

2021



Minnesota Commercial Diver Training Center

712 Washington Street, Brainerd MN 56401

218-829-1191

Catalog 2021

Course Description

The Commercial Diver/Tender Course includes an introduction to commercial diving apparatus, air manifold, operations, diver dress in, dress out procedures, dive station selection, various tender techniques, O.S.H.A. commercial diving regulations, safety procedures, and protocol. Fundamental commercial procedures are also studied, such as: diver-to-tender orientation, search patterns, record keeping procedures, basic hand tool techniques, out of air emergency procedure, dive station duties, selecting proper diving equipment, helmet/band masks and their uses, establishing underwater work centers, orientation to surface supplied deep diving, multiple in-water operations, underwater inspections and recording techniques, Diving Operations Supervisor training, field neurological examinations, basic oxygen administration, hyperbaric chamber operation, and equipment care and maintenance. Also included is an introduction to underwater welding and burning and an overview of non-destructive testing methods.

2021 Class Schedule

- May 24 - August 7
- August 16 - October 30

Courses are 11 weeks, Monday – Saturday, 10 hours per day, 60 hours per week.

The contact hours and length of courses have been set to meet ADCI's requirement of 625 hours of training, allowing students to earn an ADCI Entry Level Diver/Tender Certification.

Certifications Received upon Completion of Course:

- **ADCI Entry Level Tender/Diver Certification** (Association of Diving Contractors International). This certification is necessary for graduates to work in commercial diving in the United States.
- **DSI Dive Lab** (Dive Systems International) Superlite Helmet Maintenance Technician certification
- **TDI** and **PADI** Nitrox I
- **TDI** Advanced Nitrox
- **TDI** Nitrox Gas Blender
- **American Red Cross:** O2 Provider
- **American Heart Association:** Emergency First Responder
 - CPR
 - First Aid

About the Certifications

To be qualified to commercial dive in the United States and its territories, students must earn the **ADCI** certification. The ADCI certification is accepted by **IMCA** (International Marine Contractors Association); a worldwide organization. The ADCI certification will be earned during MCDTC's eleven week (625+ hours) commercial diver training course.

Pre-requisites

- Basic SCUBA Certification
- 18 years of age (by the first day of class)
- A high school diploma or GED (equivalent)

Application Process

To reserve space in class the following must be submitted:

- Application, Medical Form, and Waiver
- Proof of Scuba Certification
- Proof of High School graduation, or GED (equivalent).
- Deposit of \$1000.00

Tuition:

\$16,000.⁰⁰.

To reserve a spot in class, a \$1000.⁰⁰ is required along with a completed Student Application, Liability/Waiver, and all Medical forms and test results.

The remaining tuition payment and/or confirmation of financial aid approval is required 1 week prior to the class start date. If not received, the Minnesota Commercial Diver Training Center reserves the right to release the reserved spot to a student on the waiting list.

After an application has been reviewed, the applicant will be notified of their acceptance or if additional documentation is needed.

College Credits:

The Minnesota Commercial Diver Training Center is a private career school with the Minnesota Office of Higher Education pursuant to Minnesota Statutes, sections 136A.821 to 136A.832. Licensure is not an endorsement of the institution. Credits earned at the institution may not transfer to all other institutions.

**Please note that MCDTC is a licensed private career school, not a community college or university, etc. The state and federal government will not accept nor grant tax write offs for training/schooling done through MCDTC.*

Financial Aid:

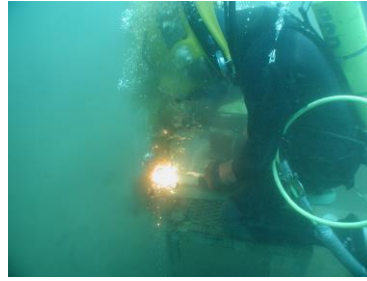
MCDTC's accepted applicants may apply for a **SELF LOAN** through the State of Minnesota to cover a portion of their tuition. The maximum **SELF LOAN** that may be awarded to students of MCDTC is limited to \$3500. An enrolled MCDTC student may obtain a loan application by contacting MCDTC.

Medical Exam:

All applicants must provide the following to enroll:

- **Medical History**; see the ADCI form (pages 1 - 2).
- The following *mandatory tests*:
 - **Physical Examination**; see ADCI form pages 3 - 4. Here any predispositions to unconsciousness, vomiting, cardiac arrest, impairment of oxygen transport, serious blood loss or anything that, in the opinion of the examining physician, will interfere with effective underwater work must be included.
 - **Chest X-ray**; PA (Projection: 14" x 17" minimum)
 - **Bone and Joint X-ray**
 - **EKG: Standard (12 leads)**
 - **Pulmonary Function Test**
 - **Audiogram**; Threshold audiogram by pure tone audiometry; bone conduction audiogram as medically indicated
 - **Visual Acuity**
 - **Color Blindness**
 - **Complete Blood Count**
 - **Routine Urinalysis**
 - **Pregnancy Test**
 - **Sickle Cell Screen**
 - **PPD**
 - **Comprehensive Metabolic Profile**
 - **Immunization date of Hepatitis A & B**
 - **Any other test(s) deemed necessary by the examining physician**
- A **written physician's report** must be provided by the examining physician and submitted to the MCDTC along with the results of the above tests.

(All above 'Diver Medical Requirements' are in accordance with ADCI's *International Consensus Standards for Commercial Diving and Underwater Operations 6.1 Edition, section 2.3.4 table 1 and section 2.3.5*, and all must be completed, submitted, and approved fit for diving in order for any/all applying students to attend MCDTC)



Required Equipment List

The following is a list of equipment that is required for training at MCDTC. Many employers also expect divers to have the equipment listed below as personal gear. Gear can be purchased on site from Minnesota School of Diving (MSD).

- Diver stainless steel folding knife..... \$24.95
- Stainless Steel Snap-shackle \$48.95
- Stainless Steel quick disconnect “U” clamp \$7.95
- Exposure Suit:
 - A wet suit, (at least 6.5 mm), two piece \$295.00
 - OR:
 - A wet suit 7mm one piece \$430.00
 - OR:
 - A dry suit *Price Varies*
- Wet suit gloves with Kevlar fingers \$58.00
- Hard soled wet boots (Mantas) \$70.00
- Diver’s heavy duty harness with a back plate \$395.00
- Commercial diver text book (included with tuition)

* Sales tax not included.

The following are **required** but not sold at MSD

- Steel toed work boot
- Crescent wrenches – adjustable 8” and 12”
- Calculator and notebook for class

Additional equipment recommended but **not required for class:**

- 50 cu/ft “bail-out” bottle.
- KM Dive Helmet with comms. Helmets are provided by the school for class use. They may be required by some employers. It is advisable to have your own helmet for fit and sanitation.
- Wetsuit-3mm for training tank dives

Any items purchased at Minnesota School of Diving for use in the Commercial Diver/Tender course will be discounted 10%.

Attendance Policy

Our program is highly concentrated so **unexcused absences are not tolerated**. Each student is allowed 3 excused absences for illness or emergency. The student is required to make-up any work that is missed as a result of the absence. Unexcused absences for more than 3 days will constitute grounds for dismissal.

Grading Procedure

The grading procedure is as follows: Performance will be evaluated using written quizzes and exams for classroom work, and proficiency will be the basis of evaluation in labs, confined water, and open water sessions. Points earned for correct solutions on the exams will be accumulated throughout the course. The total points earned will be divided by the total points possible resulting in a percent associated with academics. The instructor will give each student a grade by percent for the skills demonstrated by the student in the labs and open water work each day. The grade for each day's work in the lab and water will be based on the instructor's judgment of the level of skill demonstrated with a zero for not completing the skill to 100% for a perfect performance. These daily percents will be averaged for a final percent based on diving skills. The total percent on the academic tests, and the final percent earned in skills will be averaged to provide a final percent. A final letter grade will then be assigned according to the following schedule.

92 - 100% = A

87 - 92% = B

80 - 87% = C

75 - 80% = D

0 - 75% = F

Description of Scholastic Requirements and Satisfactory Progress

Passing all academic tests and receiving satisfactory scores from the instructor constitutes satisfactory progress in all courses. If the student fails a written exam, the student must make an appointment with the instructor to retake the test on that subject until a passing score is attained. If a student is unable to complete an underwater skill satisfactorily he/she must make an appointment with the instructor for more practice until a satisfactory performance is attained. Students who fail to make arrangements for repeating a test or improving performance skills within 7 days or who fail a test more than 4 times will be academically dismissed. Students who are academically dismissed may be readmitted only when they can demonstrate that they have made reasonable progress toward successfully completing the program.

Previous Credit:

MCDTC's class is fast paced and based upon the required number of course hours established by the Association of Diving Contractors International. MCDTC does not allow/grant credit for previous classes taken at any other diving school. MCDTC follows the rules and regulations set forth by the certifying agency (ADCI) when training and certifying commercial diver students to ensure that graduates of MCDTC are qualified in all aspects of diving.

Description of physical facilities

LOCATION: The Minnesota Commercial Diver Training Center is located within the Minnesota School of Diving building. The building is located in the center of downtown Brainerd, MN on Hwy 210, one block east of the landmark water tower.

Brainerd is located in the geographical center of the state. There are 624 lakes and 27 flooded iron mine pits located within a 50 mile radius Brainerd, making it one of the largest resort areas in the state. We are located about 2 hours north of Minneapolis/St. Paul and one hour north of St. Cloud, MN. There is a regional airport serving Brainerd.

Course Outline- Commercial Diver/Tender Course

- I. Introduction
- II. Course Overview
 - A. Standards
 - B. Objectives
- III. Diving Physics
 - A. Air
 - 1. Composition
 - 2. Properties
 - 3. Characteristics
 - B. Water
 - 1. Composition
 - 2. Characteristic
 - C. Pressure Terminology and Values
 - 1. Absolute Pressure
 - 2. Ambient Pressure
 - 3. Gauge Pressure
 - D. Buoyancy in Water
 - 1. Archimedes Principle
 - 2. Examples and Applications
 - E. Temperatures Used in Gas Laws
 - 1. Rankine Degrees
 - 2. Kelvin Degree
 - F. Gas Laws
 - 1. Boyle's Law
 - 2. Charles' Law
 - 3. Henry's Law
 - 4. Dalton Law – Partial Pressures
 - 5. The General Gas Law
 - G. Air Consumption Formula
 - H. Summary
- IV. Diving Physiology
 - A. Introduction
 - B. Terminology
 - C. Anatomy and Physiology
 - 1. Circulation System
 - 2. Respiratory System
 - 3. Body Cavities Containing Air
 - D. Primary Effects of Pressure – Barotraumas
 - 1. Ears
 - 2. Lungs
 - 3. Blood Stream
 - E. Secondary Effects of Pressure – Dissolution of gases in body tissue:
 - 1. Narcotic Effects of Nitrogen
 - 2. Toxic Effect of Oxygen
 - b. Central Nervous System (CNS) .. Paul Bert Effect
 - c. Pulmonary / Lorraine – Smith Effect

3. Toxic Effect of Carbon Dioxide
 4. Toxic Effect of Carbon Monoxide
 5. Nitrogen Absorption and Elimination – Half Times
 6. Decompression Sickness
- V. Diver Medicine
- A. Anoxia /Hypoxia
 - B. Carbon Dioxide
 - C. Squeeze
 - D. Decompression Sickness
 - E. Air Embolism
 - F. Nitrogen Narcosis
 - G. Oxygen Toxicity
 - H. Spontaneous Pneumothorax
 - I. Carbon Monoxide
 - J. Drowning (Near Drowning)
 - K. Bone Necrosis
- VI. U.S. Navy Dive Tables
- A. Decompression Chamber Operations
 - B. Single Dive no decompression limits
 - C. Repetitive dives
 - D. Decompression tables for exceeded limits
- VII. Record Keeping
- A. Station Dive Chart
 - B. Emergency Waybill
 - C. Divers Log Book
- VIII. Commercial Air Diving Equipment
- A. Diver Helmet and Face Masks
 1. Aga
 2. EXO-26
 3. KMB -18
 4. KMB Superlite – 17
 5. KMB Superlite – 27
 6. KMB Superlite – 37
 7. KMB Superlite – 57
 8. KMB Stainless Steel - 37
 9. KMB Stainless Steel - 77
 10. Desco
 11. Navy Mark 12
 - B. Surface Diver Control System – Rack Box
 - C. Diver / Surface Communication Systems
 - D. Diver Bail- Out Systems
 - E. Diver Umbilical and Communication Line
 - F. Exposure Suits, Weights and other Dive Gear
 - G. Hot water suits
 - H. Equipment Maintenance
 - I. LP Compressor Maintenance

- J. HP System Maintenance

- IX. Diving Procedures
 - A. Pre-dive Check List
 - B. Line Pull Signals
 - C. Station “Set up/ Breakdown” Check List
 - D. Diver “Dress-in / Dress-out” Procedure
 - E. Neurological Examination
- X. Rigging
 - A. Terminology
 - B. Ropes
 - 1. Types
 - a. Fiber ropes
 - b. Wire Ropes
 - i. Shackles
 - ii. Hooks
 - iii. Slings
 - 2. Strength Formula
 - C. Knots
 - D. Lift System
- XI. Introduction to Diving Tasks
 - A. Hand Tools
 - B. Dredge – Jetting Equipment
 - C. Air lifts
 - D. Underwater Welding
 - E. Underwater Burning / Cutting
 - F. Inspections
 - i. Objectives of Underwater inspections
 - ii. Divers inspection Qualifications
 - iii. Types of Underwater inspections
 - G. Introduction to Explosives
 - H. Introduction to Video
- XII. Diving Environments
 - A. Lakes
 - B. Rivers
 - C. Bridges
 - D. Locks and Dams
 - E. Confined Spaces
 - F. Harbor
 - G. Under Ice
 - H. Zero Visibility
 - I. Contaminated Water

Clock Hours

Description	ADCI Hours	MCDTC Hours
1. Principles of Diving Physics	12.5	12.5
2. Formula Application	12.5	12.5
3. Air Decompression Tables & Decompression Procedures	30	30
4. Anatomy & Physiology Related to Diving	18	18
5. Diving Diseases, Injuries & Psychological Aspects	12	12
6. Treatment of Diver's Illness & Injuries	30	30
7. First Aid for Divers and CPR	16	16
8. Noxious Gases in Enclosed Spaces	2	2
9. Environmental Hazards of Diving	12	12
10. Hyperbaric Chamber & Associated Equipment	16	16
11. Trainee Participation in Chamber Operations	44	44
12. Seamanship & Rigging Fundamentals	25	25
13. Practical Application of Seamanship & Rigging	60	60
14. Lightweight Diving Equip. Function & Nomenclature	24	24
15. Lightweight Diving Procedure & Techniques	40	40
16. Maintenance of Diver's Umbilical	12	12
17. Underwater Work Using Lightweight Diving Equip.	65	65
18. Operations Planning	12	12
19. Diving Logs, Records, and Standards for Commercial Diving Operations	12	12
20. Underwater Tools	24	24
21. Drawings, Blueprint Reading, Report Writing	8	8
22. Hot-Water Systems	2	2
23. Introduction of Topside Welding	26	26
24. Topside Welding Equipment	12	12
25. Oxygen-Acetylene Cutting Techniques	10	10
26. Practical Application of Oxygen-Acetylene Method Cutting	12	12
27. Introduction to Underwater Burning and Welding	24	24
28. Mixed-Gas Diving: HeO ₂	30	30
29. Marine Engines & Compressors	16	16
30. Industrial & Offshore Safety	6	6
Total Hours:	625	625

Electives	ADCI's Hours	MCDTC's Hours
1. Helmet Inspection/Maintenance/Operation: Dive Lab Certification	0	9
2. Drysuit Diving	0	14
3. Nitrox Gas Blending/Nitrox Diving/Adv. Nitrox Diving: TDI Certifications	0	20
4. Contaminated Water Diving	0	3
5. Confined Space/Entanglement (Class & Practical)	0	9
6. Scuba Certification	0	16**
Total Hours:	0	696

***ADCI** requires 625 hours of training to qualify for their Diver/Tender certification.

****SCUBA** certification is required for enrollment in our commercial course. ADCI has granted 16 hours of credit for this certification which can be added to the above hours. This training, in addition to the time spent in the commercial diver course, gives our students an equivalent of 676 hours of training. Class size is limited to 12 students.

Refund Policy

For programs greater than 40 hours with a written contract or enrollment agreement (per Minnesota Office of Higher Education Private Career School License requirements).

Buyers Right to Cancel

If your application is rejected, you will receive a full refund of all tuition, fees, and other charges. You will be entitled to a full refund of tuition, fees, and other charges if you give notice that you are cancelling your enrollment within five days of being accepted into the school or program. This five-day refund policy applies regardless of when the program starts. If you give notice more than five days after you have been accepted into the school or program (or first lesson for an online distance education program), you will receive a refund of all tuition, fees, and other charges minus 15%, up to \$50, of the total cost of the program. You will be provided a prorated tuition, fees, and other charges refund minus a 25%, up to \$100 administrative if you give notice of your withdrawal after your program has begun, but before 75% program has completed. If you withdraw from your program after 75% of the program has completed, you are not entitled to a refund of tuition, fees, and other charges.

You will receive written notice acknowledging your withdraw request within 10 business days after receipt of the notice and you will receive a refund of any tuition, fees, and other charges within 30 business days of receipt of your withdrawal. Written notice is effective of the date of the postmark if sent by mail or the day it has been hand-delivered to the institution. If you do not withdraw in writing or contact the institution about your absence, and you have not attended your program for 21 consecutive days, you will be considered to have withdrawn from the school as of your last date of attendance.

Minnesota Office of Higher Education
1450 Energy Park Drive Suite 350
St. Paul, MN 55108

Refund Policy for Veterans Attending This School While Receiving Government Benefits

In the event that a veteran or a veteran's beneficiary enrolls under the provisions of Title 38, US Code and/or Title 10, US Code and discontinues training before completion of the program, the school will retain ten dollars (\$10) as a bona fide registration cost. All other advance payment of tuition, fees and other charges will be refunded to the trainee on a pro-rata basis computed to the date of discontinuance of training.

Probation / Suspension / Dismissal

A written notice of action will be given to any student removed from school enrollment, for any reason, within 48 hours of the effective date of action. A copy of the notice will become part of the student's record.

Students will be subject to immediate dismissal for the following reasons:

- Use of alcohol or drugs on school grounds
- Conduct that interferes with other students and/or the class in the learning process
- Excessive absences or unsatisfactory grades
- Failure to pay tuition and fees as agreed
- Violation of any safety rules

Complaint Procedure

If a student has a complaint to register it can be addressed to any member of the faculty or advisory board. The complaint can be either verbal or written. When a complaint is received, the faculty or advisory board will conduct an investigation into within 7 days. It will then be reviewed by the board. If the investigating committee finds merit in the complaint, appropriate action will be communicated and acted upon by the board.

Members:

William Matthies- President, Minnesota Commercial Diver Training Center
Vice President, Minnesota School of Diving, Inc

Todd Matthies- Vice President, Minnesota Commercial Diver Training Center
President, Minnesota School of Diving, Inc

Mark Owens- Director of Operations, Minnesota Commercial Diver Training Center

Kent Honnold- Director of Education, Minnesota Commercial Diver Training Center