

ਪ੍ਰੋ. (ਡਾ.) ਜਸਬੀਰ ਸਿੰਘ ਹੁੰਦਲ
ਡੀਨ (ਪੇਸ ਅਤੇ ਖਿਦਮਤ)

Prof. (Dr) Jasbir S. Hundal
M.S. (Priv): M.Phil, Ph.D (IIT Roorkee)
DEAN (Research & Development)



ਮਹਾਰਾਜਾ ਰਣਜੀਤ ਸਿੰਘ ਪੰਜਾਬ ਟੈਕਨੀਕਲ ਯੂਨੀਵਰਸਿਟੀ
(ਯੂ.ਸੀ.ਸੀ.ਵਲ ਮਾਨਤਾ ਪ੍ਰਾਪਤ)
Maharaja Ranjit Singh Punjab Technical University
(Act 5(2015) of Pb & 2(f) & 12B of UGC Act)
ਭੰਬਾਲਾ ਰੋਡ, ਬਠਿੰਡਾ (ਪੰਜਾਬ) - 151001
Dabwali Road, Bathinda (Punjab) - 151001

DRD/MRSPTU/869

Date: 28-5-19

NOTIFICATION

SUBJECT: DEPARTMENTAL DOCTORAL RESEARCH COMMITTEE (DDRC) FOR GIANI ZAIL SINGH SCHOOL OF ARCHITECTURE & PLANNING

In partial modification of Notification no. DRD/MRSPTU/869 dated 28.05.19 of Departmental Doctoral Research Committee (DDRC) for Giani Zail Singh School of Architecture & Planning, Maharaja Ranjit Singh Punjab Technical University, Bathinda, the Deptt. shall have the following Departmental Doctoral Research Committee (DDRC) to handle the research related matters and monitor the research work of Ph.D candidates of the Department as per the University Regulations.

Departmental Doctoral Research Committee (DDRC)		
1	Prof. (Dr.) Karamjit Singh Chahal, Dean (Faculty of Architecture), kschahal@rediffmail.com , M. 94171-07403 or Chairman Board of Studies, Giani Zail Singh School of Architecture & Planning	Chairperson (Ex-officio)
2	Dean, Research & Development	Member (to be nominated by VC)
3	Dr. Rakesh Singla, Professor, Department of Civil Engineering, GZSCCET, MRSPTU, Bathinda	Member (to be nominated by Dean R&D)
4	Dr. Bhupinder Pal Singh Dr. Jatinder Kaur	Member (Department PhD Faculty)
5	Candidate's Supervisor	Member
6	One outside expert* *(Out of the three proposed by supervisor or from the approved panel of outside PhD experts of concerned Department/School or recommended, nominated by VC through Dean R&D)	Member
7	HoD Giani Zail Singh School of Architecture & Planning (Ar. Ripu Daman Singh)	Convener

In case of the non-availability of Dean (Faculty of Architecture) the Chairman-Board of Studies (Giani Zail Singh School of Architecture & Planning) shall act as Chairperson, provided he/she fulfils the condition mentioned in MRSPTU Ph.D Regulations-2016 in regard to Chairman DDRC. Presence of atleast four members of DDRC (including outside expert) shall form the quorum.

This has approval of Competent Authority

Dean (R&D)

Maharaja Ranjit Singh Punjab Technical University

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Department of Architecture

Ref No: Awtw/D/17/747 A

Dated 31.07.2019

Sub: Minutes of DDRC Meetings of Deptt. of Architecture held on 31.07.2019

The DDRC Meeting of Deptt. of Architecture, Faculty of Arch. & Planning, MRSPTU, Bathinda was held on 31.07.2019 at MRSPTU, Bathinda. Following candidates presented himself/herself before the committee for MRSPTU, Ph.D. Admission July-2019.

1. Abha
2. Meghna Vij
3. Anmol Garg
4. Anuja Gopal
5. Sampat Jhorar

The committee recommended the provisional admission of candidate subjected to fulfillment/submission of following documents, as applicable, within two weeks.

- a) Supervisor Consent Form
- b) NOC From Employer for pursuing Regular Course Work
- c) Migration Certificate

After successful submission of these documents and admission fee deposition, pre-PhD course work and supervisor are recommended as follows-

Name of Candidate	Course Allocated with Sub-Code	L-T-P-C	Supervisor Allocated
Abha	1. Research Methodology MREM0-101 2. Energy Efficient Construction & Green buildings MARC3-103 3. Building Information & Energy Management Lab MARC3-104 4. Seminar	4-0-0-4 3-1-0-4 0-0-4-2 0-0-2-1	Dr. Jatinder Kaur
Meghna Vij	1. Research Methodology MREM0-101 2. Energy Efficient Construction & Green buildings MARC3-103 3. Building Information & Energy Management Lab MARC3-104 4. Seminar	4-0-0-4 3-1-0-4 0-0-4-2 0-0-2-1	Dr. Jatinder Kaur
Anmol Garg	1. Research Methodology MREM0-101 2. Energy Efficient Construction & Green buildings MARC3-103 3. Building Information & Energy Management Lab MARC3-104 4. Seminar	4-0-0-4 3-1-0-4 0-0-4-2 0-0-2-1	Dr. Jatinder Kaur
Anuja Gopal	1. Research Methodology MREM0-101 2. Energy Efficient Construction & Green buildings MARC3-103 3. Building Information & Energy Management Lab MARC3-104 4. Seminar	4-0-0-4 3-1-0-4 0-0-4-2 0-0-2-1	Dr. Jatinder Kaur
Sampat Jhorar	1. Research Methodology MREM0-101 2. Energy Efficient Construction & Green buildings MARC3-103 3. Building Information & Energy Management Lab MARC3-104 4. Seminar	4-0-0-4 3-1-0-4 0-0-4-2 0-0-2-1	Dr. Jatinder Kaur



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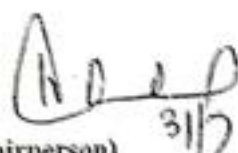
Department of Architecture

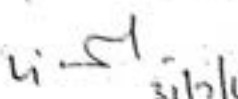
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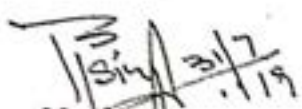
Further, it was proposed that before the Ph.D. registration, 6-monthly performance report of Ph.D. candidates (during course work and research proposal preparation) enrolled with a department may be presented before the faculty of concerned department in the presence of Supervisor and certificate of satisfactory progress be submitted to o/o Dean (R&D) for records.

The meeting ended with vote of thanks to the Chairman.


(Chairperson) 31/7


Member 31/7/19


Member 31/7/19


Member 31/7/19


Member 31/07/2019


Member

VC, MRSPTU





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Date: 19/02/2020

Ref. No. ARCH/D/20/172

Department of GZS School of Architecture and Planning

Maharaja Ranjit Singh Punjab Technical University, Bathinda.

1. Dean, Research & Development, Maharaja Ranjit Singh Punjab Technical University, Bathinda.
2. Dr. Rakesh Kumar, Professor and Head, Deptt. of Civil Engg., GZSCCET, MRSPTU, Bathinda.
3. Dr. Bhupinder Pal Singh, Professor, GZS School of Architecture and Planning, MRSPTU, Bathinda.
4. Dr. Jatinder Kaur, Professor & Head, GZS School of Architecture and Planning, MRSPTU, Bathinda.

Sub: DDRC meeting for submission of six month progress report of Ph.D Research Scholars.

With reference to office order No. DRD/MRSPTU/1143 dated 03.01.2020, a meeting for evaluation of six month progress report of research scholars, GZS School of Architecture and Planning, MRSPTU, Bathinda will be held on 25.02.2020 at 02.30 p.m. in the conference room of MRSPTU, Bathinda adjoining V.C office. You are requested to make it convenient to attend the same.


19/2/2020
Head

Copy to:

1. PA to V.C, to note it and arrange the LCD Projector.
2. Office Copy.



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Ref. No. ARCH/D/20/650

Date: 14/10/2020

Sub: Minutes of DDRC Meeting of Deptt. of Architecture held on 30.09.2020

The DDRC Meeting of Deptt. of Architecture, Faculty of Arch. & Planning, MRSPTU, Bathinda was held on 30.09.2020 at 11.45 AM at MRSPTU, Bathinda. Following members of DDRC were present:

1. Prof. (Dr.) Gaurav Raheja, Chairperson, Faculty of Architecture & Planning, MRSPTU, (Online).
2. Prof. (Dr.) Jasbir Singh Hundal, Dean (R & D) MRSPTU, Bathinda.
3. Prof. (Dr.) Rakesh K. Singla, Prof. & Head, Civil Engg. Deptt., GZSCCET, MRSPTU, Bathinda.
4. Prof. (Dr.) Bhupinder Pal Singh Dhot, Prof. & Head, GZSSAP, MRSPTU, Bathinda.
5. Prof. Ripu Daman Singh (Convener & representative of HOD)

The following decision were taken:-

Item no. 3.1 :- Conduct of interview for Ph.D admission 2020-21 for following candidates qualified in PET July-Aug, 2020.

Decision taken:- The candidates submitted Ph.D admission form (Year 2020-21) and presented their research topic. The DDRC recommended the provisional admission of candidate subject to fulfilment/submission of following documents, (as applicable), within two weeks.

- a) Supervisor Consent Form
- b) NOC From Employer for pursuing Regular Course Work.
- c) Migration Certificate

As per MRSPTU Ph.D Regulation 2016.

After successful submission of these documents and admission fee deposition, pre-Ph.D course work and supervisor are recommended as follows:-

Name of Candidate	Course Allocated with Sub-Code	L-T-P-C	Supervisor Allocated
Nippy Garg	<ol style="list-style-type: none"> 1. Research Methodology MREM0-101 2. Building Information & Energy Management Lab MARC3-104 3. Research & Publication Ethics 4. Energy Efficient Construction Green buildings MARC3-103 5. Seminar 	4-0-0-4 0-0-4-2 2-0-0-2 3-1-0-4 0-0-2-1	Dr. Bhupinder Pal Singh Dhot
Mahesh Kumar	<ol style="list-style-type: none"> 1. Research Methodology MREM0-101 2. Building Information & Energy Management Lab MARC3-104 3. Research & Publication Ethics 4. Energy Efficient Construction Green buildings MARC3-103 5. Seminar 	4-0-0-4 0-0-4-2 2-0-0-2 3-1-0-4 0-0-2-1	Dr. Bhupinder Pal Singh Dhot
Sandeep Singh	<ol style="list-style-type: none"> 1. Research Methodology MREM0-101 2. Building Information & Energy Management Lab MARC3-104 3. Research & Publication Ethics 4. Energy Efficient Construction Green buildings MARC3-103 5. Seminar 	4-0-0-4 0-0-4-2 2-0-0-2 3-1-0-4 0-0-2-1	Dr. Bhupinder Pal Singh Dhot

Admission forms of recommended candidates along with relevant documents are attached.

2 :- Change of supervisor of the following research scholars from Dr. Jatinder Kaur (who



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Ref. No. ARCH/D/20/

Date:

shall be co-supervisor) to Dr. Bhupinder Pal Singh Dhot (Professor & Head, GZS School of Architecture & Planning). The change of supervisor is being made due to joining of Dr. Jatinder Kaur at SPA, New Delhi.

Decision taken:- The DDRC has recommended the change of supervisor of following candidates as per Ph.D regulations 4.3 (i) In case the supervisor has left his application with the university or by the mutual consent of the supervisor and the candidate (Annexure - A attached).

The application form (duly filled and recommended) is attached.

- | | |
|------------------|------------|
| 1. Sampat Jhorar | 19601MPE01 |
| 2. Abha | 19601FFT02 |
| 3. Meghna Vij | 19601FPE03 |
| 4. Anuja Gopal | 19601FPE05 |

Item no. 3.3 :- Conversion of Ph.D (Full time) to Ph.D (Part time) of Ar. Abha, Enrolment no. 19601FFT02. The candidate has given a request for conversion of Ph.D (full time) to Ph.D (part time) which is attached.

Decision taken:- The conversion from full time to part time was not approved due to MRSPTU, Ph.D regulation 5.1 (vi) Full-time to Part-Time (External) conversion shall not be allowed normally and will be considered only on merit by DDRC for onward recommendation, but no before 15 months after confirmed registration (Annexure - B attached).

Item no. 3.4 :- Presentation of 6 monthly progress reports and evaluation of work done by the following enrolled Research scholars.

- | | |
|------------------|------------|
| 1. Sampat Jhorar | 19601MPE01 |
| 2. Abha | 19601FFT02 |
| 3. Meghna Vij | 19601FPE03 |
| 4. Anuja Gopal | 19601FPE05 |

Decision taken:- All the above candidates submitted the six monthly progress report (attached) but only two candidates Sampat Jhorar 19601MPE01 and Anuja Gopal 19601FPE05 presented the progress in the DDRC meeting which was accepted. The other two candidates Abha 19601FFT02 and Meghna Vij 19601FPE03 could not present their progress. The DDRC recommended that the progress report of Abha and Meghna Vij may be evaluated at department level under the chairmanship of Head of Department. The DDRC stressed upon the candidates to submit the research proposal/synopsis within six month of course work completion.

The meeting ended with vote of thanks to the Chairman.

DR. GAURAV RANEJA
(Chairperson) THRU
(ONLINE)

Member

Member

Member

Member

Member/convener



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Ref. No. ARCH/D/21/

Date:

Sub: Minutes of 4th DDRC Meeting of Faculty of Architecture & Planning held on 07.06.2021

The DDRC Meeting of Faculty of Arch. & Planning, MRSPTU, Bathinda was held on 07.06.2021 at 11.00 AM at MRSPTU, Bathinda. Following members of DDRC were present:

1. Prof. (Dr.) Bhupinder Pal Singh Dhot, Prof. & Head, GZSSAP, MRSPTU, Bathinda Chairperson.
2. Prof. (Dr.) Ashish Baldi, Dean (R & D) MRSPTU, Bathinda.
3. Prof. (Dr.) Karamjit Singh Chahal, Professor Architecture, GNDU, Amritsar (External Examiner)
4. Prof. (Dr.) Jatinder Kaur, Associate Professor, SPA, New Delhi (Supervisor),
5. Prof. Ripu Daman Singh (Convener & representative of HOD)

the onset Prof. (Dr.) Bhupinder Pal Singh Dhot, welcome the members of DDRC and introduced the external examiner. Prof. Ripu Daman Singh presented the status report of all pre registered Ph.D candidates enrolled in faculty of Architecture & Planning, MRSPTU, Bathinda (Copy attached).

The following decisions were taken:-

Item no. 4.1:- Conduct of Ph.D SYNOPSIS presentation of Sampat Jhorar, 19601MPE01 for Ph.D registration of the student.

Decision taken:- The candidate presented his Ph.D Synopsis which was accepted with minor modifications as suggested by DDRC members. The student has been submitted the Ph.D registration form with relevant enclosure as per MRSPTU Ph.D Regulation 2016.

Item no. 4.2:- Presentation of 6 monthly progress report and evaluation of work done by the following enrolled Research Scholars.

1.	Sampat Jhorar	19601MPE01	Accepted with correction in topic name
2.	Anuja Gopal	19601FPE05	Accepted with modifications in objectives and methodology
	Sandeep Singh	20601 MPE01	Accepted with modifications in topic name. objectives and methodology
4.	Nippy Garg	20601FPE02	Accepted with modifications in topic name. objectives and methodology

Decision Taken:- All the above candidates submitted the six monthly progress report (attached) and the progress reports were accepted by DDRC. The members suggested suitable modification to the candidates and asked all the candidates to seek regular guidance from their respective supervisors. The DDRC stressed upon the candidates to submit the research proposal/synopsis within six months of course work completion.

Item no. 4.3:- Consideration of request of pre-registered candidates for extension of Synopsis/ Progress report /Semester fee.

Decision Taken:- One request from Meghna Vij 19601FPE03 was received regarding acceptance of progress reports which could not be submitted due to medical reasons. The candidate also demanded six month extension for Synopsis solutions i.e upto 17.06.2021. The members of DDRC provisionally allowed the candidate to present her progress report. The candidate presented her progress report and the same was recommended for acceptance along with extension for Ph.D Synopsis submission upto 17.06.2021; subject to clearing of all pending dues and approval of Hon'ble Vice Chancellor, MRSPTU, Bathinda. Page no.2

11/06/21

11/06/21



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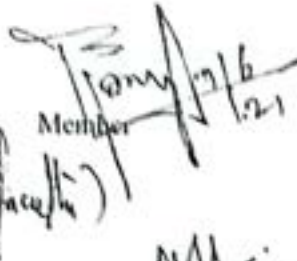
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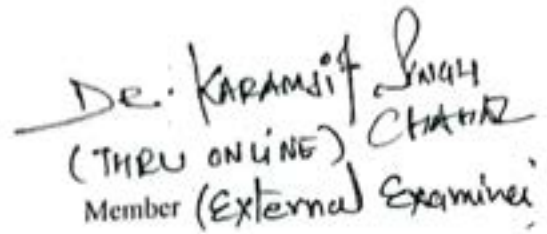
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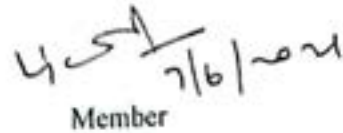
The meeting ended with vote of thanks to the Chairman.


07/06
14/21
(Chairperson)

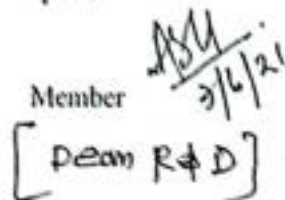
(In place of Dean faculty)


07/06
14/21
Member


CHAIR
(THRU ONLINE)
Member (External Examiner)


07/06/2021
Member

Dr. Rajesh Singh
Member
(on official duty)


07/06/21
Member
[Dean R & D]

EXPECTED OUTCOMES

The students shall be able to take effective decisions for project procurement and at the same time use planning and control techniques to manage various situations on projects.

Unit-I

1. Project procurement management - Procurement guidelines (World Bank ADB).
2. Preparation of contract documents (RFP, RFQ).
3. Pre-qualification of contractors.
4. Evaluation of Technical and financial bid proposals.
5. Negotiations, Award of contracts.
6. Arbitration.
7. Procurement for various supplies, equipment and machineries.

Unit-II

1. Project Planning – Need, constructional resources, construction team, stages in construction, construction schedule.
2. Work breakdown structure, Time estimates.
3. Planning and scheduling construction jobs by bar charts, Critical path Method (CPM) and PERT techniques.
4. Optimization of resources.

Unit-III

1. Time cost analysis.
2. Earned value management - Developing planned value, actual cost, earned value and variances, EVM application for project progress.
3. Resource and material management - Resource allocation, Resource histograms and Resource levelling, PACK method, Branch and Bound method.
4. Supervision, Inspection and quality control in construction.
5. Total quality management (TQM).

RECOMMENDED BOOKS

1. K.K. Chitkara, 'Construction Project Management: Planning Scheduling and Control', Tata McGraw Hill Publishing Company, New Delhi, 1998.
2. M. Popescu Calin, Chotchal Charoenngam, 'Project Planning, Scheduling and Control in Construction: An Encyclopaedia of Terms and Applications', Wiley, New York, 1995.
3. Chris Hendrickson and Tung Au, 'Project Management for Construction – Fundamental Concepts for Owners, Engineers, Architects and Builders', Prentice Hall Pittsburgh, 2000.
4. Moder, C. Phillips and E. Davis, 'Project Management with CPM, PERT and Precedence Diagramming', 3rd Edn., Van Nostrand Reinhold Company, 1983.
5. E.M. Willis, 'Scheduling Construction Projects', John Wiley & Sons, 1986.

ENERGY EFFICIENT CONSTRUCTION AND GREEN BUILDINGS

Subject Code: MARC3-103

L T P C
3 1 0 4

Contact Hrs.: 45

PREREQUISITES

Nil

COURSE OBJECTIVES

To learn principles and design strategies for energy efficient and green buildings especially at schematic design stage. The emphasis would be learning through exemplars. To present a value system for selecting environmentally preferable products and an overview of green and sustainable building materials.

EXPECTED OUTCOMES

Student shall able to understand basic knowledge about energy efficient construction technologies and green building materials.

Unit-I

1. Energy sources- Renewable and Non-renewable.
2. Energy and Environment: World/Asia energy outlook.
3. Building types and energy consumption (including heating, cooling, ventilation, lighting and other loads).
4. Psychometrics and comfort.
5. Thermal behaviour of buildings.
6. Natural and Mechanical Ventilation.

Unit-II

1. Energy efficiency considerations.
2. Introduction to Building Physics.
3. Energy efficient measures- Study of energy efficiency principles of a building for different climatic zones.
4. Sustainable construction- Green buildings.
5. Sustainability assessment- Rating Systems.
6. Energy Conservation Building Codes.

Unit-III

1. Study of Embodied energy- Carbon footprint, carbon neutral buildings.
2. Building Automation, BIM and Performance assessment.
3. Analysis of Lighting- Day-lighting and Electric-lighting.
4. Energy Auditing.
5. Software tools for energy analysis of buildings.

RECOMMENDED BOOKS

1. MoEF, 'Environmental Clearances, Ministry of Environment and Forest', Government of India, New Delhi, <http://moef.nic.in/modules/project-clearances/environment-clearances/>, 2006.
2. BIS, 'Handbook of Functional Requirements of Buildings (other than industrial building) SP 41(S & T)', Bureau of Indian Standards, New Delhi, 1987.
3. BIS, 'National Building Code of India SP: 7', Bureau of Indian Standards, New Delhi, 2005.
4. BEE, 'Energy Conservation Building Code', Bureau of Energy Efficiency, Ministry of Power, Government of India, 2007.
5. MNRE, 'Green Rating for Integrated Habitat Assessment', Ministry of New and Renewable Energy, Government of India, New Delhi. <http://www.grihaindia.org/index.php>, 2010.
6. IGBC, 'LEED – India, Green Building Rating System, (LEED-India NC)', version 1.0, Indian Green Building Council, Hyderabad. http://www.igbc.in/site/mmbase/attachments/48344/LEED.Abrid_Ver.pdf, 2007.
7. D.P. Lawrence, 'Environmental Impact Assessment: Practical Solutions to Recurrent Problems', John Wiley & Sons, New Delhi, 2003.
8. Kulbhushan Jain, 'Earth Architecture'.

BUILDING INFORMATION AND ENERGY MANAGEMENT LAB.

Subject Code: MARC3-104

L T P C
0 0 4 2

PREREQUISITES

Nil

COURSE OBJECTIVES

To make students gain the fundamental knowledge of using energy modelling, simulation technology and equipment as an energy performance analysis tool.

EXPECTED OUTCOMES

The students shall be able to calculate the energy consumption of heating, cooling, lighting and other equipment to understand the thermal behavior of buildings by using energy modelling simulation programs and equipment.

PROJECTS

1. Building Information Management (BIM) systems.
2. Energy performance analysis- Thermal analysis, Thermal modelling (heating, cooling loads).
3. Ventilation models- Steady state, Dynamic heat flow.
4. Lighting analysis- Day lighting, Artificial lighting.
5. Evaluating models- Measurements with equipment, Comparisons, Verifications.

Note: The progress of lab work is to be presented by the student periodically in classroom environment which shall be evaluated by teacher in-charge continuously. The student is required to appear for a viva voce examination to be conducted by external examiners at the end of semester.

INFRASTRUCTURE DEVELOPMENT AND MANAGEMENT

Subject Code: MARC3-156

L T P C

Contact Hrs.: 45

3 1 0 4

PREREQUISITES

Nil

COURSE OBJECTIVES

To make students understand the basic concepts related to infrastructure development and its management for planning and effective delivery.

EXPECTED OUTCOMES

The student shall be able to develop expertise in effective management of infrastructure challenges.

Unit-I

1. Overview of infrastructure sector.
2. Introduction to infrastructure business.
3. Various types of infrastructure.
4. Infrastructure project feasibility - Appraisal and Diligence.
5. Life Cycle perspective of infrastructure.
6. Project implementation approach - SPVs and PPPs.

Unit - II

1. Introduction to Infrastructure project planning and management techniques.
2. Stages of Project formulation and their significance.
3. Strategic planning measures.
4. Project feasibility analysis.
5. Integrated reporting techniques- Milestone technique, time and cost underrun, Cost overrun techniques, Unit index technique.

Unit - III

1. Typical DPR structuring.
2. Case studies for application of social and financial cost benefits in rural and urban sector.
3. Infrastructure development under JNNURM, NCR and growth centres.

RECOMMENDED BOOKS

1. IS/ACI/British Standards, 'Principles of Concrete Mix Design, Concrete Mix Design Procedure'.
2. Mahesh Verma, 'Construction Equipment and its Planning and Application'.
3. R.L. Peuripo, 'Construction Planning Equipment and Methods', Tata McGraw Hill.
4. Jagman Singh, 'Heavy Construction Planning Equipment and Methods', Oxford and IBH.

SEMINAR

Subject Code: MARC3-308

L T P C

0 0 8 4

COURSE PREREQUISITES

Nil

COURSE OBJECTIVES

To provide an opportunity to students for carrying out academic research in the areas of their interest.

EXPECTED OUTCOME

The student shall be able to prepare state of art seminar report by assimilation of concepts on a chosen area of building engineering and management through literature study and data collection.

PROJECTS

1. A comprehensive state of art report is to be prepared on the chosen topic with the identification of areas requiring further research. Students are required to develop a research methodology and hypothesis for this purpose and test their outcome proposals through various methods - including questionnaire surveys and case studies. Students must create an innovative insight on the specific issues.
2. It is encouraged that students identify topics for the seminar work which can be further developed into another research Project in the same semester.
3. Alternatively, this seminar report can be independent research topic.

Note: The progress of seminar work is to be presented and discussed by the student periodically in classroom environment which shall be monitored continuously. The students shall be provided guidance from the faculty. The student is required to defend his/her seminar report at a viva voce examination by internal examiners.

PROJECT

Subject Code: MARC3-309

L T P C

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COURSE PREREQUISITES

Nil

COURSE OBJECTIVES

To provide an opportunity to students for carrying out academic research in the areas chosen for seminar report or different.

EXPECTED OUTCOME

The student shall be able to prepare state of art Project report by assimilation of concepts on a chosen area of building engineering and management through literature study and data collection with more specific findings.

PROJECTS

1. A comprehensive state of art report is to be prepared on the chosen topic with the identification of areas requiring further research. Students are required to develop a research

MRSPTU M.PLANNING SYLLABUS 2019 BATCH ONWARDS
(UPDATED ON 16.10.2019)

Name of the Subject: INFRASTRUCTURE PLANNING		
Subject Code: MARPL1-202	Semester: Second	
Duration: 48 Hours	Maximum Marks: 100	Credits: (3 + 0) = 3
Teaching Scheme	Examination Scheme	
Lecture : 3 hrs/week	End Semester Exam: Marks 50	
Practical : --	Internal Assessment: Marks 50	

Aim: To study the Significance of Infrastructure in Urban and Regional Planning and Development.

Objective:

- 1. The Role and Significance of Infrastructure in Habitat Planning and in inducing Peoples' Participation in the Planning Process.**
- 2. To understand the importance of different Sectors and their Mutual Interdependence.**

Pre-Requisites: --

Contents		Hrs
Unit – 1	Water Supply and Sanitation Quantity and quality, source of supply, transmission and distribution, treatment methods, design guidelines. Sanitation – concepts, disposal systems, low cost sanitation options; engineering aspects of sewage disposal; Wastewater – generation, disposal system Storm water drainage – systems	12
Unit – 2	Solid Waste Disposal and Management Basic principles, generation, characteristics, collection, disposal, management.	12
Unit – 3	Fire and Electrification, and Social Infrastructure Planning for fire protection, services and space standards, location criteria; Planning for Education, health, civic, cultural infrastructure	12
Unit – 4	Traffic and Transportation Planning for infrastructure and facilities for transport	12

Text / Reference Books:

S. No.	Name of Authors	Titles of the Book	Edition	Name of the Publisher
1	Gathe Donald E.; Billings, R. Bruce; Buras, Nathan,	Managing urban water supply	2003	Dordrecht, Kulwer Academic Press.
2	Ghosh, G.K.	Water of India	2000	A.P.H.Publishing Corporation
3	Yadav, Satish	Water Problems and its Management,	2004	Hope India Publications
4	W'Mays Larry	Urban Water Supply Handbook	2002	McGraw Hill Handbook

MRSPTU M.PLANNING SYLLABUS 2019 BATCH ONWARDS
(UPDATED ON 16.10.2019)

5	Butter, David	Urban Drainage	2004	David Butter & John W. Davis Spon Press (IInd Edition) London & New York, 2004.
6.	Nathanson, J.A.; John, P.E., Wiley & Sons, N.R. Brisbane	Basic Env. Technology: Water Supply, Waste Disposal & Pollution Control.	1986	
7.	Bandela, N.N.; Tare, D.G.	Municipal Solid Waste Management	2009	B.R. Publishing
8.	Holmes, J.R.	Manual on Municipal Solid Waste Management, The Expert Committee Gol, MoUD, CPNEEO 2000 Managing Solid Waste in Developing Countries	1984	John Pub. John Wiley & Sons, Singapore.

List of Exercises / Practicals:

1	Visit to a Infrastructure Development Agency and submit report.
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List of Assignments/Tests:

1	Test on Unit 1 or Unit 2.
2	Assignment on Unit 4.

INSTRUCTIONS TO QUESTION PAPER SETTER

1. One compulsory question containing five questions of 2 marks (10 marks), each requiring short answers, are to be set from the entire syllabus.
2. The examiner is required to set another six questions (atleast one from each unit), out of which the students are required to attempt any four questions (selecting at least one from each unit).

MRSPTU M.PLANNING SYLLABUS 2019 BATCH ONWARDS
(UPDATED ON 16.10.2019)

Name of the Subject: URBAN PLANNING STUDIO - I		
Subject Code: MARPL1-205		Semester: Second
Duration: 240 Hours		Maximum Marks: 500
Teaching Scheme		Credits (2 + 8) = 10
Lecture : 3 hrs/week		Examination Scheme
Practical : 12 hrs / week		End Semester Exam: Marks 200
		Internal Assessment: Marks 300
Aim: To carry out City Based Study focusing Planning and Design.		
Objective:		
1.	To Assess, Collect and Analyze the Information Requirements for the Study.	
2.	To understand the Characteristics of the City for Preparation of Sustainable Development Plan.	
Pre-Requisites: –		
Contents		
Unit - 1	Geo-Informatics Laboratory Training The laboratory training will be conducted in accordance with the studio exercise. Introduction to Geo-informatics, introduction to Remote Sensing – Aerial and Satellite; introduction to GIS, Spatial data and Attribute data; Satellite images as input to GIS; Collection and presentation of baseline information.	Hrs 75
Unit - 2	Development Plan The studio exercise focuses on the planning, development and design aspect (in line with the other core and elective courses offered in the semester). The exercise pertains to large cities and emerging metropolitan cities and ranges from preparation of sustainable development plans to sector specific themes pertaining to tourism, SEZs, etc. The studio exercise enables students to develop an approach/ framework for the task; it is field based as a database is generated that is analyzed and the plan and strategies are formulated. Initial study involves understanding of the exercise through theories, study of similar case studies, awareness of relevant norms and standards through extensive literature search. Students are required to prepare a comprehensive list of required data and identify probable sources before making a field visit to the case study town/city. Students are encouraged to translate learning from the core and elective subjects to the studio exercise. The introduction of GIS in the studio enables them to apply it in the studio exercise. Students are expected to analyze the data collected and come out with proposals and recommendations for planned development of the city. The entire exercise is also documented in the form of a technical report. The second exercise is a short and intensive exercise of one-month duration. It pertains to topical issues i.e. property tax reforms, informal sector, development of railway land, etc. The study is based on primary surveys and students are expected to analyze the information and arrive at recommendations.	165

RESEARCH METHODOLOGY

Subject Code – MREME0-101

L T P C

Duration – 60 Hours

4 0 0 4

Course Objectives

The main aim of this subject is:

1. To understand the process of formulating research problem, significance of review of literature and in-depth knowledge of various types of research designs
2. To explain various methods of data collection, Sampling, Sampling techniques, formulation of Hypothesis and their practical implementation in Research.
3. To learn about the functional knowledge of Statistical tests (Correlation, Regression, t-test, Z-test, F-test, Chi – Square, ANOVA) in SPSS with examples
4. To understand about factor analysis and Cluster Analysis in Research projects.

Course Outcomes

After the completion of this course students will be able to

1. Have an understanding of various kinds of research, objectives of doing research, research process research designs and sampling.
2. Develop data collection instrument according to the underlying theoretical framework
3. Construct and document an appropriate research design, including argumentation for data collection and analysis methods/techniques
4. Write & develop independent thinking for critically analyzing research reports.

UNIT-I (15 Hrs)

Introduction to Research: Meaning, Definition, Objective and Process

Research Design: Meaning, Types - Historical, Descriptive, Exploratory and Experimental

Research Problem: Necessity of Defined Problem, Problem Formulation, Understanding of Problem, Review of Literature

Design of Experiment: Basic Principal of Experimental Design, Randomized Block, Completely Randomized Block, Latin Square, Factorial Design.

Hypothesis: Types, Formulation of Hypothesis, Feasibility, Preparation and Presentation of Research Proposal

UNIT-II (15 Hrs)

Sources of Data: Primary and Secondary, Validation of Data

Data Collection Methods: Questionnaire Designing, Construction

Sampling Design & Techniques – Probability Sampling and Non Probability Sampling

Scaling Techniques: Meaning & Types

Reliability: Test – Retest Reliability, Alternative Form Reliability, Internal Comparison Reliability and Scorer Reliability

Validity: Content Validity, Criterion Related Validity and Construct Validity

UNIT-III (15 Hrs)

Data Process Operations: Editing, Sorting, Coding, Classification and Tabulation

Analysis of Data: Statistical Measure and Their Significance, Central Tendency, Dispersion, Correlation: Linear and Partial, Regression: Simple and Multiple Regression, Skewness, Time series Analysis, Index Number

Testing of Hypothesis: T-test, Z- test, Chi Square, F-test, ANOVA

UNIT – IV (15 Hrs)

Multivariate Analysis: Factor Analysis, Discriminant Analysis, Cluster Analysis, Conjoint Analysis, Multi Dimensional Scaling

Report Writing: Essentials of Report Writing, Report Format

Recommended Books

1. R.I Levin and D.S. Rubin, 'Statistics for Management', Pearson Education New Delhi, Seventh Edition
2. N.K. Malhotra, 'Marketing Research-An Applied Orientation', Pearson Education New Delhi, Fourth Edition
3. Donald Cooper, 'Business Research Methods', Tata McGraw Hill New Delhi
4. Sadhu Singh, 'Research Methodology in Social Sciences', Himalaya Publishers
5. Darren George & Paul Mallery, 'SPSS for Windows Step by Step', Pearson Education New Delhi

RESEARCH PUBLICATION AND ETHICS

Subject Code – PREPE0-101

L T P C

Duration – 30 Hrs

2 0 0 2

UNIT – I (5 Hrs)

Introduction to Philosophy: Definition, Nature and Scope, Concept and Branches
Ethics – Definition, Moral Philosophy, Nature of Moral Judgements and Reaction, Ethics with respect to Science and Research

UNIT -II (6 Hrs)

Intellectual Honesty and Research integrity

Scientific Misconduct: Falsification, Fabrication and Plagiarism

Redundant Publications: Duplicate and Overlapping Publication, Salami Slicing
Selective reporting and misrepresentation of data

Database: Indexing Databases, Citation Databases – Web of Science, Scopus etc.

Research Metrics: Impact Factor of Journal as per journal citation report,
SNIP, SJR, IPP, Cite Score **Metrics –** H-Index, i10-Index, g-Index, Altmetrics

UNIT -III (9 Hrs)

Publication Ethics- Definition, Introduction and Importance

Best Practices/Standard Settings initiatives and guidelines: COPE, WAME etc.

Conflict of Interest

Software to identify predatory publications developed by SPPU

Journal Finding / Journal Suggester Tools – Elsevier Journal Finder, Springer Journal Suggester etc.

SHERPA/RoMEO online resource to check publisher copyright & Self Archiving Policies

UNIT -IV (10 Hrs)

Publication Misconduct – Definition, Concept, Problems that lead to unethical behaviour and vice-versa

Violation of Publication ethics and authorship and contributorship, Identification of Publication Misconduct, Complaints and Appeal- Examples and Fraud from India and Abroad, Predatory Publishers and Journals

Use of Plagiarism Software like Turnitin, Urkund and other open source software tools

Recommended Books

- Bird A. (2006) Philosophy of Science Routledge
- MacIntyre Alasdair (1967) A Short History of Ethics London
- P. Chaddah (2018) Ethics in competitive Research: Do not get scooped; Donot get plagiarized, ISBN: 9789387480865
- National Academy of Sciences, National Academy of Engineering and Institute of Medicine, (2009) On being a scientist: A Guide to Responsible Conduct in research: Third edition, National Academies Press.

**P.D. COURSE WORK SYLLABUS (FACULTY OF COMMERCE & MANAGEMENT)
BATCH 2020 ONWARDS**

- Resnik, D. B. (2011) What is ethics in research and why it is so important, National Institute of Environmental Health Sciences, 1-10
- Beall, J. (2012) Predatory publishers are corrupting open access, Nature 415 (7415), 179-179
- Indian National Science Academy (INSA) Ethics in Science Education Research and Governance ISBN: 978-81-939482-1-7



MAHARAJA RANJIT SINGH PUNJAB TECHNICAL UNIVERSITY
(Estb. by Punjab Govt vide Punjab Act No. 5 of 2015 & under section 2 (f) of the UGC Act)
DABWALI ROAD, BATHINDA (Punjab) -151 001

Office Of
DEAN (RESEARCH & DEVELOPMENT)

Dated: 9.5.2016

Notification No: DRD/MRSPTU/ B-1

NOTIFICATION

**Maharaja Ranjit Singh Punjab Technical University, Bathinda Anti-Plagiarism Policy
For Ethical Conduct in Research-2016**

Maharaja Ranjit Singh Punjab Technical University, (MRSPTU) Bathinda (erstwhile Maharaja Ranjit Singh State Technical University) has been established as an affiliating University vide Punjab Act No. 5(2015) and notified through Punjab Government Gazette-Extraordinary (Regd. No.-CHD/0092/2015-2017) notification No. 5-Leg/2015 dated 12th February 2015.

In its pursuit for excellence in education and research, as embodied in its vision and mission and to output quality human resources with high professional and ethical conduct, guidelines and anti plagiarism policy has been framed.

Consequent upon the approval of Academic Council (Item 1.07) in its 1st Meeting held on 11.03.2016 and subsequent approval of Board of Governors (Item 4.3) of MRSPTU in its 4th meeting held on 12.04.2016, the University hereby notifies its **Anti-Plagiarism Policy For Ethical Conduct in Research – 2016** to uphold and practice research ethics by all researchers affiliated to this University.

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OBJECTIVE:

In pursuance of the vision and mission of MRNPTU in regard to attaining excellence in technical education and research and to provide quality human resources having high professional and ethical conduct, provisions are made for upholding and practicing research ethics by all the researchers. In addition, all students shall abide by Honor code of the University.

PART-A

UNETHICAL RESEARCH PRACTICES

(1) **PLAGIARISM**

- a) Claiming the work, research data, text phrase(s), paragraph(s), or idea(s) of someone else- from published or unpublished work including as available on Internet or in any other media, orally presented at any platform or personally discussed- as the candidate's own, be it researcher or faculty member or employee, either in publication or presentation or in any other form for any academic purpose, including attainment of a degree e.g. in thesis, project reports, sponsored research projects/proposals, books etc., without proper citation, acknowledgement or reference, shall be termed as plagiarism.
- b) Presenting or reproducing one's own published work- partially or in whole- without giving proper reference of the work shall also be treated as a form of self plagiarism.

(2) **FORGERY AND MISINTERPRETATION OF RESEARCH DATA:**

Presentation of fabricated results, forged data, false statements, reporting or claiming results for which experiments have not been performed, deliberately withholding the results that do not conform to the proposed hypothesis / theory in any form- for the

**MRSPTU ANTI-PLAGIARISM POLICY FOR ETHICAL
CONDUCT IN RESEARCH-2016**

purpose of attaining any academic degree or benefit, including service benefit- shall also be treated as unethical research practice.

(3) MISUSE OF CONFIDENTIAL INFORMATION:

Misuse of privileged or confidential information received by virtue of being an examiner to review/examine/grant research proposals/projects, or by virtue of peer reviewer for a journal, or as an examiner of a project/thesis/seminar/ or any other examination shall be deemed as unethical research conduct. Any person found guilty of passing confidential information to unauthorized person, who indulges in plagiarism, will be charged with misconduct.

PART-B

GUIDELINES FOR ETHICAL CONDUCT IN RESEARCH

- (1) Authors/researchers shall cite/quote others' work whether published or unpublished in all research communications wherever used in their own work. Other's work may have been published in book/journal/proceedings of conference / seminar / workshop, available on website, or orally presented in seminar.
- (2) Authors shall explicitly acknowledge the technical contributions made by others towards the fulfillment of the objectives of the research work submitted by them to earn an academic degree.
- (3) Plagiarism check, as per the relevant software available in University library or as recommended by the competent authority shall be mandatory before submission of dissertation/thesis, in partial fulfillment or as such, for the award of a research based degree. A report to this effect shall be put up before Dean R&D through the Department for consideration, adjudication, and acceptance.
- (4) Complete and accurate record of experimental data, which form basis of conclusions/observations in research work or thesis, shall be maintained by the researcher. Data storage whether electronically or hand written should have dates.

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**MRSPTU ANTI-PLAGIARISM POLICY FOR ETHICAL
CONDUCT IN RESEARCH-2016**

- (5) Publication should be listed as submitted or accepted only when the author has actually submitted or received letter of receipt/acceptance, as the case may be, from the authorized official of the journal handling the manuscript.
- (6) Author should not publish same research, including abstracts, in two places; citation must be included to avoid 'self-plagiarism'.
- (7) If plagiarism has been noticed or reported, it is the author's responsibility to correct or retract article as per journal's specifications.
- (8) All students admitted to this University shall abide by the Honor Code of the University.
- (9) The candidate has to certify, duly endorsed by the Supervisor, in case of studies dealing with Animals/Genomes/Stem-cells, radioactive material etc. that all Ethical clearances have been obtained and requisite facilities are available.

PART-C

HONOUR CODE OF MRSPTU, BATHINDA

"All students admitted to MRSPTU, Bathinda shall not engage in any unethical activity, morally or professionally, and shall perform all academic and research activities that enhance the prestige and honor of the University"

PART-D

ANTI-PLAGIARISM POLICY

- (1) If a draft thesis is found plagiarized and/or is reported to DDRC, it shall call the candidate to hear the candidate's view. On hearing the candidate, the DDRC shall submit its recommendations keeping in view the following guidelines:
 - (a) If the similarity between documents is within the limit (maximum 15% in each chapter) for putting some original results in proper context and all original sources are correctly cited. The similarity is not of such nature which directly affects the original findings of research. No further action is required. Candidate may be permitted to submit the thesis.

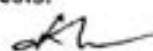
**MRSPTU ANTI-PLAGIARISM POLICY FOR ETHICAL
CONDUCT IN RESEARCH-2016**

- (b) **Self-plagiarism:** "Regarding self plagiarism or cases where published work of the student himself is shown as Plagiarized in the check, a certificate (Self Plagiarism Exclusion Certificate-Annexure) has to be issued by the supervisor specifying and attaching the articles that have been published by the student from the thesis work. Only these articles should be excluded from the check; no other article of the student or supervisor should be excluded from the check."

If the similarity contents are from candidate's previous published work without proper citation then the candidate shall resubmit the work with proper citations. If the published work is also co-authored, the researcher shall submit a consent letter from co-author(s) and the publisher permitting him to use the work in his thesis.

- (c) **Unintentional (Low-level) Plagiarism:** When the similarity between documents is marginally outside the limit and plagiarism is not deliberate or is not intended to cheat, the candidate may be allowed to resubmit the work with proper citations.
- (d) **Inept (Mid-level) Plagiarism:** When the similarity between documents is outside the limit and relates to absence of citation(s), and copying of few sentences and paragraphs, though the intent to cheat is very low. In this case, the candidate may be allowed to resubmit the work with proper citation and with a warning not to repeat the mistake again.
- (e) **Intentional (High-level) Plagiarism:** When the intention to cheat is obvious and deliberate and is a planned attempt to copy the work done by someone else, and is claimed as one's own to attain an academic degree. Large amount of data is taken from someone else's work directly, art work copied, source code copying etc. without citation, acknowledgements and/or permissions. The candidate's registration may be cancelled.

- (2) The thesis resubmitted as recommended by the Departmental Doctoral Research Committee will be again placed before DDRC and the candidate shall also be present to substantiate the necessary improvements made by him in the work/thesis.



PART-E

ACTION FOR PLAGIARISM REPORTED

- (1) In case, any plagiarism is reported to the University when a Ph.D. degree has already been awarded, the Vice-Chancellor may constitute an expert committee to enquire into charges of plagiarism and the committee will submit its report with recommendations.
- (2) The expert committee may give the opportunity of hearing to the concerned parties as it may deem fit.
- (3) The Vice-Chancellor will place the report along with recommendations of the committee before the Academic Council for its consideration and action.
- (4) In case, plagiarism is detected/reported for any published work (books/monographs/Thesis/ Dissertations/ Research papers etc.) with sufficient proofs- on the basis of which an academic degree has been attained or any service benefit claimed/ obtained, matter shall be referred by the Vice-Chancellor to an expert committee (comprising of Dean R&D, Dean Academic Affairs, HoD, and three subject experts to be nominated by the Vice-Chancellor) to enquire into the charges of plagiarism. The committee will submit its report with recommendations to Vice-Chancellor for appropriate action. In case, a high-level intentional plagiarism is established, the case shall be referred to the university Board of Governors (BoG) for withdrawal of all academic and service benefits extended on the basis of these published works or for taking any other action that the BoG may deem fit.

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**MRSPTU ANTI-PLAGIARISM POLICY FOR ETHICAL
CONDUCT IN RESEARCH-2016**

Self-Plagiarism Exclusion Certificate

In the thesis submitted by _____ Regd. No. _____ for the award of PhD,
the content of the Chapters have been published in

(Give the details of the work published in Journals/Books etc)

- 1.
- 2.
- 3.
- 4.

This published work has been included in the thesis and has not been submitted for any
degree to any University/Institute.

(Signature of the Candidate)

(Signature of Supervisor(s))

**MRSPTU ANTI-PLAGIARISM POLICY FOR ETHICAL
CONDUCT IN RESEARCH-2016**

Self-Plagiarism Certification/Consent by Co-authors

We have published the following articles/Research papers jointly:

(Give the details of the work published in Journals/Books etc)

- 1.
- 2.
- 3.

- We give our consent to Mr./Ms. Regd. No. to make use of these articles for his / her Thesis/Dissertation.
- The above research paper(s) have not been used by any of us for any degree / Diploma in any other University.
- We shall be responsible for any legal dispute/ case(s) for violation of any provisions of the Copy Right Act.

Signature of Co-author

Signature of Co-author

Signature of Co-author

Name

Name

Name

Office Address.....

Office Address

Office Address

Email ID

Email ID

Email ID

Signature of the Supervisor

Signature of the Candidate (Author)

Name

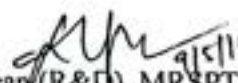
Name

Designation

Supervisor's ID

Registration No.

This has the approval of Board of Governors, MRSPTU Bathinda on 12.04.2016 at Chandigarh.


Dean (R&D), MRSPTU

The notification is forwarded to the following for information and further necessary action.

1. PA to VC, MRSPTU, Bathinda

MAHARAJA RANJIT SINGH PUNJAB TECHNICAL UNIVERSITY, BATHINDA