

**COURSE HANDOUT AND GUIDELINES**

**FOR**

**BITS G540 RESEARCH PRACTICE**



**BITS Pilani**  
Pilani Campus

**BIRLA INSTITUTE OF TECHNOLOGY AND SCIENCE PILANI, PILANI CAMPUS**

**January 2015**

### CALENDAR OF EVENTS

I Sem.	II Sem.	Item	From	To
<b>AUG 16</b>	<b>JAN 22</b>	<b>TS-1 Form</b>	<b>Student</b>	<b>Head of Department</b>
OCT 08	MAR 15	Mid. Semester written report and presentation	Student	Supervisor
<b>OCT 08</b>	<b>MAR 15</b>	<b>Mid. Semester Grader</b>	<b>Supervisor</b>	<b>Head of Department</b>
NOV 28	APR 30	Final RESEARCH PRACTICE Report submission and Final viva	Student	Supervisor
<b>Dec 1 - 8</b>	<b>May 3-10</b>	<b>Final Evaluation Form</b>	<b>Supervisor</b>	<b>Head of Department</b>

Note:

1. If any of the above date happens to be a Sunday or a holiday, the immediate next date will be the calendar date. FINAL RESEARCH PRACTICE REPORT should invariably be submitted on or before the above mentioned date.
2. Student should ensure with his supervisor that the Mid-semester grade and the Final Evaluation form are sent to the Head of Department by the due date
3. The time and venue of Seminars is to be fixed by the Supervisor
4. The final viva-voce examination is to be held as per the Calendar of Events above. Students should invariably submit final report on or before the above mentioned dates
5. Specified formats of the Cover/Title page and certificate from the supervisor should be adhered to in the preparation of final report. Attention should be given to the items in the checklist for preparation of the report.

**BIRLA INSTITUTE OF TECHNOLOGY AND SCIENCE PILANI, PILANI CAMPUS**

**FIRST/SECOND SEMESTER**

**COURSE HANDOUT: BITS G540: RESEARCH PRACTICE**

**1. Aims and Objectives**

This course aims at training the higher degree students towards acquiring competence in research methodologies, writing research reports / proposals, teaching, enhancing experimental/ laboratory skills, providing opportunities for involvement in laboratory/ course development activities and such other related professional knowledge/skills

**2. Scope of the Course**

The course broadly covers following aspects:

- (i) Research proposal
- (ii) Development related activities
- (iii) Research related activities

The 25% weightage would be for the project proposal, which the student would be required to write, based on the skills acquired.

For developmental activities, which carry 25% weightage, the supervisor would assign to the student working with him an appropriate developmental work, which can be related to Centers/ Laboratories/ Assistance in course development or in the R&D activities of the supervisor. The student would have the teaching/research skills by assisting the supervisor in teaching, evaluation and research activities of the supervisor.

Under the research related activities, which carries 50% weightage, a broad topic of research will be assigned to the higher degree student by the Supervisor and the student would conduct literature search in the specified area, learn various research methodologies/ techniques for data collection and data analysis, testing techniques/ methods etc and deliver seminars in his/her research area to the supervisor. The student should also write research reports that along with the seminar/viva would form part of evaluation component related to research related activities.

**3. Operational Details**

1. Within 2 weeks of registration, the student should prepare the work plan (research proposal) for his research project and also for the developmental activities in consultation with the supervisor.

2. Mid semester grading will be done by the supervisor based on the work done and progress made towards planned objectives by the student in the assigned research area. The student is required to submit mid semester report describing the work done and progress made by him. He should also deliver a seminar to highlight these activities. Supervisors will grade the student for mid semester on the basis of the mid semester report described above and the Seminar presented by the student.

3. The student should submit mid-semester report in the 9<sup>th</sup> week of the semester to the supervisor and this should be followed by seminar/presentation by the student. The supervisor in turn is required to send mid-semester grades of all the students working with him to Head of Department by the end of 9<sup>th</sup> week of the semester.

4. End semester report would provide details of work done by the student. End semester report should be submitted to the supervisor and should be followed by seminar/presentation.

5. Every student would write a research proposal. This research proposal would form a part of the final (end semester) report. The research proposal carries 25% weightage and should be written in the proper format i.e. (i) Topic of Research (ii) Background and current status of research work in the area as evident from the literature search/review, (iii) scope of the proposed research work, (iv) methodology (v) work plan and time schedule (vi) references and bibliography. The references and bibliography should be written in standard format and should be cited within the text of the research proposal.

#### 4. Evaluation Scheme

Component	Indicators	Weightage
1. Research Proposal	Format	05
	Contents and Presentation	20
2. Development related Activities	Report ( 5+10)	15
	Viva/presentation (5+5)	10
3. Research related activities	Reports (10 for mid and 20 for end semester)	30
	Seminar/presentation/viva (5 for Mid and 15 for end semester)	20
Total		100

The concerned supervisor will announce mid-semester grade to the student sometime in the 9<sup>th</sup> week of the semester. The supervisor should submit the mid-semester evaluation form to Head of Department by the end of 9<sup>th</sup> week of the semester.

#### 5. Course Notices

Notices pertaining to this course will be displayed on Department/ARD Notice Board.

#### 6. General

Part – 1 of the Handout should also be consulted.

#### Check List of Items for Final Report of Research practice

1. Is the Report's 'Cover/Title page' in proper format?
2. Is 'Supervisor's Certificate' in proper format? Has it been signed?
3. Is 'Abstract' included in the Report? Is it in properly written?
4. Does the 'Table of Contents' page include chapter page numbers?
5. Does the Report contain a summary of the literature survey?
6.
  - (a) Are the Pages numbered properly?
  - (b) Are the Figures numbered properly?
  - (c) Are the Tables numbered properly?
  - (d) Are the Figures and tables titled properly?
  - (e) Are the Appendices numbered?
7. Does the Report have 'Conclusion' of the work?
8. Are References/Bibliography given in the Report?
9. Have the 'References' been cited in the Report?
10. Is the citation of 'References and Bibliography' in the standard format?

Attention should be paid on the above items while preparing the FINAL REPORT. Supervisors are also requested to ensure that their candidate(s) have prepared the FINAL REPORT properly.

### Illustrative Examples of Citation of References:

1.	Book: A. Gelb, Applied Optimal Estimation. Cambridge, M.A.; M.I.T. Press, 1974
2.	A paper in Conference or Symposium Proceedings edited Published by Book Company: R.E. Kalman, 'New Methods in Wiener filtering theory', in Proc. First Symposium on Engineering Applications of Random Function Theory and Probability' J.L. Bogdanoff and F. Kozin, Eds. New York, Wiley, 1963, pp. 270-388
3.	A Journal Paper: R.E. Kalman and N.S. Pucy, 'New results in linear filtering and prediction theory', Trans. ASME, J.Basic Eng., Vol. 83-D, pp. 95-108, Mar. 1961
4.	A Conference Paper: M. Vidyasagar and N.K. Bose, 'Input-output stability of linear systems defined over measure spaces', in Proc. Midwest Symp. Circ. Syst., Montreal, P.O. Canada, Aug. 1975, pp 394-397
5.	A Ph.D. dissertation or Dissertation A.C.G Viera, 'Matri, orthogonal polynomials, with applications to autoregressive modeling and ladder forms', Ph.D. Dissertation, Stanford Univ., Stanford, CA, Dec. 77
6.	A Private Communication W.M. Wonham (1982) Private Communication

### Format of the Cover/Title page of report:

(Title)

Submitted in partial fulfillment of the requirements of  
BITS G540 Research Practice

By

(Author)

ID No. ( )

Under the supervision of

-----  
(Name and Designation of Supervisor)

Institute emblem

BIRLA INSTITUTE OF TECHNOLOGY AND SCIENCE PILANI, PILANI CAMPUS

(Date)

### **Format of `Certificate from the Supervisor`**

#### **CERTIFICATE**

This is to certify that the report entitled, \_\_\_\_\_

\_\_\_\_\_ and  
submitted by \_\_\_\_\_ ID No. \_\_\_\_\_ in partial fulfillment of the  
requirement of BITS G540 Research Practice embodies the work done by him/her under my  
supervision.

Signature of the Supervisor

Date:

**Name**

Designation

**BIRLA INSTITUTE OF TECHNOLOGY AND SCIENCE PILANI, PILANI CAMPUS**

**FIRST/SECOND SEMESTER 20 -20**

**MID SEMESTER EVALUATION FORM BITS G540: RESEARCH PRACTICE**

ID No. \_\_\_\_\_ Name of Student \_\_\_\_\_

Name of Supervisor \_\_\_\_\_

Evaluation:

S.No.	Evaluation component	Activity	Max marks	Marks awarded
1.	Research proposal	Contents	10	
		Presentation	15	
2.	Development related	Report	5	
		Presentation	5	
3.	Research related	Report	10	
		Presentation	5	
Total			50	

Mid. Semester Grade Recommended **(A/A-/B/B-/C/C-/D/E)**:

Reports, if any (NC/I, See Academic Regulation 4.12)  
(Give reasons)

Date: \_-----

(Signature of Supervisor)

NB: Student should fill his particular in this copy and submit it to the supervisor for evaluation

\* Possible break up of marks for grades:

90 < A ≤ 100; 80 < - A ≤ 90; 70 < B ≤ 80; 60 < - B ≤ 70; 50 < C ≤ 60; 40 < - C ≤ 50; 30 < D ≤ 40; E ≤ 30

**BIRLA INSTITUTE OF TECHNOLOGY AND SCIENCE PILANI, PILANI CAMPUS**

**FIRST/SECOND SEMESTER 20 -20  
FINAL EVALUATION FORM BITS G540: RESEARCH PRACTICE**

ID No. \_\_\_\_\_ Name of Student \_\_\_\_\_

Name of Supervisor \_\_\_\_\_

**Evaluation:**

S.No.	Evaluation component	Activity	Mid Semester		End Semester		Total Marks
			Max marks	Marks awarded	Max marks	Marks awarded	
1.	Research proposal	Contents	10		-	-	
		Presentation	15		-	-	
2.	Development related	Report	5		10		
		Presentation	5		5		
3.	Research related	Report	10		20		
		Presentation	5		15		
Total			50		50		

Mid Semester Grade Recommended (A/A-/B/B-/C/C-/D/E):

Total marks out of 100 (i.e. Total of mid and end semester marks -----)

**End Semester Grade Recommended (A/A-/B/B-/C/C-/D/E):**

Reports, if any (NC/I)

(Give reasons )

Date: -----

(Signature of Supervisor)

NB: Student should fill his particulars in this copy and submit it to the supervisor for evaluation.

\* Possible break up of marks for grades:

90 < A ≤ 100; 80 < - A ≤ 90; 70 < B ≤ 80; 60 < - B ≤ 70; 50 < C ≤ 60; 40 < - C ≤ 50; 30 < D ≤ 40; E ≤ 30



**BIRLA INSTITUTE OF TECHNOLOGY AND SCIENCE PILANI, PILANI CAMPUS****Particulars of Research Practice**

The student should correctly fill in this proforma and submit it to Head of Department within two weeks of registration along with a copy of the work plan duly approved by supervisor

Name of the Student \_\_\_\_\_

ID No. \_\_\_\_\_ Discipline \_\_\_\_\_

Topic of Research Practice: \_\_\_\_\_

\_\_\_\_\_

E-mail ID: 1. BITS email ID \_\_\_\_\_

2. Non-BITS email ID \_\_\_\_\_

Phone Number: \_\_\_\_\_

Contact details of the Supervisor:

Name \_\_\_\_\_

E-mail id: \_\_\_\_\_ Phone Number: \_\_\_\_\_

Research area (consult Bulletin) -----

Date : -----

(Signature of Student)

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(Signature of Supervisor)