

Roles defined

Team Leader

Facilitating the work of others and keeping the project on task
Maintain communication lines between team members and instructor

Lead Mechanic

Primary duties turning wrenches
Assisting with parts ordering
Communicating with team leader

Purchaser/Accountant

Identify suppliers, order and document price of parts and labor
Communicating with all group members

Researcher/Documentor

To write procedure, take pictures of disassembly and reassembly
Assist purchaser in locating parts and completing purchase orders

Subject: Final Project guidelines

Student Learning Objectives:

- Determine the cause of a non-running engine by using a diagnostic algorithm
- Identify the element(s) that are not present or out of tolerance
- Apply the skills and knowledge gained throughout course to make the engine function
- Thoroughly document troubleshooting, diagnosis and repair.

This should include an engine specification sheet, parts ordering, etc.

- Define the problem

Students are divided into small groups of no more than four (this will vary upon class size). Student groups will be given an unknown engine with unknown problems. Students will use resources provided to determine the issue for the non-running engine. Groups may request other resources, but must submit a request to the instructor.

- Name the main element which is preventing the engine from running.
 - There will be multiple issues
 - Compression
 - Fuel
 - Ignition
- Within those elements correctly name the components that are preventing the engine from running. Write out a procedure to fix the problem.
- For example, No Compression (give the PSI rating). The exhaust valve is stuck open.
- Procedure
 - Remove shroud and recoil
 - Remove exhaust system
 - Remove head bolts in sequence
 - Document where are parts have come from
 - Remove head gasket and mark orientation
- If a part is required it must be requested in written format to the instructor. The instructor will evaluate the necessity of the part and order at the discretion of the instructor.

There will be limited or no assistance from the instructor.

How will this be judged?

Students will complete a self and peer evaluation of their performance.

Does the engine run?

Communication (written and verbal documentation)

Students will also be assessed on the written and verbal communication.

This will include all correspondence requesting parts.

Communication between group members

Team work

How well did the team work together?

Were there issues that needed to be resolved by the instructor?

How did they complete their peer evaluation?

Wait until engine has cooled before performing maintenance

Procedure

Day 0 (Tuesday)

Leadership

Draft pick, Team selection

Roles identified documented (who does what)

Day 1 (Monday 27th Novemeber)

Introduction to the problem

Team member roles identified

A plan is formed and documented

Engine diagnostics begins

Engine disassembly and documentation (use your phones to take pictures)

Part identification and research for cheapest seller

Order parts if possible (through instructor)

Day2 (Tuesday)

Continue to diagnose problems and document

All parts must be ordered by the end of day 2

Day 3 (Wednesday)

Assembly should begin or continue

Last chance to order parts that were missed

Day 4 (Thursday)

Assembly continues

Begin to test engine

Day 5 (Friday)

Peer evaluations

Teams evaluations

Self evaluations

Donuts?

Engine type:

Model:

Serial number:

Shaft orientation:

Compression reading

- 1.
- 2.
- 3.

Spark test

Yes or NO

What type of ignition system does it have?

Breaker points?

SSI Solid State Ignition?

What type of carburetor does it have?

Up, down, natural draft?

What type of cooling system?

What type of engine is it?

2 stroke, 4 stroke

Depending on the issue, document what is wrong and what the procedure will be to fix it.

GROUP/PEER EVALUATION

You are being asked to complete this evaluation so that I can recognize the individual contributions of group members to the overall group project. Each group member can earn a possible 50 points. To help me determine your grade and assign these points, please provide me with information that evaluates the performance of your study group members and yourself. Keep in mind that the information you provide here is confidential and I shall not share this information with your group members. Below are the criteria to consider as you rate yourself and your group members. These criteria include:

Active Participation: Did your group member participate fully in the activity and put in effort to solve the problem?

Constructive Contribution: Being proactive in researching information about issue and providing quality research; fostering creativity; bringing unique skills and abilities that aid in the quality of the final products; and providing leadership

Supported Group Process: Eliciting, valuing, and respecting the viewpoints and input of others; making room for quiet members or not overshadowing others; mediating arguments and relieving tension; lending a positive attitude; and other maintenance roles that enhance group process and climate

Effective at their position: Checking in with group, clarifying expectations, keeping communication channels open among group members, facilitating others' participating, and speaking/listening effectively and respectfully

Commitment and Effort: Following through on assigned tasks, being accountable to group members, and working consistently to meet group expectations

Using each of the above criteria, provide a rating for yourself and each of your group members. Use the rating scale below. In the last column, we ask that you recommend a grade, for example, A, B-, C+, D, etc.

NAME	POINT SCALE					
	1-----2-----3-----4-----5-----6-----7-----8-----9-----10 (terrible) (fantastic)					
	Active Participatio n	Constructive Contribution	Supported Group Process	Communicatio n	Commitment and Effort	
Group member 1:						
Group member 2:						
Group member 3:						
Group member 4:						

SELF EVALUATION

You are being asked to complete this evaluation so that I can recognize the how you interpret your contributions to the overall group project. To help me determine your grade and assign these points, please provide me with information that evaluates the performance of yourself. Keep in mind that the information you provide here is confidential and I shall not share this information with your group members. Below are the criteria to consider as you rate yourself These criteria include

Active Participation: Did you actively participate in problem solving?

Constructive Contribution: Where there anytimes throughout the project when you did not contribute and actually were more of a hindrance to the project? Did you do nothing to stay out of the way?

Supported Group Process: Eliciting, valuing, and respecting the viewpoints and input of others; making room for quiet members or not overshadowing others; mediating arguments and relieving tension; lending a positive attitude; and other maintenance roles that enhance group process and climate

Communication: Checking in with group, clarifying expectations, keeping communication channels open among group members, facilitating others' participating, and speaking/listening effectively and respectfully

Commitment and Effort: Following through on assigned tasks, being accountable to group members, and working consistently to meet group expectations

Using each of the above criteria, provide a rating for yourself and each of your group members. Use the rating scale below. In the last column, we ask that you recommend a grade, for example, A, B-, C+, D, etc.

NAME	POINT SCALE					
	1-----2-----3-----4-----5-----6-----7-----8-----9-----10 (terrible) (fantastic)					
	Active Participatio n	Constructive Contribution	Supported Group Process	Communicatio n	Commitment and Effort	
Yourself:						