

Program : <b>Diploma in Automobile Engineering</b>	
Course Code : <b>5059B</b>	Course Title: <b>Farm Machinery and Construction equipment Lab</b>
Semester : <b>5</b>	Credits: <b>1.5</b>
Course Category: <b>Program Elective</b>	
Periods per week: <b>3 (L:0, T:0, P:3)</b>	Periods per semester: <b>45</b>

### Course Objectives:

- To select proper tools and equipment for servicing of tractors and construction equipment
- To identify various farm machinery, earth moving machinery and construction equipment
- To perform servicing of various farm machinery, earth moving machinery and construction equipment.

### Course Prerequisites:

Topic	Course code	Course name	Semester
Knowledge of Automobile engineering		Basic Automobile Engineering	2

### Course Outcomes:

On completion of the course, the student will be able to:

CO <sub>n</sub>	Description	Duration (Hours)	Cognitive Level
CO1	Apply the procedure of servicing agriculture tractor	12	Applying
CO2	Apply the procedure of fitting and adjustments of implements like plough, cultivator and power take off unit.	10	Applying
CO3	Identify various systems and sub systems of earth moving machinery	10	Applying
CO4	Make use of operation of various systems and sub systems of earth moving machinery	10	Applying
	Lab Exam	3	

**CO – PO Mapping:**

Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	3			2			
CO2	3			2			
CO3	3			2		2	2
CO4	3			2			

3-Strongly mapped, 2-Moderately mapped, 1-Weakly mapped

**Course Outline:**

Module Outcomes	Description	Duration (Hours)	Cognitive Level
CO1	<b>Apply the procedure of servicing agriculture tractor.</b>		
M1.01	Demonstrate the general layout, power transmission layout and operation of tractor.	4	Understanding
M1.02	Apply the procedure of overhauling tractor hydraulic system, pump control valve and remote cylinder.	6	Applying
M1.03	Plan the preventive maintenance schedule of tractor	2	Applying
CO2	<b>Apply the procedure of fitting and adjustments of implements like plough, cultivator and power take off (p.t.o) unit</b>		
M2.01	Demonstrate the working of implements like plough, cultivator and power take off (p.t.o)unit	5	Understanding
M2.02	Apply the procedure of Fitting and adjustment of implements like plough, cultivator and p.t.o. unit	5	Applying
	Lab Exam – I	1.5	
CO3	<b>Identify various systems and sub systems of earth moving machinery</b>		
M3.01	Demonstrate the general layout of various earth moving machinery.	5	Understanding
M3.02	Apply the procedure of servicing of earth moving machinery	5	Applying
CO4	<b>Make use of various systems and sub systems of construction equipment</b>		
M4.01	Demonstrate the general layout of various construction equipment	5	Understanding

M 4.02	Apply the procedure of servicing of construction equipment	5	Applying
	Open Ended Projects**		Applying
	Lab Exam – II	1.5	

**\*\* - Suggested Open Ended Projects**

(Not for End Semester Examination but compulsory to be included in Continuous Internal Evaluation. Students can do open ended experiments as a group of 2-3. There is no duplication in experiments between groups.

1. Develop a report on various mechanisms used, service procedure and cost of equipment after visiting a service centre of tractor or Dozer or Excavator or Road roller.
2. Develop a report on various operations of earth moving machinery after visiting a mine or construction site.

**Text / Reference:**

T/R	Book Title/Author
T1	Smith H. P. and L. H. Wilkes, Farm Machinery and Equipment, TATA McGraw Hill publication, New Delhi.
R1	Srivastava, A.C. Elements of Farm Machinery. Oxford and IBH Publication Company, New Delhi
R2	B Satyanarayana, Subhash Chandra Sexena, Construction planning and equipment, standard publishers and distributors, New Delhi
R3	S.C.Jain, C.T.Raj, Farm Tractor Maintenance and Repair, TATA MC Graw Hill.
R4	Jagdishwar Sahay Elements of Agricultural Engineering
R5	Nakra C.P, Farm machines and equipments, Dhanparai Publishing company

**Online Resources:**

Sl.No	Website Link
1	<a href="http://ecoursesonline.iasri.res.in/course/view.php?id=12">http://ecoursesonline.iasri.res.in/course/view.php?id=12</a>
2	<a href="https://www.youtube.com/watch?v=eYQV5GQPw">https://www.youtube.com/watch?v=eYQV5GQPw</a>
3	<a href="https://www.youtube.com/watch?v=9cWdiNFEa7w">https://www.youtube.com/watch?v=9cWdiNFEa7w</a>