



**Joint Targeting School  
Collateral Damage Estimation (CDE) Qualification Course**

**INTRODUCTION**

Joint Staff J-7 is the lead agent for this joint training course syllabus, which is authorized for issue by the Joint Targeting School (JTS). This syllabus is directive in nature and prescribes the overall training strategy and amount of instruction required for a student with the entry prerequisites to attain course goals and graduate. Units implementing this syllabus will ensure each student graduated possesses the knowledge, skills and proficiencies set forth in the course training standards. Within the syllabus and other directive constraints, the amount and level of training devoted to mission elements, events, subjects or phases should be adjusted as required to meet individual student needs. Instructions governing publication and revision of this syllabus are contained in *CJCSM 3500.03E, Joint Training Manual for the Armed Forces of the United States*. This syllabus does not take precedence over applicable governing directives.

CJCSI 3160.01(series) outlines the JTS responsibility to maintain and make available to Service and CCMD CDE programs a current set of CDE training courseware and a master question file. This syllabus and associated courseware fulfills that responsibility. Utilizing the provided courseware, schoolhouses achieve standardization across CDE programs and JTS ensures consistent application of the Collateral Damage Estimation Methodology (CDM). The framework herein established facilitates JTS's additional responsibility for course audit and accreditation of Service and CCMD CDE qualification programs.

The following CDE schoolhouses utilize the outlined courseware and follow the course flow as presented in this syllabus. The only modification these schoolhouses make to the provided courseware and course flow (chapters 3 through 7) pertains to each lesson's ID and the welcome brief. These authorized changes enable schoolhouses to create unique lesson identifiers facilitating courseware integration into broader schoolhouse missions. Individual schoolhouses modify chapters 1 and 2 of this courseware syllabus as required to correctly present unique schoolhouse course descriptions and administration.

Joint: Joint Targeting School – Dam Neck Annex, VA

Army: ADTC-USAFCoE – Fort Sill, OK

Navy: NAWDC - NAS Fallon, NV

Air Force: Directorate of Intelligence, Air Combat Command—Langley, VA/Goodfellow AFB, TX

CENTCOM – MacDill AFB, FL

USINDOPACOM – JITAP, JB Pearl Harbor-Hickam

NATO – NIFC RAF Molesworth, UK

Canada – Canadian Forces Warfare Centre, Kingston, Ontario

France -- Centre National de Ciblage, Creil, France

Australia – Defence School of Intelligence – Air, Adelaide, Australia

Netherlands – Target Support Cell – Volkel Air Base, Netherlands



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CDR, USN

Director, Joint Targeting School

## Chapter 1 Course Description

1. **Title:** Collateral Damage Estimation Qualification Course
2. **Joint Qualified Officer (JQO) Certification Date:** 20 November 2025  
Course earns 1.0 Joint Qualified Officer (JQO) point.
3. **Joint Qualified Officer (JQO) Certification Expiration Date:** 20 November 2028
4. **Course Identifiers**
  - a. **Joint "S" Code:** S366
  - b. **USA CIN:** 303JTS005
  - c. **USAF CIN:** X5OZN14N3 OZ1A
  - d. **USMC CIN:** N46F333
  - e. **USN CIN:** S-3A4905
  - f. **FMS MASL:** P122091
5. **Objective:** Provide CDE qualification training for personnel assigned to a position or billet performing CDE.<sup>1</sup>
6. **Location:** 1905 Regulus Avenue, Virginia Beach, VA 23461-2099.
7. **Duration:** 5 Training Days.
8. **Entry Prerequisites:** Minimum of a SECRET security clearance. Read & become familiar with CJCSI 3160.01(series).
9. **Status Upon Graduation:** Graduates are awarded 1.0 Joint Qualification Officer Points, are qualified as CDE Analysts, and receive Certificate of Completion.
10. **Academic Training**

	<i>hours</i>
a. <b>Course Prerequisite Training</b>	2.0
b. <b>Instruction (lecture)</b>	18.5
c. <b>Practical exercises</b>	12.0
d. <b>Out-of-class reading (study)</b>	4.0
e. <b>Guest Lectures/Facility Tours</b>	0.0
f. <b>Academic evaluation</b>	3.5
 <b>Total Approximate Course Hours</b>	 <b>40.00</b>

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<sup>1</sup> Chairman of the Joint Chiefs of Staff, *CJCSI 3160.01E, No-Strike and Collateral Damage Estimation Methodology* (31 July 2024),A-2.

## Chapter 2 Course Administration

### Section A - Syllabus Management

1. **Syllabus Interpretation:** This syllabus is directive and must be followed as written. When available, JTS will make available guest lecturers to augment course material.
2. **Syllabus Waiver:** All syllabus waivers must be approved by the JTS Director. In all instances, JTS will strive to maintain course content while not extending training past the scheduled training dates.
3. **Syllabus Review:** JTS conducts syllabus reviews on an annual basis or as directed by the JTS Director. Following syllabus review, the JTS Director approves any syllabus modification.
4. **Syllabus Content.**
  - a. **Updates:** Course manager approves all lesson updates prior to course presentation.
  - b. **Modification:** The JTS Director approves all syllabus modifications and lesson additions prior to course inclusion.

### Section B - Training Management

1. **Course Manager Responsibilities:** The JTS Director designates course managers. The course manager is responsible for monitoring the content of the assigned course. Prior to course start, the course manager approves the course schedule and flow of events. CDE Standardization Instructors and Instructors are designated per the Joint CDE Program Standards outlined in CJCSI 3160.01(series).
2. **Instructor Responsibilities.**
  - a. **Lecture:** Instruction will not exceed 60 minutes without a scheduled break.
  - b. **Practical Exercises:** Instructors will be available during practical exercise work. School houses will strive to maintain a student to instructor ratio of no more than 15 to 1 at all times. Students shall complete all practical exercises prior to course examination.
3. **Course Standards:** In order to be qualified as a CDE analyst, students must complete the academic and practical portions of this syllabus, and pass a two-part examination based on the JTS-maintained master question file with a minimum score of 80 percent on both evaluations. Students are expected to attend all blocks of instruction.
4. **Training Capacity:** JTS seat capacity is 30 seats and will not exceed this number. If a student fails to arrive to the course during the first day of in-residence training, JTS will open the seat to the standby list. Student quotas are managed based upon service and combatant command needs. Other CDE school houses will designate their own seat capacity, but should strive to maintain a 15 to 1 student to instructor ratio.
5. **Training Materials:** The following is a list of materials needed to accomplish the CDE course outlined by this syllabus.
  - a. Academic lectures
  - b. Practical exercises
  - c. CDE Course Student Guide

- d. Casualty estimation worksheet
- e. Aimpoint analysis worksheet (CER worksheet table)
- f. CJCSI 3160.01 (series) No-Strike and The Collateral Damage Estimation Methodology
- g. Collateral Effects Radii (CER) Reference Tables
- h. Digital Precision Strike Suite Collateral Damage Estimation (DCIDE) Software with supporting imagery
- i. Daily quizzes
- j. Exam – Part 1
- k. Exam – Part 2

## 6. Unsatisfactory Performance

- a. **Exam Failure:** Students will not be offered a retest on Exam - Part 1 or Part 2. If a student fails either exam, the student is provided instructor remediation and then required to re-take the entire course before re-testing. This is usually accomplished by the student enrolling in a future course.
- b. **Unexcused Absences:** 2 unexcused absences will result in removal from the course.
- c. **Security Violation:** All security violations will be dealt with on an individual basis and may result in removal from the course.
- d. **Dismissal from Course:** In the case of a student's dismissal from the course for not achieving the academic or overall performance standards, the student's commanding officer at his or her present command will be notified through formal correspondence. The student will not receive a certificate of completion and JTS will not award the individual Joint Qualification Officer Points nor count the course completed for the Course Identification Number of the respective services.

### Chapter 3 Lesson Descriptions

<u>Lesson ID</u>	<u>Lesson Name</u>	<u>Duration</u>
JTS 100	<b>CDE Welcome Brief</b>  <i>Purpose:</i> Introduce the CDE qualification course flow, graduation standards, and classroom environment.	1.0
JTS 101	<b>CDM Policy and Responsibilities</b>  <i>Purpose:</i> To provide students information on the CDM policy and guidance, and associated terms. This lesson also covers the responsibilities of all agencies involved in the execution of the CDM.	1.0
JTS 102	<b>The No-Strike Process</b>  <i>Purpose:</i> To provide students an understanding of the No-Strike Process and associated terms.	1.0
JTS 103	<b>Weaponeering Familiarization</b>  <i>Purpose:</i> To provide students a basic understanding of weaponeering principles and how the weaponeering and CDE processes are linked together.	1.5
JTS 104	<b>Measuring and Mitigating Weapons Effects</b>  <i>Purpose:</i> To provide the students information on the elements that make up a CER and the weaponeering and mitigation logic that is utilized in the CDM.	1.0
JTS 105	<b>CDM Overview</b>  <i>Purpose:</i> This lesson provides an overview of the CDM, to include a limited amount of definitions, an introduction to the CDM policy and guidance, limitations and exclusions of the CDM, an introduction to the elements that make up a Collateral Effects Radius (CER), and the general CDE process.	1.5
JTS 106	<b>CDE Level 1 Initial Analysis</b>  <i>Purpose:</i> To provide the students the facts, assumptions, processes, and data requirements to accomplish a CDE Level 1: Initial Analysis and enable them to produce correct CDE Level 1 evaluations. Throughout the lesson, the students are shown several examples of multiple and single aimpoint collateral damage estimations with resolve at CDE Level 1.	1.0
JTS 107	<b>CDE Level 2 General Analysis</b>  <i>Purpose:</i> To provide the students the facts, assumptions, processes, and data requirements to accomplish a CDE Level 2: General Analysis and enable them to produce correct CDE Level 2 evaluations. Throughout the lesson, the students are shown several examples of multiple and single aimpoint collateral damage estimations with resolve at CDE Level 2.	1.0

**JTS 108 CDE Level 3 Weaponering Analysis****1.5**

*Purpose:* To provide the students the facts, assumptions, processes, and data requirements to accomplish a CDE Level 3: Weaponering Analysis and enable them to produce correct CDE Level 3 evaluations. Throughout the lesson, the students are shown several examples of multiple and single aimpoint collateral damage estimations with resolve at CDE Level 3.

**JTS 109 CDE Level 4 Refined Analysis****2.0**

*Purpose:* To provide the students the facts, assumptions, processes, and data requirements to accomplish a CDE Level 4: Refined Analysis and enable them to produce correct CDE Level 4 evaluations. Throughout the lesson, the students are shown several examples of multiple and single aimpoint collateral damage estimations with resolve at CDE Level 4.

**JTS 110 CDE Level 5 Casualty Analysis****3.0**

*Purpose:* To provide the students the facts, assumptions, processes, and data requirements to accomplish a CDE Level 5: Casualty Analysis and enable them to produce correct CDE Level 5 evaluations. Throughout the lesson, the students are shown several examples of multiple and single aimpoint collateral damage estimations with resolve at CDE Level 5. Upon completion of this lesson, the students should be able to accomplish multiple practical exercises on their own, which will prepare them for both parts of the exam at the end of the qualification course.

**JTS 111 Additional Considerations****1.0**

*Purpose:* Describe additional considerations regarding facilities or structures pertaining to the CDM.

**JTS 112 Introduction to CDE Automation****1.0**

*Purpose:* To introduce the students to an accredited automated CDE program so they are familiar with how automated programs are utilized to make operational CDE evaluations. This block of instruction takes place after Exams I and II and is not testable material or a requirement for qualification. This is based on the software limitations of individual schoolhouses.

## Chapter 4 Practical Exercise Descriptions

<u>Exercise ID</u>	<u>Exercise Name</u>	<u>Duration</u>
<b>JTS P11</b>	<b>CDE Practical Exercises AA through AD</b>	<b>1.5</b>
	<i>Purpose:</i> Develop proficiency in CDE analysis for CDE levels 1 through 4.	
<b>JTS P12</b>	<b>CDE Practical Exercises A through J</b>	<b>4.0</b>
	<i>Purpose:</i> Develop proficiency in CDE analysis.	
<b>JTS P13</b>	<b>CDE Practical Exercises K through Q</b>	<b>3.0</b>
	<i>Purpose:</i> Develop proficiency in CDE analysis.	
<b>JTS P14</b>	<b>CDE Practical Exercises R through X</b>	<b>3.0</b>
	<i>Purpose:</i> Develop proficiency in CDE analysis.	
<b>JTS 188</b>	<b>Course Critique</b>	<b>0.5</b>
	<i>Purpose:</i> Students provide course feedback.	

**Chapter 5  
Student Evaluations**

<u>Event ID</u>	<u>Name</u>	<u>Duration</u>
<b>Quiz #</b>	<b>Quiz (Training days 2, 3, &amp; 4) (10 min each) (10 min review)</b>	<b>1.0</b>
	<i>Objective:</i> Students will demonstrate understanding of learning objectives from previous day.	
<b>JTS P199A</b>	<b>CDE Practical Examination (Qualification Part 1)</b>	<b>1.5</b>
	<i>Objective:</i> Students will demonstrate proficiency in practical application of CDE.	
	<i>Standard:</i> Students will have 90 minutes using electronic format or electronic casualty analysis worksheet or 105 minutes for examination with calculator to complete this portion of the examination; must score 80% for qualification.	
<b>JTS 199B</b>	<b>CDE Written Examination (Qualification Part 2)</b>	<b>1.00</b>
	<i>Objective:</i> Students will demonstrate knowledge of the CDM; must score 80% for qualification.	
	<i>Standard:</i> Students will have 60 minutes to complete this portion of the examination; must score 80% for qualification.	

## Chapter 6 Course References

1. Joint Publications
  - a. Access (JEL+)(.mil or .gov): <https://jdeis.js.mil/jdeis/index.jsp>
  - b. References:
    - JP 3-60, Joint Targeting
    - JP 3-09, Joint Fire Support
    - JP 3-09.3, Close Air Support
  
2. Chairman of the Joint Chiefs of Staff Directives
  - a. Access (.mil or .gov): [https://ca.dtic.mil/cjcs\\_directives/index.htm](https://ca.dtic.mil/cjcs_directives/index.htm)
  - b. References:
    - CJCSI 3160.01, No-Strike and Collateral Damage Estimation Methodology
    - CJCSM 3370.01, Target Graphic Standards
  
3. Other
  - a. References
    - Collateral Effects Radii (CER) Reference Tables
    - Digital Precision Strike Suite Collateral Damage Estimation (DCIDE) Software
    - JMEM/AS Weaponing Guide
    - JMEM Weaponing Software
    - CDE Course Student Guide
  
4. Joint Targeting School:
  - a. Unclassified Website: <http://www.dtic.mil/doctrine/jfs/jts.htm>
  - b. Classified Website: [www.intelink.sgov.gov/wiki/Portal:Joint\\_Targeting\\_School](http://www.intelink.sgov.gov/wiki/Portal:Joint_Targeting_School)
  - c. JTS Courseware on IntelDocs: <http://go.sgov.gov/H5TqItZ>
  - d. Course Registration Website: <https://secure.jten.mil/jemis/index.html>
  - e. Contact Information: Joint Targeting School  
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Virginia Beach, VA 23461-2099  
757-492-0277