THIAGARAJAR COLLEGE OF ENGINEERING - MADURAI 625 015
TCE-III

S.No	One credit course need analysis sheet	
1.	**Name of the Course**	G1L /14ME1F0 Industrial Hydraulics
2.	**Name of the Industry**	PMC Win star Hydraulics Ltd., Bangalore
3.	**Name of the SIG associated with**	Design
4.	**Motivation for offering the course**	
4.1	**Feedback (If yes, Details of the feedback as per the annexure I)**	
	From Recruiter	**N**
	From Employer	**N**
	From Alumni	**Y**
	From Academic Council members	**N**
	From Board of Studies members	**N**
	From Senior students	**N**
	From current students	**N**
	From Performance Assessment Committee	**N**
	From Department Advisory committee	**N**
4.2	**Faculty participation in Seminar/FDP (If yes, details) No**	
	At higher learning institutes	
	At Industry	
5.	**Outcomes expected**	
	Technology transfer	
	Student Internship	√
	Placement	√
	Organizing FDP/seminar at TCE	
	Collaborative research/consultancy projects	
	Faculty as Trainee/Trainer in the Industry	
	Joint publications	
	Setting up of Lab/Infrastructure	

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THIAGARAJAR COLLEGE OF ENGINEERING, MADURAI-15

(Govt. Aided Autonomous Institution Affiliated to Anna University)

Department of Mechanical Engineering

14ME1F0- Industrial Hydraulics – One credit Course Attendance

SL.NO.	REG. NO.	NAME	17.9.16 FN	17.9.16 AN	18.9.16 FN	19.9.16 AN
1.	14G03	N. ABINASH RAJ				
2.	14G04	T. ABISHEK				
3.	14G14	T. BHUVANESH SURIYA KUMAR				
4.	14G16	V.DEEPAK KUMAR				
5.	14G30	J. JEROME HUBERT				
6.	14G40	K. KISHORE				
7.	14G41	S. KITHER MOHAMED DASTHAKIR				
8.	14G51	A.MOHAMED ANSARUDEEN				
9.	14G56	C.K. NATARAJAN				
10.	14G59	B. NIRMAL JEFFREY				
11.	14G127	U.K. HARIRAM SAIT				
12.	14G130	T. KANAGARAJ				
13.	14G136	M. LAKSHMANAN				
14.	14G137	B. MAHESH				
15.	14G138	M. MANIKANDAN				
16.	14G142	E.K. SANJEEV				
17.	14G144	T. SIVABALAN				
18.	14G146	P. TAMILSELVAN				
19.	14G61	M. NISSHOK KUMAR				
20.	14G64	P. PRABHAKARAN				
21.	14G66	R. PRADEEP KUMAR				
22.	14G77	N. RANJITH				
23.	14G81	S. SADAIYANDI				
24.	14G82	R.C.P. SANKAR				
25.	14G83	K.G. SANKAR GANESH				
26.	14G84	M. SARAVANA BAVA				
27.	14G87	D. SATHIYA RAJAN				
28.	14G102	B. TAMILVANAN				
29.	14G105	C. THIRUMOOLASITHAR				
30.	14G106	N. VALLIAPPAN				
31.	14G109	M. VENKATESH				
32.	14G113	T.J. VIGNESHWARAN				
33.	14G116	M.S. VISHNU				
34.	14G123	S. BHARANEESWARAN				
35.	14G132	B. KARTHIKEYAN				
36.	13G68	S.RAM MAHESH				

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THIAGARAJAR COLLEGE OF ENGINEERING; MADURAI-625015.

Department of Mechanical Engineering

G1L-INDUSTRIAL HYDRAULICS

SL. NO	REG. NO	NAME	SEM/SEC	DATE			
				07-03-2015		08-03-2015	
				FN	AN	FN	AN
1.	12G22	DINESH,T.	VI/A				
2.	12G23	ELAIYA BHARATHI . E	VI/A				
3.	12G28	GOWTHAM,P.	VI/A				
4.	12G29	HAREESH,V.M	VI/A				
5.	12G43	KSHIRAPTHINATH,R.M	VI/A				
6.	12G48	MITHUN.P	VI/A				
7.	12G54	MUHILAN,T.	VI/A				
8.	12G58	NARASIMMA PANDIAN.R	VI/A				
9.	12G59	NARAYANAN.PL	VI/A				
10.	12G71	PUSHPARAJ,A.	VI/B				
11.	12G81	RAVIPRASANTH,S.	VI/B				
12.	12G98	SRINIVASAN,S.G	VI/B				
13.	12G108	UTHAYAKUMAR,K.	VI/B				
14.	12G112	VIGNESH,G.	VI/B				
15.	12G123	VIVEK ANAND,M.	VI/B				
16.	13LG22	TIRUPPATHI,S.	VI/A				
17.	13LG23	VELMURUGAN,S.	VI/A				
18.	13 LG17	SANTHOSHKUMAR. S	VI/B				
19.	12G 82	SABARINATH .T	VI/B				
20.	12G89	SARAVANPERUMAL.H	VI/B				
21.	12G90	SATEESH.T	VI/B				
22.	12G110	VELVARADHAN	VI/B				
23.	12G84	SAKTHIVEL.P	VI/B				
24.	12G69	PRIYADHARSHAN .B	VI/A				
25.	12G 15	CHIDAMBARAM.S	VI/B				
26.	13LG20	SUBRAMANIAN.M	VI/B				
27.	12G86	SANJAI KUMAR.M	VI/B				
28.	12G102	SURESH .N	VI/A				
29.	12G47	MARIYYAPPAN .K					

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THIAGARAJAR COLLEGE OF ENGINEERING - MADURAI 625 015

TCE-III

Course Schedule

Name of the Course: G1L /14ME1F0 Industrial Hydraulics

Name of the Industry: PMC Win star Hydraulics Ltd., Bangalore

Name of the Expert: Mr. Ramrahunathan

Number of Students enrolled 36+ 29

Name of the Faculty Dr. M Elango

Date/Time/Venue: 17/9/16 , 18/9/16 and 7/3/2015, 8/3/2015 , Mech Seminar Hall ,

Date	Time	Topics	Remarks
Day1	9.00 am to 11.00 am	Types of fluid power systems- Method of power transmission Application areas - Basic Symbol Types -Energy Transmission- Pumps –Motors- Directional Control Valves-Pressure Valves-Flow control Valves-Actuation Methods-Measuring devices- Cylinders- Energy Storage device	
	11.10am to 1.10 pm	Actuators- Function of reservoir-Atmospheric Vented-Pressurized-Stationary –Mobile Typical Cross section- Pump-Positive Displacement Vs Non Positive Displacement type-Gear-Vane- Piston-Screw-Internal Gear Pump -Principle / Construction –Operation--Advantages / Limitations-Flow , Pressure range-Cost and Brands --Preferred Application Areas –External Gear Pump , Vane Pump ,Axial Piston Pump ,Radial Piston Pump ,Screw pump- Control	
	1.30 pm to 3.20 pm	- Hybrid or combined circuits-Servo / Proportional valves- Accessories- Reservoir-Pump - Prime Mover-Safety / Control Valves-Measuring gauges- valves for hydraulics –function types – flow / pressure / direction; Actuation types – mechanical / electrical / pneumatic –design, working and use of variants in each function type. Proportional and servo technology – advantages - differences between conventional valves / proportional valves / servo valves – typical application areas- Fluid contamination control	
	3.30 pm to 5.00 pm	importance of clean fluid – key factor affecting reliability - evaluating cleanliness level – Setting target cleanliness levels – design philosophies to achieve and maintain the set target levels – filter	

		types, element designs and criteria to select like Beta ratio- Mobile hydraulics –\	
Day2	9.00 am to 11.00 am	Special requirements – Reservoir design – Types of control valves – Hydraulic Power steering – Construction equipments. Selection criteria for components for hydraulic circuits – Application based – Cost based and working environment	
	11.10am to 1.10 pm	Complete design of a typical industrial hydraulic system for an automatic drilling machine – define requirement and constraints – arrive at required power –	
	1.30 pm to 3.20 pm	design the circuit – choose the Bill Of Material – finalize design- Hydraulics controlled by PLC / PC – Typical set up details – Types of sensors – Solenoids – Preferred software	
	3.30 pm to 5.00 pm	platforms for control coding- Troubleshooting hydraulics – standard tools – logical approach – preventive maintenance.	

M. Elanger

Signature of the Faculty coordinator

Course Instructor Feedback for One/Two credit course

TCE-III

Name of the Course: G1L /14ME1F0 Industrial Hydraulics

Name of the Industry: PMC Win star Hydraulics Ltd., Bangalore

Name of the Expert: Mr. Ramrahunathan

Date/Time/Venue: 17/9/16, 18/9/16 and 7/3/2015, 8/3/2015 , Mech Seminar Hall ,

	Comments
Student attendance	All the enrolled students attended with fail
Level of the students in understanding the concepts	Design of hydraulic circuit for wind turbine
Any suggestions regarding new content to be included as Prerequisites/Special electives	Some more industrial application can be included as case study
Hall/Lab arrangements	good
Hospitality	The expert stay in hotel arthi Madurai. But he want more facility next time.

M. Elanger

Signature of the Course Instructor