Unit:	Fault tracing strategies in engine management systems		
Work tasks that the student should be able to do/solve after completed unit	Student should be able carry out fault tracing in logical order in an engine management system.		
Pre requisites:	-Basic in engine management systems. - Basic knowledge of electricity - Basic knowledge about most common sensors (inductive, Hall sensors, resistive -NTC,PTC)		
Learning outcomes:	*Knowledge*	*Skills*	*Competences*
	- To know most common symbols in a wiring diagram	- Able to read and follow a circuit in a wiring diagram	- Able to do measurements on vehicle and be sure to know what value that is expected according to the wiring diagram.
	- Describe the function of a inductive, hall sensor, resistive	- Able to measure a sensor in order to know if the function is correct. Using a multimeter and sensors specifications.	- Able to do a function test on a sensor in a vehicle
	- Know what functions you can use in a PC test tool to help you find a fault (Vcads pro Volvos test tool)	- Able to connect a PC tool to a vehicle with necessary settings	- Able to carry out an appropriate tests according to the fault symptom
	- Know the function and how you can use all parts in a workshop manual for fault tracing "IMPACT" Volvo´s information system"	- Able to find the right information in a manual according to the symptom.	
	- Know the basics how to interview a customer abut a fault	- Able to interview and fill in a symptom report.	

			Able to, and in autonomy, carry out a complete fault tracing using all know skills a knowledges and competences in this unit in
Reference to national qualification:	Sweden – Fordon och Transportprogrammet (SeQF 4) France – BTS Après-Vente des Véhicules Automobiles - Option Véhicules Industriels - Classe Europe (poids lourds, camions) Turkey – Engine Vehicle technology Vocational School Turkey The Netherlands – Bedrijfsautotechnicus Finland - Vehicle Sector, competence area in Vehicle Technology, Vehicle Mechanic (EQF 4)		
Reference to EQF/NQF:	The unit is too small to refer to an EQF level. Because it refers to an NQF this is an indirect reference to the EQF to which the regarding NQF belongs.		
ECVET points	N/A		
Assessment:	Students will be assessed based on their knowledge's, skills and competences given in this unit. Use the related Assessment Grid.		
	The student will be assessed both continually and in a practical fault tracing situation. The student will be given a truck, VOLVO, with an unknown fault. He should now solve the problem by combining his skills, knowledges and competences. He should solve the problem in a logical order by interviewing the customer and look for guidance in manuals (IMPACT). He should perform proper tests and be able to read and interpret possible error codes In the end he should verify that he has found the right fault by using a multimeter and do measurements on the component. The assessment will be overseen by an assessor / (teacher) who has the proper technical skills. The student will as a complement, create a report, step by step, explaining his actions. There will be a hand out to the assessor where he can follow the work and make notes.		