



## COURSE OUTLINE

<b>Course Number</b> <b>FUN 247</b>	<b>Course Title</b> <b>Principles of Embalming I</b>	<b>Credits</b> <b>3</b>
<b>Hours:</b> <b>Lecture/Lab/Other</b> 3/0/0	<b>Co- or Pre-requisite</b> <b>FUN 295 or FUN 251</b> Students must be enrolled in the Funeral Service Education curriculum.	<b>Implementation Semester &amp; Year</b> <b>Spring 2023</b>

**Catalog description:** Focus is on the purpose of embalming and a review of historical background. Ethical and sanitary considerations in the handling of human remains are stressed. Signs and tests of death, postmortem changes in the body, and the basic procedures, instruments and equipment employed in embalming are introduced.

**General Education Category:** **Course coordinator:** Michael Daley (609) 570-3472  
**Not GenEd**

The Funeral Service program at Mercer County Community College is accredited by the **American Board of Funeral Service Education (ABFSE)**  
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### **Required texts & Other materials:**

**TITLE:** **EMBALMING: HISTORY, THEORY AND PRACTICE**  
**AUTHOR:** **ROBERT G. MAYER**  
**PUBLISHER:** **MCGRAW HILL**  
**EDITION:** Sixth Edition: 9781260010077 (March 2022)

### **Course Student Learning Outcomes (SLOs)**

The student will be able to:

- 1) Analyze the advent and practice of embalming during the Egyptian, Anatomists and Modern periods (ILG #1 #3, #7, #8, #9)
- 2) Critique the legal obligations, social and performance standards that form the foundation of the funeral service profession (ILG # 9; PLO # 2)
- 3) Examine the basic objectives and classifications of embalming treatments (ILG #1, #9)
- 4) Appraise protocols to minimize or eliminate biohazards for the embalmer and the environment (ILG # 3, 9; PLOs #2, 3)

- 5) Synthesize antemortem and postmortem changes with appropriate embalming treatments (ILG # 3)
- 6) Analyze types and signs of death and explain tests that may be employed to prove that death has occurred (ILG # 3; PLO # 4)
- 7) Synthesize embalming analysis with appropriate vessel selection, injection pressure and rate of flow
- 8) appraise initial treatment of the body through primary disinfection, positioning, shaving and setting/posing features (ILG # 3; PLO #5)
- 9) critique various methods of vascular injection and correlate them with appropriate applications (ILG' # 3, PLO #5)
- 10) Explain the purpose of drainage and various methods and instruments that can be used to enhance it (ILG's # 3, 9), (PLOs # 2, 5)
- 11) synthesize the concepts of fluid dilution, distribution, and diffusion with embalming efficacy (ILG #3; PLO # 5)
- 12) articulate the purpose of the UAGA and embalming considerations for organ and tissue donation (ILGs # 3, 9; PLOs 2, 3, 4, 5, 9)
- 13) Examine types of autopsies with respect to pre-embalming, embalming and post-embalming implications (ILGs # 3, 9; PLOs 3, 4, 5, 9)
- 14) Critique embalming implications for the preparation of the stillborn, infant and child (ILGs # 3, 9; PLO # 4, 5, 6, 7, 9)
- 15) Critique appropriate protocols when preparing remains for identification or viewing, with or without embalming (ILGs # 1, 3, 8, 9; PLOs #3, 4, 5, 9)
- 16) Evaluate specific considerations when shipping or receiving remains (ILGs # 3, 9; PLOs # 3, 4, 9)
- 17) Articulate appropriate embalming protocols for preparation of obese bodies, those necessitated by disaster and removal of medical devices (ILGs # 1, 3; PLO # 4, 9)

### **Course-specific Institutional Learning Goals (ILG):**

**Institutional Learning Goal 1. Written and Oral Communication in English.** Students will communicate effectively in both speech and writing.

**Institutional Learning Goal 3. Science.** Students will use the scientific method of inquiry, through the acquisition of scientific knowledge.

**Institutional Learning Goal 7. History.** Students will understand historical events and movements in World, Western, non-Western, or American societies and assess their subsequent significance.

**Institutional Learning Goal 8. Diversity and Global Perspective: Students** will understand the importance of a global perspective and culturally diverse peoples

**Institutional Learning Goal 9. Ethical Reasoning and Action.** Students will understand ethical frameworks, issues, and situations.

### **ABFSE Program Learning Outcomes for Embalming I (PLO):**

**Upon successful completion of the course, the student should be able to:**

- 1. Explain the importance of funeral service professionals in developing relationships with the families and communities they serve.
- 2. Identify standards of ethical conduct in funeral service practice
- 3. Interpret how federal, state, and local laws apply to funeral service in order to ensure compliance.
- 4. Apply principles of public health and safety in the handling and preparation of human remains.

- 5. Demonstrate technical skills in embalming and restorative art that are necessary for the preparation and handling of human remains.
- 6. Demonstrate skills required for conducting arrangement conferences, visitations, services, and ceremonies.
- 7. Describe methods to address the grief-related needs of the bereaved.
- 8. Explain management skills associated with operating a funeral establishment.
- 9. Describe the requirements and procedures for burial, cremation, and other accepted forms of final disposition of human remains.
- 10. Demonstrate verbal and written communication skills and research skills needed for funeral service practice.

**Units of study in detail – Unit Student Learning Outcomes:**

**Unit #1 – Historical Practice of Embalming (SLO #1, 3, 15)**

Topics: History of Embalming

Egyptian Period

Anatomists Period

Modern Period

**Learning Objectives:** Having completed the online module the student will be able to:

1. Synthesize Egyptian culture with their embalming practices.
2. Analyze the contributions of Leonardo da Vinci during the Anatomists Period.
3. Describe injection techniques of the 15th – 17th centuries and the contributions of Fredrick R. Ruysch, Dr. William Hunter and Jean Nicholas Gannal.
4. Articulate the influence of the Civil War on embalming and the contributions of Dr. Thomas Holmes.

**Unit #2 –Legal obligations, social and performance standards (SLO #2, 3, 5, 8, 10)**

Topics: Introduction to Embalming

Regulations

Embalmer Preparedness

Social and Psychological Performance Standards

Universal Convictions

The Ethical Performance Standard

Notification of Death to Public Officials

Objectives of Embalming

Classifications of Embalming

Accomplishments of Embalming

**Learning Objectives:** Having completed the assigned readings, attended class, and participated in class discussion, the student will be able to:

1. Articulate the influence of Federal, State, or local government laws and regulations on embalmers.
2. Examine the basic criteria that comprise the ethical foundation of the funeral service profession.
3. Synthesize the elements of the Ethical Performance Standard with respect to the multi-faceted responsibilities of the embalmer.
4. Examine the objectives of embalming: sanitation/disinfection, preservation, and restoration.
5. Compare and contrast vascular, cavity, hypodermic and surface embalming.

**Unit #3 – Basic objectives and classifications of embalming treatments (SLO #3, 4, 5, 7, 11)**

Topics: Legal and Regulatory Considerations for the Embalmer  
Authorization to Embalm  
Identification Procedures  
U.S. Department of Labor OSHA Rules

**Learning Objectives:** Having completed the online module, the student will be able to:

1. Examine the influence of The Funeral Rule on the actions and protocols of the embalmer.
2. Synthesize the requirements of the Hazard Communication Standard, Formaldehyde Standard and Bloodborne Pathogen Standard with specific protocols of the embalmer.

**Unit #4** – Protocols to minimize or eliminate biohazards for the embalmer & environment (SLO#2, 3, 8, 9, 15)

Topics: Sanitation  
Protection for the Embalmer  
Environmental Protection  
Technical Orientation: Equipment and Instruments Supplies

**Learning Objectives:** Having completed the assigned readings, attended class, and participated in class discussion, the student will be able to:

1. Describe the purpose of post death sanitation and appropriate measures the embalmer must take for their protection.
2. Articulate specific embalmer protocols for environmental protection.
3. Discuss equipment and instruments that embalmers use with respect to their purpose and appropriate applications.
4. Appraise the supplies necessitated by the embalming process with their appropriate applications.

**Unit #5** – Antemortem and postmortem changes with appropriate embalming treatments (SLO# 3, 4, 5)

Topics: Antemortem and Postmortem Changes  
Agonal and Thermal Changes  
Circulatory and Moisture Changes  
Translocation of Microorganisms  
Postmortem Physical and Chemical Changes

**Learning Objectives:** Having completed the assigned readings, attended class, and participated in class discussions, the student will be able to:

1. Synthesize the categories of antemortem changes with the challenges that they create for the embalmer.
2. Differentiate postmortem physical changes and articulate appropriate embalming protocols.
3. Synthesize postmortem chemical changes with appropriate embalming treatments.
4. Analyze the several types of decomposition and their influence on embalming protocols.
5. Differentiate the signs and products of decomposition and determine appropriate embalming interventions.
6. Distinguish intrinsic and extrinsic factors that influence decomposition.
7. Delineate the order of putrefaction of the body's organs.

**Unit #6** – Tests that may be employed to prove that death has occurred (SLO# 4, 6)

Topics: Death  
Terms Associated with Death  
Types of Death  
Signs of Death

## Tests for Death

**Learning Objectives:** Having completed the online module, the student will be able to:

1. Distinguish the terms moribund, apparent death, human remains and thanatology.
2. Compare and contrast death rattle, death struggle and cadaveric spasm.
3. Articulate the processes of somatic death and distinguish antemortem and postmortem cellular death.
4. Discuss signs of death, expert, and inexpert tests for death.

**Unit #7** – Appropriate vessel selection, injection pressure and rate of flow (SLO #3, 4, 9, 10, 11)

Topics: Embalming Analysis:

Pre-embalming, Embalming and Post-embalming Considerations

Receiving Embalmed Remains

Intrinsic and Extrinsic Factors

Selection of Vessels:

Primary Injection and Drainage Sites

Criteria for Artery and Vein Selection

Anatomical Guides, Limits, and Incisions

Arteries of the Head and Neck

Arteries of the Trunk

Arteries of the Upper and Lower Extremities

Procedure for Raising Vessels

**Learning Objectives:** Having completed the online module, the student will be able to:

1. Articulate the importance of embalming analysis.
2. Synthesize pre-embalming, embalming and post-embalming considerations with appropriate treatments.
3. Examine specific treatments that may be necessary when receiving embalmed remains.
4. Distinguish intrinsic and extrinsic factors that can influence embalming protocols for maximum distribution, diffusion, and preservation of tissue.
5. Articulate primary injection and drainage sites and criteria for artery and vein selection.
6. Distinguish anatomical guides, limits, and appropriate incisions for arteries of the head, neck, trunk, and extremities.
7. Discuss appropriate techniques and procedures for raising vessels.

**Unit #8:** - Treatment of the body (SLO #3, 4, 5, 8, 15)

Topics: Initial Treatment of the Body:

Primary Disinfection

Medical Dressings and Devices

Relieving/Reducing Rigor

Positioning the Body

Shaving Setting/Posing the Features

**Learning Objectives:** Having completed the assigned readings, attended class, and participated in class discussions, the student will be able to:

1. Articulate measures that the embalmer should utilize when lifting and moving.
2. Explore the treatments involved in the process of primary disinfection.
3. Describe appropriate measures for positioning the body and various challenges that may occur.
4. Articulate procedures used for shaving and treatment of razor burn.

5. Synthesize the various methods used for setting/posing the features with their appropriate applications.

**Unit #9** – Appropriate applications (SLO #3, 9, 10, 11)

Topics: Injection Pressure and Rate of Flow

Embalming Machine Pressures

Factors Affecting Injection

Pressure and Rate of Flow

Ideal Injection Pressure and Rate of Flow

**Learning Objectives:** Having completed the online module the student will be able to:

1. Differentiate “potential pressure,” “actual pressure” and “differential pressure.”
2. Articulate intravascular and extravascular conditions that influence appropriate injection pressure and rate of flow.
3. Explain the concepts of “ideal injection pressure” and “ideal rate of flow”.

**Unit #10** – Methods and instruments (SLO #3, 4, 5, 9, 10, 11)

Topics: Vascular Injection

Basic Injection Procedures

Injection Apparatus

**Learning Objectives:** Having completed the assigned readings, attended class, and participated in class discussion, the student will be able to:

1. Examine the basic injection procedures of “one point”, “split”, “multi-point”, “restricted cervical” and “sectional” and “sectional” and “sectional” and “sectional” and synthesize their appropriate application.
2. Compare and contrast historical and contemporary injection apparatus.

**Unit #11** – Appropriate Applications & Techniques (SLO # 3, 5, 9, 10, 11)

Topics: Drainage:

Displacement

Contents

Volume, Purpose, and “Center” of Drainage

Drainage Instruments and Methods

Techniques for Improving Drainage

**Learning Objectives:** Having completed the online module, the student will be able to:

1. Explain the concept of “displacement” as it occurs during embalming.
2. Articulate the contents, volume, and purpose of drainage.
3. Synthesize the alternate, intermittent and concurrent/continuous drainage methods with their appropriate applications.
4. Examine various techniques used to improve drainage and articulate appropriate applications.

**Unit #12** – Embalming considerations (SLO # 3, 5, 7, 9, 10, 11, 12, 13)

Topics: Organ and Tissue Donors

UAGA

Organ, Tissue, Skin and Bone Donation

**Learning Objectives:** Having completed the online module, the student will be able to:

1. Articulate the regulations associated with the UAGA.

2. Synthesize organ, skin, tissue, and bone donation with associated embalming implications.
3. Examine the two treatment methods that can be used for bone donors.

**Unit #13** – Embalming efficacy (SLO # 9, 10, 11)

Topics: Fluid Dilution, Distribution and Diffusion

Primary and Secondary Dilution S

Signs of Fluid Distribution

Osmosis: Hypotonic, Isotonic and Hypertonic Solution

Pressure Filtration

Dialysis

Gravity Filtration

Signs of Fluid Diffusion

**Learning Objectives:** Having completed the assigned readings, attended class, and participated in class discussion, the student will be able to:

1. Compare and contrast the terms dilution, distribution, and diffusion.
2. Explain the difference between primary and secondary dilution and the influence of “weak” and “too strong” embalming solutions on embalming efficacy.
3. Articulate the “center of arterial distribution” and the influence of the “arch of the aorta.”
4. Examine the signs of fluid distribution and how the embalmer uses them.
5. Compare and contrast osmosis, pressure filtration and dialysis.
6. Articulate hypotonic, isotonic, and hypertonic solution as it relates to the movement of embalming solution and explains the concept of osmotic pressure.
7. Explain the process of pressure filtration and the influence of penetrating agents.
8. Examine the process of dialysis and its influence on the diffusion of crystalloids and colloids.
9. Synthesize the concept of gravity filtration with the movement of embalming solution.
10. Differentiate various signs of fluid diffusion and their reliability for the embalmer.

**Unit #14** – Examine types of autopsies (SLO #3, 5, 8, 9, 10, 11, 13)

Topics: Autopsy/Postmortem Examination

General Embalming Considerations

Regional Autopsies: Cranial, Thoracic, Abdominal, Spinal

Exploratory and Partial Autopsy

**Learning Objectives:** Having completed the assigned readings, attended class, and participated in class discussions the student will be able to:

1. Articulate the embalming considerations for the autopsied body.
2. Synthesize cranial, thoracic, abdominal, and spinal autopsies with specific pre-embalming, embalming and post-embalming considerations.
3. Compare and contrast exploratory and partial autopsies.

**Unit #15** – Special cases (SLO #3, 5, 8, 9, 10, 11, 14, 15)

Topics: Preparation of the Stillborn, Infant and Child

General Considerations

General Embalming Considerations

Documentation and Embalming Analysis

Positioning and Setting Features

Vessel Selection (Un-autopsied and Autopsied)

Cavity/Viscera Treatment

## Supplemental Treatments

**Learning Objectives:** Having completed the online module, the student will be able to:

1. Synthesize general considerations of the infant and toddler with specific
2. Articulate proper positioning of the infant prior to embalming and specific considerations when setting features.
3. Critique vessel selection for the un-autopsied and autopsied infant and supplemental treatments to ensure embalming efficacy.

**Unit #16** – Domestic & international cases (SLO #3, 5, 8, 9, 10, 11, 15, 16)

Topics: Preparation for Identification or Viewing Without Embalming

Identification Procedure for Decomposed/Traumatized Body

Preparation for Delayed Viewing

Preparation for Shipping of Human Remains

Preparation for Viewing of the “Shipped-In” Body

**Learning Objectives:** Having completed the assigned readings, attended class, and participated in class discussion, the student will be able to:

1. Articulate appropriate documentation and procedures necessary when preparing remains for identification or viewing with or without embalming.
2. Critique appropriate protocols when preparing decomposed or traumatized remains for identification.
3. Analyze the embalming, post-embalming and storage considerations when preparing remains for delayed viewing.
4. Examine pre-embalming, embalming and post-embalming considerations when preparing remains for domestic or international shipping using a shipping case or casket.
5. Articulate the necessary protocol when preparing the “shipped-in” body for viewing.

**Unit #17** – Morbidity & miscellaneous procedures (SLO #3, 5, 8, 9, 10, 11, 15, 17)

Topics: Preparation of Obese Bodies

Embalming and Non-Embalming Considerations for Disaster Victims

Medical Devices

**Learning Objectives:** Having completed the assigned readings, attended class, and participated in class discussion, the student will be able to:

1. Synthesize preparation of the obese body with appropriate protocols for positioning, solution strength and quantity, arterial embalming procedures, hypodermic injection, and cavity treatment.
2. Articulate embalming and non-embalming considerations in the treatment of disaster victims.
3. Examine appropriate protocols for the documentation and removal of medical devices.

### **Evaluation of student learning:**

Student learning will be assessed using examinations, tests, quizzes, and case studies. Multiple-choice, matching, case studies, short essays, and fill-in-the-blank questions will be given. The final examination will be multiple-choice and will be inclusive. Readings quizzes will be given, and the lowest quiz grade will be dropped. Case studies will be completed in groups as well as individually on tests.

Students will work in groups and then present assigned case studies to the class. The instructor will create case studies that challenge each group to research specific pathologies. The student group will identify



specific pre-embalming, embalming and post-embalming treatments to meet the embalming challenges that may be present. Each group will present its case study to the class and class discussion will include any additional treatments or concerns that may be considered.

The final grade will be determined as follows:

Quizzes 5%

Tests: 25%

Case Study: 5%

Midterm Exam: 30%

Final Exam: 35%