Diesel Technology is a two-year program designed to prepare students for the many employment opportunities in the diesel industry leading to an Associate of Applied Science Degree. The Diesel Technology program is accredited by the AED Foundation.

**NDSCS Program Coordinator/Instructor**
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INTRODUCTION

The Diesel Technology program is an Associate of Applied Science degree (A.A.S.) that is designed to develop technically competent, professional service technicians.

Students receive state-of-the-art technical training on construction, over the road truck, agricultural equipment and related products through a combination of classroom instruction, hands-on laboratory instruction, and cooperative educational work experience at a participating OEM dealership.

The Diesel Tech program takes four semesters or approximately 18 months to complete. The four semesters are divided into eight terms, each approximately eight weeks in length.

Classroom and laboratory instruction at NDSCS covers the basics of each subject plus the latest developments in equipment. Work experience at an OEM dealership is structured to relate to the most recent classroom subjects covered at NDSCS and includes projects to improve the student’s skill level.

Students are responsible for tuition, fees, textbook, uniform and tool costs.

DIESEL TECHNOLOGY PROGRAM
(AAS Degree)

CURRICULA

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<tr>
<th>Course Code</th>
<th>Course Title</th>
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<td>DTEC 109</td>
<td>Air Conditioning for Diesel Technology</td>
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<td>Introduction to Light and Medium Duty Engines</td>
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<td>DTEC 135</td>
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<td>DTEC 164</td>
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<td>DTEC 215</td>
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<td>MFGT 110</td>
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Related/General Education Courses

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<tr>
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<td>CIS 101</td>
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<tr>
<td>ENGL 110</td>
<td>College Composition I</td>
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<td>English/Communication elective (choose one)</td>
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<tr>
<td>ENGL 105</td>
<td>Technical Communications</td>
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<td>ENGL 120</td>
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<td>ENGL 125</td>
<td>Introduction to Professional Writing</td>
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<td>COMM 110</td>
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<td>HPER</td>
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<td>MATH 120</td>
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<td>PSYC 100</td>
<td>Human Relations in Organizations</td>
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<td>FYE 101</td>
<td>Science of Success</td>
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Class schedule may change without notice.
COURSE DESCRIPTIONS

DTEC 109 Air Conditioning for Diesel Technology (2 credits)
A lecture, discussion and lab-type course covering the design and principles of operations of various air conditioning systems, including agriculture, construction and trucking equipment. Work in lab consists of leak detecting, evacuation, reclaiming, charging, component comprehension, electrical systems and troubleshooting for various units. (F, S)

DTEC 115 Introduction to Light and Medium Duty Engines (4)
A theory and lab course covering rebuilding of heavy duty gas and light- and medium-duty diesel engines. Students will troubleshoot, disassemble, rebuild and assemble an engine during this class. Learning modules include: measurement fundamentals, basic engine operating principals, cylinder and piston service, cylinder head rebuilding and valve reconditioning, crankshaft and bearing service, and lubrication and cooling systems. Engines designed for the use of alternative fuels such as LPG and CNG are also covered. This class is a prerequisite for DTEC 215, CIH 215 and JDAT 215.

DTEC 125 Introduction to Heavy Duty Drive Systems (3)
A lecture and lab type course which provides the student with theory and hands-on operation of shop safety, operation and repair of bearings, seals, heavy duty steer axles, drive axles, medium and heavy duty truck suspension and wheel end assemblies. This is an 8-week course and an 80-hour class. This class is a prerequisite for DTEC 225, CIH 225 and KMTS 225. (F, S)

DTEC 135 Medium/Heavy Duty Brake Systems (2)
A theory and lab course covering the operation and repair of air and hydraulic brake systems used in light, medium, heavy duty trucks and diesel powered equipment. This course covers all brake systems, diagnosis and repair of power, manual, anti-lock brakes and parking brakes. DOT inspection procedures are also covered in this class. This is an 8-week course and a 64-hour class.

DTEC 155 Electricity for Diesel Technology (4)
An introductory lab/theory class in electrical fundamentals. A practical approach to the study of electricity including Ohm’s Law, power, series and parallel circuits, direct and alternating current, with strong emphasis on diagrams and troubleshooting. This class is designed for technicians in the Diesel Technology field. This class is a prerequisite for DTEC 225, CIH 225, and KMTS 225. (F, S)

DTEC 164 Introduction to Mobile Hydraulics (4)
This course is a study of hydraulic system fundamentals and various components used in a typical mobile hydraulic system. Component disassembly and reassembly will take place to aid in the understanding of component and system operation. Various components will be tested on a test bench to help the student understand how the components contribute to the overall operation of the system and will be used to evaluate the students’ performance. Experiments will be performed on lab equipment to aid in the understanding of mobile hydraulic principles. This class is a prerequisite for DTEC 265, CIH 265, and KMTS 265. (F, S)

DTEC 185 Diesel Fuel Injection Systems (3)
This course introduces students to diesel fuel injection systems. The students will study the design and operation of a variety of diesel fuel systems. Students will be required to inspect, disassemble, assemble, performance test and adjust fuels system components. This is an 8-week course and an 80-hour class. (F, S)

DTEC 215 Heavy Duty Diesel Engines (7)
A lecture and lab type course of current heavy-duty diesel engines. Students gain knowledge in operation, troubleshooting, rebuilding and tuning all types of diesel engines. Work includes disassembly, assembly, injection timing and adjustment common to diesel engines used in the agricultural, transportation and industrial industries. Prerequisite: DTEC 115.

DTEC 225 Heavy Duty Drive Systems (7)
A lecture and lab type course which provides the student with theory and hands-on operation and repair of the latest types of heavy-duty drive systems that the agricultural, transportation and industrial industries use on their equipment. Prerequisite: DTEC 125. (F, S)

DTEC 255 Heavy Duty Chassis Electrical Systems (7)
A lecture and lab type course covering the theory of operation, repair and diagnostic procedures used on heavy-duty truck and tractor electrical systems, electronic engines and transmissions. This is a half-semester course. Prerequisite: DTEC 155. (F, S)

DTEC 265 Mobile Hydraulic Systems Diagnostics and Repair (7)
DTEC 265 is a lab/lecture course covering the service diagnostics and repair of the hydraulic functions on agricultural and industrial equipment. Open center, closed center, and closed center load sensing systems are covered as well as steering, hydrostatic drives, 3 point hitches, and hydraulic functions of today’s equipment. Prerequisite: DTEC 164.

DTEC 297 Cooperative Education for Diesel Technology (1-5)
The Cooperative Education program for Diesel Technology allows the students to apply classroom study with a paid work experience related to their fields of study at a department approved work site. It is recommended that the student has completed one year of Diesel Technology. (Su)

MFGT 110 Industrial Shop Practices (2)
An introduction to the procedures and practices used to develop fundamental industrial shop skills. Students enrolled in this class will learn and apply a variety of practical skills used to aid in any entry level industrial mechanical service occupation. The topics covered in this course are: general shop safety; MIG welding set-up and operation as well as welding simulation; Oxy-Fuel torch set-up and operation; basic measuring methods using tape measures, rulers, calipers, and micrometers; identification of SAE and ISO metric measuring systems; proper use and identification of basic shop tools; identification of twist drills and sharpening; identification and use of hand taps; fastener type and grade identification; Helicoil insert use; bolt extraction; properly demonstrate the use of mechanical type torque wrenches; properly demonstrate the use of electronic type torque wrenches; properly demonstrate the ability to torque according to industry standards.

ENGL 105 Technical Communications (3)
This course concentrates on business correspondence, informal report writing, technical communication, job preparation, and oral presentation. Prerequisite: Placement test. (F, S, Su-Online)

ENGL 110 College Composition I (3)
An introduction to college-level writing as a process of drafting, revising and editing. This course emphasizes critical reading, writing, thinking and research skills as students write for a variety of audiences and purposes. Students will receive guided instruction in the writing process as they begin writing based on personal experiences. An introduction to proper crediting of source material and research will occur toward the end of the course. Prerequisite: Placement test. (F, S, Su, O) ND-ENGL

ENGL 120 College Composition II (3)
Continued practice of college-level writing process and strategies, building on skills learned in English 110. This course refines critical reading, writing, thinking and research skills. Students will practice summary and analysis of texts, as well as synthesizing information from primary and secondary sources. Writing assignments will emphasize logical argument, persuasion and collaboration. Major assignments will require proper crediting of source material and research. Prerequisite: English 110. (F, S, Su, O) ND-ENGL

ENGL 125 Introduction to Professional Writing (3)
Advanced practice in college-level writing which emphasizes writing and research in professional settings. Prerequisite: English 110. (F, S-Online, Su-Online) ND-ENGL
COMM 110  Fundamentals of Public Speaking (3)
The theory and practice of public speaking with emphasis on content, organization, language, delivery and critical evaluation of messages. (F, S, Su, O) ND:COMM

MATH 120  Basic Mathematics I (2)
A review of whole numbers, fractions and decimal numbers in conjunction with the fundamental application of ratios, rates, unit rates, proportions, and percentages in solving everyday problems. The application of business and consumer mathematics such as simple interest, compound interest, and purchasing. (F, S)

MATH 123  Basic Mathematics II (2)
This course introduces statistical data reading and calculating. Problem solving applications involving U.S. and Metric measurements. Application of direct measurement, perimeter, area, volume, and fundamental geometry. (F, S)

MATH 125  Basic Mathematics III (2)
Basic concepts and features of beginning algebra with emphasis on critical thinking and problem solving. Topics include properties of real and rational numbers, arithmetic operations of numbers and expressions, translating verbal expressions to variable expressions, formula manipulations and application of word problems. (F, S)

PSYC 100  Human Relations in Organizations (2)
This course focuses on building successful and effective interpersonal relationships within organizational and other social environments. It includes an examination of human relations in business and industry with emphasis on how people can work effectively in groups to satisfy both organizational and personal goals. Motivation, emotional and mental health, communication techniques, and coping with stress are explored. Activities are used to encourage the application of concepts to enhance personal growth and insight and to increase social skills. (F, S, Su-as needed, O) ND:SS

CIS 101  Computer Literacy (2)
This course is designed to provide non-Computer Science majors with an introductory-level course in computer usage that prepares them for contemporary work environments. It is a hands-on lab-based course intended to introduce the student to the Windows operating system, Word, Excel and PowerPoint. Windows PC required. (Credit awarded for CIS 101 or CSCI 116, not both.) (F, S, Su, O) ND:COMPSC

FYE 101  Science of Success (1)
This is a practical one-credit course that provides the tools and skills necessary to get a strong start with the transition for new students at NDSCS. This course will introduce students to campus resources, policies and procedures and cover topics such as time management, study skills, goal setting, wellness, financial literacy and professional development. (F, S, O)

STUDENT ADMISSION AND SELECTION PROCEDURE

Students enroll in the Diesel Technology program at the beginning of any eight week period, providing enrollment space is available. Students are accepted into the program upon completion of admission into NDSCS. Students should do the following:

Apply for admission to NDSCS through the Enrollment Services office. Enrollment Services will not accept faxed applications for any program.

- Submit high school transcripts or GED to Enrollment Services.
- ACT minimum test score of 15 in reading and English.

ADMISSIONS
Students should contact the NDCS Enrollment Services office (701-671-2173) to receive information on the college, financial aid and housing. Students should complete the applications and return them to NDSCS promptly. Assessment tests will be required prior to admission into the Diesel Technology program.

HIGH SCHOOL OR GED TRANSCRIPTS
Applicants must demonstrate completion of high school or GED equivalency. Students should contact their high school guidance office and request that their transcript be submitted to NDSCS Enrollment Services.

ORIENTATION
All freshmen must complete an orientation. Once a student is admitted to NDSCS, Enrollment Services will schedule orientation for the student. Orientation includes a tour of the NDSCS campus, financial aid counseling, scheduling (academic advising) and registration.

SCHOLARSHIP AVAILABILITY
A general scholarship application must be completed to be eligible for scholarships.
COLLEGE EXPENSES

Contact the Director of Enrollment Services for tuition costs.

NOTE: All tuition, fees, room and board costs are tentative and are subject to change. Personal costs are rough estimates of personal spending. Contact the NDSCS Enrollment Services office for a current information sheet.

STUDENT TOOL LIST

Students are responsible for purchasing or providing their own tools. Below is a list of required tools for the program. These tools can be purchased from NDSCS at a substantial discount through the Bookstore.

CORRESPONDENCE

All correspondence should be directed to the following address:

Diesel Technology Enrollment Services
North Dakota State College of Science
800 Sixth St. N.
Wahpeton, ND 58076
CONTACT INFORMATION

Students should direct all inquiries to the following contact persons.

North Dakota State College of Science Primary Contacts:

Terry Marohl  
Department Chair, Transportation Department  
Diesel Technology  
701-671-2308 or 800-342-4325 ext. 3-2308  
Terry.Marohl@ndscs.edu

Jenny Schmitt  
Program Assistant  
Diesel Technology  
701-671-2330  
Jenny.Schmitt@ndscs.edu

DIESEL TECHNOLOGY PARTNERSHIP PROGRAMS

The following programs are partnerships with NDSCS and participating corporate and dealer sponsors. For information on the partnership programs please contact the program coordinator listed.

John Deere Tech  
Program Coordinator  
Tyler Slettedahl  
800-342-4325 ext. 2726  
Tyler.Slettedahl@ndscs.edu  
NDSCS.edu/JohnDeere

CAT Dealer Service  
Program Coordinator  
Michael Seedorf  
800-342-4325 ext. 2101  
Michael.L.Seedorf@ndscs.edu  
NDSCS.edu/Caterpillar

Diesel Technology – Case IH  
Program Coordinator  
Mike Redding  
800-342-4325 ext. 2226  
Mike.Redding@ndscs.edu  
NDSCS.edu/Case-IH

Diesel Technology – JD C&F  
Program Coordinator  
Terry Marohl  
800-234-4325 ext. 2308  
Terry.Marohl@ndscs.edu  
NDSCS.edu/Diesel

Diesel Technology – Komatsu  
Program Coordinator  
Evan Meier  
800-234-4325 ext. 2543  
Evan.Meier@ndscs.edu  
NDSCS.edu/Komatsu