 Minutes). During Week 6 webinar, students will review and consider different ethical responsibilities related to a biomedical equipment technician. The webinar will cover various employee rights and identify resources to access updated information. The webinar will discuss electrical safety and other safety precautions in the medical industry. Students will participate in poll questions as a review for the final exam.

Assignments.

Assignment 1. Based on the webinar content, answer the following with a minimum of 200 words:

Webinar Question (WQ) 1 – *(1) What are some ethical responsibilities of a biomedical technician? (2) Give a brief explanation of employee rights.*

Webinar Question (WQ) 2 – *What is one aspect that stood out to you during the webinar?*

Assignment 2. Answer the Discussion Questions by Thursday, 11:59 pm CST, and reply to two posts by Sunday, 11:59 pm CST. Each response must contain substantive information, consist of a minimum of 150 words, and be written in the student's own terms and understanding.

Assignment 3. Complete the final exam.

Note: Please remember to complete the end of course survey prior to the end of the last day of class.

Course Grade Distribution

Discussion Board Requirements	30%
Weekly Webinars and Assignments	25%
Writing Assignment/PPT	10%
Quizzes	15%
Exams	20%

Discussion Board Grading Criteria (30% of overall grade)

Students are required to respond to all weekly discussion board topics and instructor-directed prompts. Responses must be substantive and meet the minimum word count requirement. Additionally, students are required to engage with peers by responding to no fewer than two peer-to-peer responses per week. The following rubric is used as a guide by instructors to evaluate and grade student responses to discussion questions and peer-to-peer engagement:

	Beginning 0-25 Points	Developing 25-50 Points	Accomplished 50-75 Points	Exemplary 75 to 100 Points
Weekly Discussion Question Responses (Minimum of two 200-word responses per week).	Contributes fewer than the required 2 Discussion Question (DQ) responses.	Contributes 2 Discussion Question (DQ) responses but one or both fail to meet minimum word-count requirements for the DQ.	Contributes by providing 2 Discussion Question (DQ) responses and meets the minimum word count requirements for the DQ.	Exceeds required DQ word count requirements and/or provides an exemplary response to a DQ.
Weekly Engagement with peers (Minimum of two 200-word responses to peers each week).	Contributes fewer than the required peer-to-peer responses in the discussion forum.	Contributes 2 peer-to-peer responses in the discussion forum but fails to meet minimum word-count requirements and lacks substance.	Contributes by providing 2 peer-to-peer responses and meets the minimum word count requirement for the peer-to-peer response	Exceeds required peer-to-peer response requirements by meeting the minimum word count requirement and providing substantive responses to peers.
Quality and Content of DQ responses and peer-to-peer responses in the Discussion Forum.	Postings in the discussion forum are not relevant to the assigned topic, are inaccurate, or misrepresented.	Postings in the discussion forum address peripheral topics, are generally accurate, but may contain factual omissions and/or errors.	Postings are generally substantive; however, responses rely too heavily on opinion than fact. Postings meet word count requirements but lack scholarly tone or appropriate references.	Discussion Question and Peer-to-Peer postings consistently contribute to the discussion, contain substantive comments backed by relevant references and encourage open dialogue and additional discussion in the class.

Weekly Live Webinars and Webinar Assignments (25% of overall grade)

Mandatory instructor-led webinars will be conducted at least once per week (60 Minutes). Webinars are not optional; however, we understand that from time-to-time students may not be able to attend in person. If you cannot attend a live session, the webinars will be posted in CANVAS for review. Instructors will assign weekly assignments associated with the live webinars.

Writing Assignment/PPT (10%)

Students will be assigned homework on a weekly basis. Homework may consist of a wide variety of deliverables. Homework may include a wide array of requirements, ranging from worksheets, written

assignments, research projects, PowerPoint presentations, and a host of other activities. In all cases, instructors will endeavor to ensure that students possess a clear understanding of the requirements and expectations.

Quizzes (15%)

Quizzes are assigned in weeks one and two. The quiz format includes multiple choice, true or false questions, diagrams, and matching.

Exams (20%)

The course includes a midterm exam in week three and a final exam in week six. The exam format includes multiple choice, true or false questions, diagrams, and matching. An exam review will be conducted during the live webinar on weeks three and six.

Grading System for the College of Biomedical Equipment Technology

A	90-100	4.0	F	59 & Below	0.0
B	80-89	3.0	W	Withdrawal	N/A
C	70-79	2.0	I	Incomplete	N/A
D	60-69	1.0	T	Transfer	N/A

To receive an incomplete "I", the student must petition the instructor for an extension to complete the required coursework. The student must be able to pass the course with the completed work and garner a grade of 70 or better. Incomplete grades that are not completed within 7 business days after the beginning of the next session will be converted to the existing grade earned in the course and will affect the student's GPA accordingly. CBET reserves the right to extend the time needed to fulfill the incomplete.

An "I" does not count towards the Grade Point Average (GPA) until a grade is assigned. A "W" is given when a student is dropped from the roster during the course and does not replace the previous grade(s). Grades of "W" and "F" are recorded in the academic transcript and reflected in the GPA. When a course is repeated after failure or withdrawal, the later grade will replace the first grade in calculating the CGPA. The clock hours of the course repetition are counted toward the maximum timeframe. CBET shall record a grade of "incomplete" for a student who withdraws but is not entitled to a refund if the student requests the grade at the time the student withdraws, and the student withdraws for an appropriate reason unrelated to the student's academic status.

A student must repeat a course in which a grade of "F" was received. A student can repeat each course once, however, once they reach 1.5 times the length of time required for graduation, they will be dropped from the program. If a student fails any course a second time, he/she will be dropped from the program. A failed course will be rescheduled for the earliest possible module at the discretion of the Director of Education. Students will be charged to retake the course.

Additional Resources and Points of Contact

Students requiring additional administrative support are encouraged to contact the Colleges Student Advocate, Mrs. Terri Gomez, at 210.233.1102 or via e-mail at tgomez@cbet.edu

For a complete list of administrative policies and regulations refer to the CBET Catalog at <https://cbet.edu/course-catalog>

NOTE: THE INSTRUCTOR RESERVES THE RIGHT TO MODIFY THIS SYLLABUS and COURSE OUTLINE