



THIAGARAJAR COLLEGE OF ENGINEERING - MADURAI 625 015
TCE-III

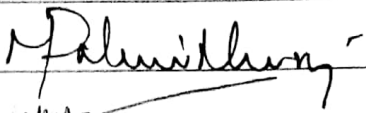
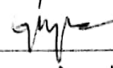
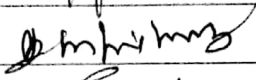
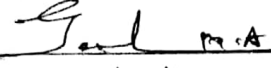
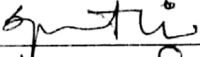
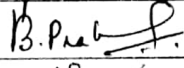
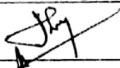

S.No	One/Two credit course need analysis sheet	
1.	Name of the Course	Reliability for Mechatronics Systems
2.	Name of the Industry	Ingersoll Rand Engineering and Technology Center, India
3.	Name of the SIG associated with	IoT & Automation
4.	Motivation for offering the course	Importance of Reliability required for the Mechatronics Systems motivated to offer the course
4.1	Feedback (If yes, Details of the feedback as per the annexure I)	
	From Recruiter	N
	From Employer	N
	From Alumni	N
	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)	
	At higher learning institutes	-
	At Industry	-
5.	Outcomes expected	
	Technology transfer	Y
	Student Internship	-
	Placement	-
	Organizing FDP/seminar at TCE	Y
	Collaborative research/consultancy projects	Y
	Faculty as Trainee/Trainer in the Industry	-
	Joint publications	-
	Setting up of Lab/Infrastructure	Y

P. D. K.

AGENDA FOR THE MEETING

Name of the meeting : New industry supported two credit course
Date of the meeting : 01-November-17
Time : 3.00 pm
Duration : 30 mts
Venue : Modelling and Simulation Lab

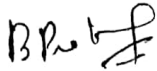
Attended by:

Faculty Members	Signature
Dr.M.Palaninatharaja	
Dr.G. Kumaraguruparan	
Dr.L.R.Karl Marx	
Mr.M.A.Ganesh	
Mr.S.Parthasarathy	
Mr.B.Praveen Kumar	
Mr.A.Prakash	
Mr.S.A.R.Sheik Masthan	

Points to be discussed :

1. Gap analysis on core/elective courses
2. Identification of two credit course and industry experts

Prepared by Mr.B.Praveen Kumar



Approved by (HOD).....



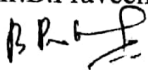
QR/M5-01 (01) 20-09-2004

MINUTES OF THE MEETING

Date of the meeting : 01-Nov-2017
 Name of the meeting : New industry supported two credit course

Sl. No.	Points discussed	Action plan	Responsibility	Target date
1.	Mechatronics Engineering has Programme core courses like Mechatronics System Design (VI Sem) Robotics (VI Sem) CNC Technology(V Sem)	-	-	-
2.	Gap Analysis: Reliability for mechatronics systems has to be introduced to the Mechatronics Engineering students	Industry supported courses may be organized for the students	-	-
3.	Identification of industry: Experts can be identified from the industries like Ingersoll Rand Engineering and Technology Center, Sameer Electronics Chennai, Data Patterns who works in Reliability Engineering.	Resource person identified: Mr. Parameswaran Narayanan, Director – Performance Management & India Leader, Ingersoll Rand Engineering and Technology Center, Bangalore	Dr.G.Kumaraguruparan & Mr.B.Praveen Kumar	-
4.	Syllabus design for the course • Reliability for Mechatronics Systems in support with Ingersoll Rand Engineering and Technology Center, Bangalore	Syllabus needs to be designed and passed in BoS/ACM	Dr.G.Kumaraguruparan & Mr.B.Praveen Kumar	16- Dec - 2017

Prepared by Mr.B.Praveen Kumar



Date 09.11.2017 Approved by  Date... 10/11/17...


THIAGARAJAR COLLEGE OF ENGINEERING - MADURAI 625 015
TCE-III
Department of Mechatronics Engineering
Attendance sheet for the Two credit course
Name of the Course: 14MT2A0 – Reliability for Mechatronics Systems

Name of the Industry: Ingersoll Rand Engineering and Technology Center, India.

Name of the Expert: Mr. N. Parameswaran

Number of Students enrolled: 58

Name of the Faculty: Dr. G. Kumaraguruparan & Mr. B. Praveen Kumar

Date/Time/Venue: 20.01.2018 & 21.01.2018, (9.30 A.M to 5.00 P.M), Seminar Hall, Department of Mechanical Engineering

S.No	Reg.No	Name	20.01.2018		21.01.2018	
			FN	AN	FN	AN
1	15F002	AJITH KUMAR,P.D.	P.D.Ajith	P.D.Ajith	P.D.Ajith	P.D.Ajith
2	15F004	ANDREW KIRUBSINGH,P	Andrew	Andrew	Andrew	Andrew
3	15F006	ARUN PANDIAN,R.	R.Arun	R.Arun	R.Arun	R.Arun
4	15F007	ASWIN GURUBARAN,A.	A.Swin	A.Swin	A.Swin	A.Swin
5	15F008	BALA HARISH,S.	BalaHarish	BalaHarish	BalaHarish	BalaHarish
6	15F009	BALA SUBRAMANI,V.P	V.P.Bala	V.P.Bala	V.P.Bala	V.P.Bala
7	15F010	CHENDUR RAKESH,J.	J.Chendur	J.Chendur	J.Chendur	J.Chendur
8	15F011	DEEPAK,S.	S.Deepak	S.Deepak	S.Deepak	S.Deepak
9	15F013	DHIVYA,S.	S.Dhivya	S.Dhivya	S.Dhivya	S.Dhivya
10	15F014	GAYATHRI,M.	M.Gayathri	M.Gayathri	M.Gayathri	M.Gayathri
11	15F015	GIRISRINI,R.B.	R.B.Girish	R.B.Girish	R.B.Girish	R.B.Girish
12	15F016	GOWTHAM,N.V.	N.V.Gowtham	N.V.Gowtham	N.V.Gowtham	N.V.Gowtham
13	15F017	GOWTHAM,S.	S.Gowtham	S.Gowtham	S.Gowtham	S.Gowtham
14	15F018	GURU PRASAD,B.	B.Guruprasad	B.Guruprasad	B.Guruprasad	B.Guruprasad
15	15F019	HARI PRASANTH,S.M. O-D	—	H.Prasanth	H.Prasanth	H.Prasanth
16	15F020	HARISH, R. O-D	—	R.Harish	R.Harish	R.Harish
17	15F022	KARANJAN,R.	R.Karanjan	R.Karanjan	R.Karanjan	R.Karanjan
18	15F023	KARTHICK, T.	T.Karthick	T.Karthick	T.Karthick	T.Karthick
19	15F024	KARUNAMOORTHY,S.	S.Karunamoorthy	S.Karunamoorthy	S.Karunamoorthy	S.Karunamoorthy
20	15F025	KESAVAN,R.	R.Kesavan	R.Kesavan	R.Kesavan	R.Kesavan
21	15F026	KRISHNAKUMAR,R.	R.Krishna	R.Krishna	R.Krishna	R.Krishna
22	15F028	MUGUNDAN,V.	V.Mugundan	V.Mugundan	V.Mugundan	V.Mugundan
23	15F029	MUHAMED AASHIQ, M. O-D	—	M.Aashiq	M.Aashiq	M.Aashiq
24	15F030	MUTHU ALAZHI,SP.	S.P.Muthu	S.P.Muthu	S.P.Muthu	S.P.Muthu
25	15F032	NAVEEN RAJ,B.	B.Naveen	B.Naveen	B.Naveen	B.Naveen
26	15F033	PRADHEEP KUMAR,R.	R.Pradheep	R.Pradheep	R.Pradheep	R.Pradheep
27	15F035	PRITHVISARAN,S.	S.Prithvi	S.Prithvi	S.Prithvi	S.Prithvi
28	15F036	RAGUL PRASAD,M. O-D	—	M.Ragul	M.Ragul	M.Ragul
29	15F037	RAJARAJAN,T.	T.Rajarajan	T.Rajarajan	T.Rajarajan	T.Rajarajan
30	15F039	RUTHIRAN,P.	P.Ruthira	P.Ruthira	P.Ruthira	P.Ruthira

S.No	Reg.No	Name	20.01.2018		21.01.2018	
			FN	AN	FN	AN
31	15F040	SANTHOSH KUMAR,S.	<i>S. Santosh</i>	<i>S. Santosh</i>	<i>S. Santosh</i>	<i>S. Santosh</i>
32	15F041	SARANYA,M.A.	<i>M.A. Saranya</i>	<i>M.A. Saranya</i>	—	—
33	15F044	SATHESH,M.	<i>M. Sathesh</i>	<i>M. Sathesh</i>	<i>M. Sathesh</i>	<i>M. Sathesh</i>
34	15F045	SELVARAJ,M.	<i>M. Selvaraj</i>	<i>M. Selvaraj</i>	<i>M. Selvaraj</i>	<i>M. Selvaraj</i>
35	15F046	SENTHILKUMAR,U.	<i>U. Senthil Kumar</i>	<i>U. Senthil Kumar</i>	—	—
36	15F047	SHEIK NAVEEDH,A.	<i>A. Naveedh</i>	<i>A. Naveedh</i>	<i>A. Naveedh</i>	<i>A. Naveedh</i>
37	15F049	SHYAMKUMAR,A.	<i>A. Shyam Kumar</i>	<i>A. Shyam Kumar</i>	<i>A. Shyam Kumar</i>	<i>A. Shyam Kumar</i>
38	15F051	SRI SAI SURYA,P.	<i>P. Sri Sai Surya</i>	<i>P. Sri Sai Surya</i>	<i>P. Sri Sai Surya</i>	<i>P. Sri Sai Surya</i>
39	15F053	SUNDHARAKRISHNAN,K.R.	<i>K.R. Sundharakrishnan</i>	<i>K.R. Sundharakrishnan</i>	<i>K.R. Sundharakrishnan</i>	<i>K.R. Sundharakrishnan</i>
40	15F054	TAMILMARAN, S.	<i>S. Tamilmaran</i>	<i>S. Tamilmaran</i>	<i>S. Tamilmaran</i>	<i>S. Tamilmaran</i>
41	15F055	THANGA PATHHMA,M.J.	<i>M.J. Thanga Pathma</i>	<i>M.J. Thanga Pathma</i>	<i>M.J. Thanga Pathma</i>	<i>M.J. Thanga Pathma</i>
42	15F056	THILAK PRANAL,N.	<i>N. Thilak Pranal</i>	<i>N. Thilak Pranal</i>	<i>N. Thilak Pranal</i>	—
43	15F057	VIGNESH ANAND,P.	<i>P. Vignesh Anand</i>	<i>P. Vignesh Anand</i>	<i>P. Vignesh Anand</i>	—
44	15F058	VIGNESH,P.	<i>P. Vignesh</i>	<i>P. Vignesh</i>	<i>P. Vignesh</i>	—
45	15F059	VIJAY,C.	<i>C. Vijay</i>	<i>C. Vijay</i>	<i>C. Vijay</i>	<i>C. Vijay</i>
46	15F060	AAMEER KHAN,I.	<i>I. Aameer Khan</i>	<i>I. Aameer Khan</i>	<i>I. Aameer Khan</i>	<i>I. Aameer Khan</i>
47	15F061	AKASH,A.	<i>A. Akash</i>	<i>A. Akash</i>	<i>A. Akash</i>	<i>A. Akash</i>
48	15F062	ARAVINDHAN,K.	<i>K. Aravindhan</i>	<i>K. Aravindhan</i>	<i>K. Aravindhan</i>	<i>K. Aravindhan</i>
49	15F063	BALASUBRAMANIAN,M.	<i>M. Balasubramanian</i>	<i>M. Balasubramanian</i>	<i>M. Balasubramanian</i>	<i>M. Balasubramanian</i>
50	15F064	JAYASURIYA,K.	<i>K. Jayasuriya</i>	<i>K. Jayasuriya</i>	<i>K. Jayasuriya</i>	<i>K. Jayasuriya</i>
51	15F065	KAMESHWARAN,R.	<i>R. Kameshwaran</i>	<i>R. Kameshwaran</i>	<i>R. Kameshwaran</i>	<i>R. Kameshwaran</i>
52	15F066	KARTHEESWARAN,M.	<i>M. Kartheeswaran</i>	<i>M. Kartheeswaran</i>	<i>M. Kartheeswaran</i>	<i>M. Kartheeswaran</i>
53	15F067	KISHORE,S.	<i>S. Kishore</i>	<i>S. Kishore</i>	<i>S. Kishore</i>	<i>S. Kishore</i>
54	15F068	MADHAVAN,M.	<i>M. Madhavan</i>	<i>M. Madhavan</i>	<i>M. Madhavan</i>	<i>M. Madhavan</i>
55	15F070	MOHAN RAM,G.	<i>G. Mohan Ram</i>	<i>G. Mohan Ram</i>	<i>G. Mohan Ram</i>	<i>G. Mohan Ram</i>
56	15F071	PANDIYA RAJAN,A.	—	—	<i>A. Pandiya Rajan</i>	<i>A. Pandiya Rajan</i>
57	15F072	SHRITHAR,S.	<i>S. Shrithar</i>	<i>S. Shrithar</i>	<i>S. Shrithar</i>	<i>S. Shrithar</i>
58	14F24	KANAGALAKSHMI,V.	<i>V. Kanagalakshmi</i>	<i>V. Kanagalakshmi</i>	<i>V. Kanagalakshmi</i>	<i>V. Kanagalakshmi</i>

G. Suresh
Signature of the Faculty Coordinator



THIAGARAJAR COLLEGE OF ENGINEERING - MADURAI 625 015
TCE-III
Department of Mechatronics Engineering

Attendance sheet for the Two credit course

Name of the Course: 14MT2A0 – Reliability for Mechatronics Systems

Name of the Industry: Ingersoll Rand Engineering and Technology Center, India.

Name of the Expert: Mr. N. Parameswaran

Number of Students enrolled: 58

Name of the Faculty: Dr. G. Kumaraguruparan & Mr. B. Praveen Kumar

Date/Time/Venue: 03.02.2018 & 04.02.2018, (9.30 A.M to 5.00 P.M), Seminar Hall,
 Department of Civil Engineering

S.No	Reg.No	Name	03.02.2018		04.02.2018	
			FN	AN	FN	AN
1	15F002	AJITH KUMAR,P.D.	P.D. Anuj	P.D. Anuj	P.D. Anuj	P.D. Anuj
2	15F004	ANDREW KIRUBSINGH,P	Andrew	Andrew	A	Andrew
3	15F006	ARUN PANDIAN,R.	R Arun	R Arun	R Arun	A
4	15F007	ASWIN GURUBARAN,A.	Aswin	Aswin	Aswin	Aswin
5	15F008	BALA HARISH,S.	A	Bala Harish	Bala Harish	A
6	15F009	BALA SUBRAMANI,V.P	V.P. Balu	V.P. Balu	V.P. Balu	A
7	15F010	CHENDUR RAKESH,J.	Chendur Rakesh	Chendur Rakesh	A	Chendur Rakesh
8	15F011	DEEPAK,S.	S. Deepak	S. Deepak	S. Deepak	A
9	15F013	DHIVYA,S.	S. Dhivya	S. Dhivya	S. Dhivya	S. Dhivya
10	15F014	GAYATHRI,M.	M. Gayathri	M. Gayathri	M. Gayathri	M. Gayathri
11	15F015	GIRISRINI,R.B.	R.B. Girish	R.B. Girish	R.B. Girish	R.B. Girish
12	15F016	GOWTHAM,N.V.	N.V. Gowtham	N.V. Gowtham	N.V. Gowtham	N.V. Gowtham
13	15F017	GOWTHAM,S.	S. Gowtham	S. Gowtham	S. Gowtham	A
14	15F018	GURU PRASAD,B.	B. Gurusamy	B. Gurusamy	B. Gurusamy	B. Gurusamy
15	15F019	HARI PRASANTH,S.M.	S.M. Hari Prasad	S.M. Hari Prasad	S.M. Hari Prasad	A
16	15F020	HARISH, R.	R. Harish	R. Harish	R. Harish	R. Harish
17	15F022	KARANJAN,R.	A	R. Karanjana	R. Karanjana	A
18	15F023	KARTHICK, T.	T. Karthick	T. Karthick	T. Karthick	T. Karthick
19	15F024	KARUNAMOORTHY,S.	S. Karunamoorthy	S. Karunamoorthy	S. Karunamoorthy	S. Karunamoorthy
20	15F025	KESAVAN,R.	R. Kesava	R. Kesava	R. Kesava	R. Kesava
21	15F026	KRISHNAKUMAR,R.	A	R. Krishna	R. Krishna	A
22	15F028	MUGUNDAN,V.	V. Mugundan	V. Mugundan	V. Mugundan	A
23	15F029	MUHAMED AASHIQ, M.	M. Ashiq	M. Ashiq	M. Ashiq	M. Ashiq
24	15F030	MUTHU ALAZHI,SP.	S.P. Muthu	S.P. Muthu	S.P. Muthu	S.P. Muthu
25	15F032	NAVEEN RAJ,B.	B. Naveen	B. Naveen	A	A
26	15F033	PRADHEEP KUMAR,R.	R. Pradeep	R. Pradeep	R. Pradeep	R. Pradeep
27	15F035	PRITHVISARAN,S.	S. Prithvi	S. Prithvi	A	S. Prithvi

S.No	Reg.No	Name	03.02.2018		04.02.2018	
			FN	AN	FN	AN
✓ 28	15F036	RAGUL PRASAD,M.	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>
✓ 29	15F037	RAJARAJAN,T.	T. Rajarajan	T. Rajarajan	T. Rajarajan	T. Rajarajan
✓ 30	15F039	RUTHIRAN,P.	Ruthy	Ruthy	- A -	Ruthy
✓ 31	15F040	SANTHOSH KUMAR,S.	S. Santosh	S. Santosh	✓ S. Santosh	S. Santosh
✓ 32	15F041	SARANYA,M.A.	M.A. Saranya	M.A. Saranya	✓ M.A. Saranya	M.A. Saranya
✓ 33	15F044	SATHESH,M.	M. Sathesh	M. Sathesh	✓ M. Sathesh	M. Sathesh
✓ 34	15F045	SELVARAJ,M.	W. Selvaraj	W. Selvaraj	W. Selvaraj	- A -
✓ 35	15F046	SENTHILKUMAR,U.	U. Senthil Kumar	U. Senthil Kumar	U. Senthil Kumar	U. Senthil Kumar
✓ 36	15F047	SHEIK NAVEEDH,A.	A. Sheik Naveedh	A. Sheik Naveedh	✓ A. Sheik Naveedh	A. Sheik Naveedh
✓ 37	15F049	SHYAMKUMAR,A.	A. Shyam Kumar	A. Shyam Kumar	✓ A. Shyam Kumar	A. Shyam Kumar
✓ 38	15F051	SRI SAI SURYA,P.	P. Sri Sai Surya	P. Sri Sai Surya	✓ P. Sri Sai Surya	- A -
✓ 39	15F053	SUNDHARAKRISHNAN,K.R.	K.R. Sundharakrishnan	K.R. Sundharakrishnan	K.R. Sundharakrishnan	K.R. Sundharakrishnan
✓ 40	15F054	TAMILMARAN, S.	S. Tamilmaran	S. Tamilmaran	- A -	- A -
④1	15F055	THANGA PATHHMA,M.J.	A	A	- A -	- A -
✓ 42	15F056	THILAK PRANAL,N.	N. Thilak Pranal	N. Thilak Pranal	- A -	N. Thilak Pranal
✓ 43	15F057	VIGNESH ANAND,P.	P. Vignesh Anand	P. Vignesh Anand	- A -	P. Vignesh Anand
✓ 44	15F058	VIGNESH,P.	P. Vignesh	P. Vignesh	✓ P. Vignesh	- A -
✓ 45	15F059	VIJAY,C.	C. Vijay	C. Vijay	✓ C. Vijay	- A -
✓ 46	15F060	AAMEER KHAN,I.	I. Aameer Khan	I. Aameer Khan	I. Aameer Khan	I. Aameer Khan
✓ 47	15F061	AKASH,A.	A. Akash	A. Akash	A. Akash	A. Akash
✓ 48	15F062	ARAVINDHAN,K.	K. Aravindh	K. Aravindh	✓ K. Aravindh	K. Aravindh
✓ 49	15F063	BALASUBRAMANIAN,M.	M. Balasubramanian	M. Balasubramanian	✓ M. Balasubramanian	M. Balasubramanian
✓ 50	15F064	JAYASURIYA,K.	K. Jayasuriya	K. Jayasuriya	✓ K. Jayasuriya	K. Jayasuriya
⑤1	15F065	KAMESHWARAN,R.	- A -	R. Kameshwar	R. Kameshwar	- A -
✓ 52	15F066	KARTHEESWARAN,M.	M. Kartheeswaran	M. Kartheeswaran	✓ M. Kartheeswaran	M. Kartheeswaran
✓ 53	15F067	KISHORE,S.	S. Kishore	S. Kishore	✓ S. Kishore	S. Kishore
✓ 54	15F068	MADHAVAN,M.	M. Madhavan	M. Madhavan	- A -	- A -
⑤5	15F070	MOHAN RAM,G.	- A -	- A -	- A -	- A -
✓ 56	15F071	PANDIYA RAJAN,A.	A. Pandiya Rajan	A. Pandiya Rajan	✓ A. Pandiya Rajan	A. Pandiya Rajan
✓ 57	15F072	SHRITHAR,S.	S. Shrithar	S. Shrithar	✓ S. Shrithar	- A -
✓ 58	14F24	KANAGALAKSHMI,V.	V. Kanagalakshmi	V. Kanagalakshmi	✓ V. Kanagalakshmi	V. Kanagalakshmi

[Signature]
Signature of the Faculty Coordinator



THIAGARAJAR COLLEGE OF ENGINEERING - MADURAI 625 015
TCE-III

Course Schedule

Name of the Course: 14MT2A0 – Reliability for Mechatronics Systems

Name of the Industry: Ingersoll Rand Engineering and Technology Center, India.

Name of the Expert: Mr. N. Parameswaran

Number of Students enrolled: 58

Name of the Faculty: Dr. G. Kumaraguruparan & Mr. B. Praveen Kumar

Date/Time/Venue: 20.01.2018, 21.01.2018, 03.02.2018 & 04.02.2018 (9.30 A.M to 5.00 P.M), Seminar Hall, Department of Mechanical Engineering

Date	Time	Topic
20.01.2018	9.00 – 11.00	Conceptual understanding of Reliability
	11.15 – 1.00	Sharing the practical experience on several products
	2.00 – 4.00	Group activity – Developing histogram for the given tasks
	4.15 – 5.30	Basics of probability
21.01.2018	9.00 – 11.00	Physics of failure and Reliability
	11.15 – 1.00	Combination & permutation and analysis of reliability
	2.00 – 4.00	Probability distribution functions
	4.15 – 5.30	Gaussian and Weibull distribution
03.02.2018	10.00-11.30	Recollected the definition of reliability, Problem Review, Mathematical aspects and Weibull distribution
	11.45-1.30	Reliability Prediction
	2.00 – 4.00	Failure Theory
	4.15 – 5.30	Test Analysis, FMEA, parts count, PUGH matrix rerating.
04.02.2018	9.00 – 11.00	Assignment Review & Answers discussed (Test analysis)
	11.15 – 1.00	Reliability Demonstration
	2.00 – 4.00	Revision of previous year question paper, problems and asking doubt.


Signature of the Faculty Coordinator



THIAGARAJAR COLLEGE OF ENGINEERING - MADURAI 625 015
TCE-III

Course Instructor Feedback for Two credit course

Name of the Course: 14MT2A0 – Reliability for Mechatronics Systems


Name of the Industry: Ingersoll Rand Engineering and Technology Center, India


Name of the Expert: Mr. N. Parameswaran

Date/Time/Venue: 20.01.2018, 21.01.2018, 03.02.2018 & 04.02.2018, (9.30 A.M to 5.00 P.M), Seminar Hall, Department of Mechanical Engineering & Civil Engineering

	Comments
Student attendance	Students cooperated well & attended
Level of the students in understanding the concepts	Students are interested in knowing more things in a superficial manner.
Any suggestions regarding new content to be included as Prerequisites/Special electives	Definitely, based on the experience, interaction, suggestion by ITO, this course will be made more interactive and learning oriented by tweaking syllabus
Hall/Lab arrangements	Good Conference room.
Hospitality	Excellent hospitality provided to me

*tweaking
syllabus
appropriate*


 Signature of the Course Instructor
 PARAMESWARAN, N.


 Signature of Head of the Department