New Horizons Regional Education Center (C & T)			
Pacing Guide			
Program: Auto Tech 2		**Teacher: Dennis Young**	
1st Marking Period Topic/Unit	**NATEF Competency**	**Standardized Test Areas for NATEF**	**Supporting Equipment/Technology**
1. Handbook		Rules and Regulations	Handbook
2. Safety	Shop and Personal Safety 1-15	Safety	SP2
	Elecrical Fundamentals		
3.Chapter 17 Electrical Principles	VI A2 Demonstrate knowledge of electrical/electronic series, parallel, and series-parallel circuits using principles of electricity (Ohm's Law).	Fundamentals of Electricity	Electude, Textbook, Honda online university, Youtube
4.Chapter 18 Circuit Types and Ohms Law	VI A2 Demonstrate knowledge of electrical/electronic series, parallel, and series-parallel circuits using principles of electricity (Ohm's Law).	Fundamentals of Electricity	Electude, Textbook, Honda online university, Youtube
5.Chapter 19 Electric and Electronic Components	VI E4. Verify operation of instrument panel gauges and warning/indicator lights; reset maintenance indicators.	Fundamentals of Electricity	Electude, Textbook, Honda online university, Youtube
6.Chapter 20 Electrical Tools and Test Equipment	VI A4. Demonstrate proper use of a digital multimeter (DMM) when measuring source voltage, voltage drop (including grounds), current flow, and resistance.	Fundamentals of Electricity	Electude, Textbook, Honda online university, Youtube
7.Chapter 36 Lights, Instrumentation, Wipers and Horns operation and Service	VI E1. Inspect interior and exterior lamps and sockets including headlights and auxiliary lights (fog lights/driving lights); replace as needed.	Fundamentals of Electricity	Electude, Textbook, Honda online university, Youtube
8.Chapter 21 Wiring Diagrams and Wiring Repairs	VI A3. Use wiring diagrams to trace electrical/electronic circuits.	Fundamentals of Electricity	Electude, Textbook, Honda online university, Youtube
9.Chapter 22 Basic Electrical Tests	VI A4. Demonstrate proper use of a digital multimeter (DMM) when measuring source voltage, voltage drop (including grounds), current flow, and resistance.	Fundamentals of Electricity	Electude, Textbook, Honda online university, Youtube
2nd Marking Period Topic/Unit	**NATEF Competency**	**Standardized Test Areas for NATEF**	**Supporting Equipment/Technology**
10.Chapter 28 12V and HV Battery Technology	VI B2. Confirm proper battery capacity for vehicle application; perform battery capacity test; determine necessary action.	Fundamentals of Electricity	Electude, Textbook, Honda online university, Youtube

11.Chapter 29 12V and HV Battery Service	VI B4. Inspect and clean battery; fill battery cells; check battery cables, connectors, clamps, and hold-downs.	Fundamentals of Electricity	Electude, Textbook, Honda online university, Youtube
12.Chapter 30 Engine Starting Systems	VI C5. Inspect and test switches, connectors, and wires of starter control circuits; determine necessary action.	Fundamentals of Electricity	Electude, Textbook, Honda online university, Youtube
13.Chapter 31 Engine Starting Systems Dagnosis and Repair	VI C1. Perform starter current draw test; determine necessary action, 2. Perform starter circuit voltage drop tests; determine necessary action.	Fundamentals of Electricity	Electude, Textbook, Honda online university, Youtube
14.Chapter 32 Engine Charging System Technology	VI D1. Perform charging system output test; determine necessary action.	Fundamentals of Electricity	Electude, Textbook, Honda online university, Youtube
15.Chapter 33 Engine Charging System Dagnosis and Repair	VI D2. Inspect, adjust, or replace generator (alternator) drive belts; check pulleys and tensioners for wear; check pulley and belt alignment.	Fundamentals of Electricity	Electude, Textbook, Honda online university, Youtube
	Engine Performance		
16.Chapter 23 Computer sytem Fundamentals	VIII B. 1-2 Retrieve and record diagnostic trouble codes, OBD monitor status, and freeze frame data; clear codes when applicable.	Engine Performance	Electude, Textbook, Honda online university, Youtube Snap on Verus, Modus and Solus
17.Chapter 24 Onboard Diagnostic	VIII B. 1-2 Retrieve and record diagnostic trouble codes, OBD monitor status, and freeze frame data; clear codes when applicable.	Engine Performance	Electude, Textbook, Honda online university, Youtube Snap on Verus, Modus and Solus
18.Chapter 25 Computer system circuit troubleshooting	Retrieve and record diagnostic trouble codes, Describe the importance of operating all OBDII monitors for repair verification.	Engine Performance	Electude, Textbook, Honda online university, Youtube Snap on Verus, Modus and Solus
3rd Marking Period Topic/Unit	**NATEF Competency**	**Standardized Test Areas for NATEF**	**Supporting Equipment/Technology**
24.Chapter 34 Ignition System Fundamentals	Diagnose (troubleshoot) ignition system related problems such as no-starting, hard starting, engine misfire, poor driveability, spark knock, power loss, poor mileage, and emissions concerns; determine necessary action.	Engine Performance	Electude, Textbook, Honda online university, Youtube Snap on Verus, Modus and Solus
25.Chapter 35 Ignition System Problems, Testing and Repair	Inspect and test crankshaft and camshaft position sensor(s); perform necessary action. Inspect, test, and/or replace ignition control module, powertrain/engine control module; reprogram as necessary.	Engine Performance	Electude, Textbook, Honda online university, Youtube Snap on Verus, Modus and Solus

19.Chapter 39 Automotive Fuels, Gasoline and Diesel Combustion	Diagnose (troubleshoot) hot or cold no-starting, hard starting, poor driveability, incorrect idle speed, poor idle, flooding, hesitation, surging, engine misfire, power loss, stalling, poor mileage, dieseling, and emissions problems; determine necessary action.	Engine Performance	Electude, Textbook, Honda online university, Youtube Snap on Verus, Modus and Solus
20.Chapter 40 Fuel Tanks, Pumps, Lines and filters	Check fuel for contaminants; determine necessary action.Inspect and test fuel pumps and pump control systems for pressure, regulation, and volume; perform necessary . Replace fuel filter(s).	Engine Performance	Electude, Textbook, Honda online university, Youtube Snap on Verus, Modus and Solus
21.Chapter 41. Gasoline injection fundamentals	Diagnose engine mechanical, electrical, electronic, fuel, and ignition concerns; determine necessary action.	Engine Performance	Electude, Textbook, Honda online university, Youtube Snap on Verus, Modus and Solus
22.Chapter 42 Gasoline Injection Diagnosis and Repair	Inspect and test computerized engine control system sensors, powertrain/engine control module (PCM/ECM), actuators, and circuits using a graphing multimeter (GMM)/digital storage oscilloscope (DSO); perform necessary action.	Engine Performance	Electude, Textbook, Honda online university, Youtube Snap on Verus, Modus and Solus
23.Chapter 45 and 46 Exhaust Systems, Turbochargers and Superchargers	Inspect integrity of the exhaust manifold, exhaust pipes, muffler(s), catalytic converter(s), resonator(s), tail pipe(s), and heat shields; perform necessary action.	Engine Performance	Electude, Textbook, Honda online university, Youtube Snap on Verus, Modus and Solus
26.Chapter 51 Emission Control Systems	Diagnose oil leaks, emissions, and driveability concerns caused by the positive crankcase ventilation (PCV) system; determine necessary action.	Engine Performance	Electude, Textbook, Honda online university, Youtube Snap on Verus, Modus and Solus
27.Chapter 52 Emission Control System Testing, Service and Repair	Inspect, test, service, and replace components of the EGR system including tubing, exhaust passages, vacuum/pressure controls, filters, and hoses; perform necessary action.	Engine Performance	Electude, Textbook, Honda online university, Youtube Snap on Verus, Modus and Solus, Leak Tamer , Gas Analyzer
4th Marking Period Topic/Unit	**NATEF Competency**	**Standardized Test Areas for NATEF**	**Supporting Equipment/Technology**
28.Chapter 53 Engine Performance and Driveability	Identify and interpret engine performance concerns; determine necessary action. Diagnose engine mechanical, electrical, electronic, fuel, and ignition concerns; determine necessary action.	Engine Performance	Electude, Textbook, Honda online university, Youtube Snap on Verus, Modus and Solus

29.Chapter 54 Advanced Diagnostics	Perform engine absolute (vacuum/boost) manifold pressure tests; determine necessary action.Perform cylinder cranking and running compression tests; determine necessary action.	Engine Performance	Electude, Textbook, Honda online university, Youtube Snap on Verus, Modus and Solus
30. Chapter 55 Engine Tune-Up	Diagnose engine mechanical, electrical, electronic, fuel, and ignition concerns; determine necessary action.	Engine Performance	Electude, Textbook, Honda online university, Youtube Snap on Verus, Modus and Solus
31.Chapter 66 Automatic Transmission Fundamentals	Inspect, test, adjust, repair, or replace electrical/electronic components and circuits including computers, solenoids, sensors, relays, terminals, connectors, switches, and harnesses.	Automatic Transmission and Transaxle	Electude, Textbook, Honda online university, Youtube Snap on Verus, Modus and Solus
27.Chapter 67 Automatc transmission Service	Identify and interpret transmission/transaxle concern, differentiate between engine performance and transmission/transaxle concerns; determine necessary action.	Automatic Transmission and Transaxle	Electude, Textbook, Honda online university, Youtube Snap on Verus, Modus and Solus
	HVAC		
32.Chapter 47 and 48 Engine Cooling System	I C. 1-3, Testing and inspecting cooling system	Engine Repair	Electude, Textbook
33.Chapter 84 and 85	VII A.1, VII B.1-4, VII C.1, VII D.1-2. Diagnose HVAC system Performance	HVAC	Electude, Textbook, Honda online university, Youtube