



American Meat Science Association

Meat Evaluation Certification Study Guide

CERTIFICATION OVERVIEW

The American Meat Science Association (AMSA) Meat Evaluation Certification demonstrates individuals can define major factors utilized in carcass grading and evaluation. The certification exam tests for a thorough understanding of meat carcass quality grading, meat handling and food safety as well as the slaughter and fabrication process.

EXAM OVERVIEW

The AMSA Meat Evaluation Certification is hosted on the iCEV testing platform. The certification exam is a 100-question, randomized assessment. Exam questions are in the format of multiple choice, sort order, diagramming, matching, labeling and other question types meant to fully evaluate an individual's competency of the industry standards. The certification exam should be proctored within a controlled environment. The proctor of the exam must review and verify all exam procedures and provide electronic documentation through the exam platform.

More information about the certification exam and testing platform, including optional preparation materials offered by iCEV, can be found at <https://www.icevonline.com/meateval>

ABOUT THE AMERICAN MEAT SCIENCE ASSOCIATION

The American Meat Science Association is a broad-reaching organization of individuals that discovers, develops and disseminates its collective meat science knowledge to provide leadership, education and professional development. Their passion is to help meat science professionals achieve previously unimaginable levels of performance and reach even higher goals. They accomplish this by fostering a learning community of meat scientists, industry partners, outside thought leaders and other stakeholders who embrace this vision. Its members conduct basic and applied research and education programs in muscle growth and development, meat quality, food safety, processing technology and consumer and marketing issues relevant to the international meat industry. Learn more at <https://meatscience.org/events-education/meat-industry-certifications>

INDUSTRY STANDARDS

The certification exam assesses knowledge and skills from the following weighted industry standards set by AMSA:



MEAT SCIENCE PRINCIPLES- 15%

- Animal Care & Handling Procedures
- Meat Nutrition
- Meat Storage & Handling
- Meat Cookery Techniques
- Processed Meats
- Food Industry Safety



ANIMAL HARVESTING PROCEDURES- 5%

- Inspection
- Regulation & Policies
- Animal Harvest Process
- Animal Byproducts



CARCASS & CUTS EVALUATION- 20%

- Beef Evaluation
- Pork Evaluation
- Lamb Evaluation



USDA BEEF GRADING- 30%

- USDA Quality Grading
- USDA Yield Grading



RETAIL CUT FABRICATION & IDENTIFICATION- 30%

- Beef Retail Cuts
- Pork Retail Cuts
- Lamb Retail Cuts
- Variety Meats
- Processed Meats

Industry Standard Overview

To pass the AMSA Meat Evaluation Certification exam, certification candidates must have adequate knowledge of the industry standards. The following outlines an in-depth overview of the industry standards and sub-standards:

Industry Standard: Meat Science Principles



- HACCP
- Minimize Foodborne Bacteria
- Cooking Methods
- Meat in Diet
 - Protein
 - Fat
 - Cholesterol
 - B Vitamins
 - Essential Minerals
 - Ounce for Ounce
- Sub-Primal Cuts
- Retail Cuts
- Retail Packaging
- Labeling

Industry Standard: Animal Harvesting Procedures



- Slaughter Process Overview
 - Holding Pens
 - Stunning
 - Exsanguination
 - Electrical Stimulators
 - Hide Removal
 - Scalding
 - Dehairing
 - Singeing
 - Removal of Head
 - Evisceration
 - Abdominal Viscera
 - Thoracic Viscera
 - Splitting of Carcass
 - Hot Box
 - Spray Chilling
 - Inedible Rendering

- Important Legislation
 - Meat Inspection Act, 1906
 - Pure Food and Drug Act, 1906
 - Packers and Stockyards Act, 1921
 - Humane Slaughter Act, 1958
 - Wholesome Meat Act, 1967
 - Humane Methods of Slaughter Act, 1978

Industry Standard: Carcass & Cuts Evaluation



- Beef Carcass & Cuts Judging
- Pork Carcass & Cuts Judging
- Lamb Carcass & Cuts Judging

Industry Standard: USDA Beef Grading



- Beef Grading Quality Grades
- Skeletal Maturity
- Lean Maturity
- Rules for Determining Overall Carcass Maturity
- Marbling Score
- Beef Yield Grades
- Preliminary Yield Grade
- Kidney, Pelvic & Heart Fat
- Hot Carcass Weight
- Ribeye Area

Industry Standard: Retail Cut Fabrication & Identification



- Beef Retail Cuts Chart and Examples
- Pork Retail Cuts Chart and Examples
- Lamb Retail Cuts Chart and Examples

Optional Preparation Materials Overview

The preparation materials offered by iCEV for the AMSA Meat Evaluation Certification was specifically created to prepare candidates for the certification exam. While it is not required to complete the preparatory materials before accessing the certification exam, AMSA recommends certification candidates complete some form of training. The following outlines the lessons scope and objectives:

Lesson 1: Background of the American Meat Science Association

1. To introduce students to the American Meat Science Association.
2. To state the purpose of the American Meat Science Association.

Lesson 2: Harvesting of Livestock

1. To describe the livestock harvesting process.
2. To explain federal and state meat inspection standards.
3. To identify retail and wholesale cuts of meat correlated to major muscle groups and meat byproducts.

Lesson 3: EXCEL Beef Plant: Fabrication

1. To understand grading, tagging, and sorting procedures.
2. To analyze fabrication techniques.
3. To become familiar with storage facilities.
4. To identify shipping and receiving procedures.
5. To understand quality assurance.

Lesson 4: EXCEL Pork Plant: Fabrication

1. To learn the steps involved in fabricating hog carcasses.
2. To learn about lean recovery, ground pork and lean trim products.
3. To understand how by-products are rendered into edible and in-edible by-products.
4. To be aware of the steps taken to ensure products are produced in a safe and sanitary environment.

Lesson 5: Meat Science & Food Safety

1. To explore legislation and history in relation to the meats industry.
2. To study animal care and handling techniques.
3. To identify the nutritional content and benefits of meat.
4. To consider consumer options when purchasing meat.
5. To describe meat storage and handling practices.
6. To understand meat cooking methods.
7. To study meat additives and processed meats.
8. To analyze food safety practices and causes of foodborne illnesses.

Lesson 6: Meat Evaluation: Beef Quality Grading

1. To understand why quality grades are important.
2. To examine maturity of beef carcasses.
3. To examine marbling of beef carcasses.
4. To look at the factors used to calculate final quality grades.

Lesson 7: Meat Evaluation: Beef Yield Grading

1. To understand why yield grades are important
2. To look at the factors used to calculate final yield grades.

Lesson 8: Meat Evaluation: Beef Carcasses

1. To evaluate quality factors related to beef carcasses.
2. To evaluate cutability factors related to beef carcasses.
3. To decide placing for classes of beef carcasses.

Lesson 9: Meat Evaluation: Beef Ribs

1. To evaluate quality factors related to beef ribs.
2. To evaluate cutability factors related to beef ribs.
3. To decide placing classes of beef ribs.

Lesson 10: Meat Evaluation: Beef Full Loins

1. To evaluate quality factors related to beef full loins.
2. To evaluate cutability factors related to beef full loins.
3. To decide placing classes of beef full loins.

Lesson 11: Meat Evaluation: Beef Short Loins

1. To evaluate quality factors related to beef short loins.
2. To evaluate cutability factors related to beef short loins.
3. To decide placing classes of beef short loins.

Lesson 12: Meat Evaluation: Beef Rounds

1. To evaluate quality factors related to beef rounds.
2. To evaluate cutability factors related to beef rounds.
3. To decide placing classes of beef rounds.

Lesson 13: Meat Evaluation: Pork Carcasses

1. To evaluate quality factors related to pork carcasses.
2. To evaluate cutability factors related to pork carcasses.
3. To decide placing classes of pork carcasses.

Lesson 14: Meat Evaluation: Pork Hams

1. To evaluate quality factors related to pork hams.
2. To evaluate cutability factors related to pork hams.
3. To decide placing classes of pork hams.

Lesson 15: Meat Evaluation: Pork Loins

1. To evaluate quality factors related to pork loins.
2. To evaluate cutability factors related to pork loins.
3. To decide placing classes of pork loins.

Lesson 16: Meat Evaluation: Lamb Carcasses

1. To evaluate quality factors related to lamb carcasses.
2. To evaluate cutability factors related to lamb carcasses.
3. To decide placing classes of lamb carcasses.

Lesson 17: Retail Cut ID

1. To identify retail cuts of beef.
2. To identify retail cuts of pork.
3. To identify retail cuts of lamb.
4. To identify variety meats.

Lesson 18: Meat Evaluation: Retail Cut Placing

1. To evaluate quality factors related to retail cut placing.
2. To evaluate cutability factors related to retail cut placing.
3. To decide placing classes of retail cut placing.

Lesson 19: Beef Carcasses- 15 (WITH Officials)

Lesson 20: Beef Ribs- 12 (WITH Officials)

Lesson 21: Beef Short Loins- 2 (WITH Officials)

Lesson 22: Pork Carcasses- 22 (WITH Officials)

Lesson 23: Pork Loins- 5 (WITH Officials)

Lesson 24: Hams- 9 (WITH Officials)

Lesson 25: Lamb Carcasses- 24 (WITH Officials)

Lesson 26: Retail Cut Placing- 14 (WITH Officials)