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Volume-9

EVALUATIVE REPORT

DEPARTMENT OF MATHEMATICS

for

ASSESSMENT AND ACCREDITATION

Submitted to

NATIONAL ASSESSMENT AND ACCREDITATION COUNCIL

BANGALORE



JAYPEE UNIVERSITY OF ENGINEERING AND TECHNOLOGY
GUNA

November 26, 2015

EVALUATIVE REPORT OF THE DEPARTMENT

1. **Name of the Department** : Mathematics (MATHS)

2. **Year of establishment** : 2003

3. **Is the Department part of a School/Faculty of the university?**

JUET is a unitary University. It has departments that include Department of Mathematics.

4. **Names of programmes offered (UG, PG, M.Phil., Ph.D., Integrated Masters; Integrated Ph.D., D.Sc., D.Litt., etc.)**

- M. Sc.(Mathematics), 2 years course leading to M. Tech.(Computational Mathematics) additional one year
- Ph.D. (Full Time/ Part Time)

5. **Interdisciplinary programmes and departments involved**

None.

M.Tech.(Computational Mathematics) program is interdisciplinary program with Department of Computer Science and Engineering (CSE). However, till this academic year no student has taken admission in this course.

6. **Courses in collaboration with other universities, industries, foreign institutions, etc.**

Not yet

7. **Details of programmes discontinued, if any, with reasons.**

B.Sc. (Hons) programme is discontinued from July, 2014 onwards due to poor response of students.

8. **Examination System: Annual/Semester/Trimester/Choice Based Credit System**

Semester, along with choice based credit system. Following are the details for evaluation of all type of courses

Examinations

To train the student to put in sustained and disciplined work over the entire period of study, following pattern of examination is being implemented in the university. Some important components of the examination pattern are as given below:-

I. Theory Courses

The university follows the semester systems and accordingly three examinations held in each semester for theory courses. These examinations have a total weightage of 75%; the balance 25% allocated to Assignments, Quizzes, Tutorial, and Regularity in Attendance etc. by the Course Coordinator/ Teacher. Details of examinations and their weightage are as follows:-

a) Theory Tests/Examinations

Three tests/examinations held in each semester as specified in previous section. Tests/examinations are as under:-

- (i) Test-1 or T-1
- (ii) Test-2 or T-2
- (iii) Test-3 or T-3

b) Weightage of marks, duration & Syllabus for theory test/examination Allotment of weightage of marks i.e.75% of total & Syllabus, duration, marks for each Tests/Examination will be as under:-

Allotment of marks:

Tests/Exams	T-1	T-2	T-3
Percentage of marks	15	25	35
Duration in Hours	1	1 ½	2

Syllabi Coverage:

The syllabus for each test is course contents covered up to the last day of teaching before the examination.

c) Allotment of remaining weightage of marks i.e. 25% of total.

Remaining weightage of marks i.e. 25% including 5% of attendance awarded by respective course coordinator in each theory course through the individual events i.e. Assignments, Tutorials, Quizzes, Regularity & Punctuality in class attendance on the basis of entire semester performance of the individual student.

9. Participation of the department in the courses offered by other departments:

(a) Courses offered in B. Tech programme:

Beneficiary Department	Course Name
All Branches of B.Tech. programs	Mathematics -1
All Branches of B.Tech. programs	Mathematics -2
B.Tech. Mechanical Engineering & Civil Engineering	Numerical Methods
B.Tech. Electronics and Communication Engineering, & Computer Science and Engineering	Probability Theory and Random Processes

B.Tech. Computer Science Engineering	Discrete Mathematics
B.Tech. Electronics and Communication Engineering, Computer Science and Engineering & Civil Engineering	Game Theory
B.Tech. Electronics and Communication Engineering & Computer Science and Engineering	Optimization Techniques
B.Tech. Electronics and Communication Engineering & Computer Science and Engineering	Numerical Techniques
B.Tech. Electronics and Communication Engineering & Computer Science and Engineering	Integral Transforms
B.Tech. Computer Science and Engineering & Chemical Engineering	Optimization Methods for Engineering
B.Tech. Mechanical Engineering & Chemical Engineering	Mathematical Methods in Engineering
B.Tech. Computer Science and Engineering	Graph Theory
B.Tech. Mechanical Engineering	Operation Research Methods
B.Tech. Computer Science and Engineering	Applied Linear Algebra
B.Tech. Computer Science and Engineering	Methods of Applied Mathematics
B.Tech. Computer Science and Engineering	Graph Theory
B.Tech. Computer Science Engineering	Matrix Computation
B.Tech. Computer Science and Engineering	Mathematical Modeling and Computer Simulation

(b) Courses offered in M. Tech/Ph.D. programme:

Beneficiary Department	Course Title
All Branches of Ph. D	Research methodology & computational Technique
All Branches of M.Tech. All Branches Ph. D.	Advanced Numerical Techniques
M.Tech. Electronics and Communication Engineering, M.Tech. Computer Science and Engineering All Branches of Ph. D.	Mathematical Modeling and Simulations
M.Tech. Mechanical Engineering, All Branches of Ph. D.	Optimization and Statistical Methods
M.Tech. Electronics and Communication Engineering, All Branches of Ph.D.	Wavelets and Applications

M.Tech. Computer Science and Engineering All Branches of Ph. D.	Fuzzy sets and systems
Ph.D.(Mathematics)	Fluid Mechanics

(c) Courses offered in Diploma programme:

Beneficiary Department	Course Title
All Branches	Mathematics -1
All Branches	Mathematics -2

10. Number of teaching posts sanctioned, filled and actual (Professors/Associate Professors/Asst. Professors/others)

	Sanctioned	Filled	Actual (including CAS & MPS)
Professor	0	Nil	
Associate Professors	0	Nil	
Asst. Professors	8	05	
Others Teaching Assistants		Nil	06*

*Full time Ph.D. scholars

11. Faculty profile with name, qualification, designation, area of specialization, experience and research under guidance

Name	Qualification	Designation	Specialization	No. of Years of Experience	No. of Ph.D./ M.Phil. students guided for the last 4 Years
Dr. H.K. Mishra	Ph.D.	Assistant Prof.(SG)	Numerical Analysis	14	Ph. D. Supervision: 01 Ongoing : 03
Dr. D.K. Sharma	Ph.D.	Assistant Prof. (SG)	Information Theory	12	Ph. D. Supervision : 01 Ongoing : 01 PDF. Ongoing : 01
Dr. B.R. Gupta	Ph.D.	Assistant Prof.(G-II)	Fluid Dynamics	7	Ph. D. Supervision: 00 Ongoing : 02
Dr. Susheel Kumar	Ph.D.	Assistant Prof.(G-II)	Analysis	4	Ph. D. Supervision : 00 Ongoing : 00
Dr. Divya Jain	Ph.D.	Assistant Prof.(G-II)	Fuzzy sets and Fuzzy information measures	10	Ph. D. Supervision : 00 Ongoing : 02

12. List of senior Visiting Fellows, adjunct faculty, emeritus professors:

Not yet

13. Percentage of classes taken by temporary faculty – programme-wise information:

Nil

14. Programme-wise Student Teacher Ratio:

Faculty members of department of mathematics are teaching to the students of all branches of engineering therefore, student teacher ratio is mentioned with the respective departments.

15. Number of academic support staff (technical) and administrative staff: sanctioned, filled and actual:

	Sanctioned	Filled	Actual
Technical	Nil	Nil	Nil
Administrative	Centrally managed at University level		

16. Research thrust areas as recognized by major funding agencies:

Numerical Analysis

Ordinary differential equations and Partial differential equations are important tools in solving real world problems. A wide variety of natural phenomena are modelled by second order differential equations. Ordinary differential equations have been applied to many problems in physics, engineering, biology and so on. For example, the so-called Emden-Fowler equations arise in the study of gas dynamics, fluid mechanics, relativistic mechanics, nuclear physics and also in the study of chemically reacting systems. In this work we will present a new method for obtaining the analytical approximation to the solution of nonlinear ordinary and partial differential equations by combining HPM and Laplace transform.

17. Number of faculty with ongoing projects from a) national b) international funding agencies and c) Total grants received. Give the names of the funding agencies, project title and grants received project-wise

S. No.	Name of Principal Investigator	Department	Name of Project	Sponsor	Date of Approval	Fund Allocated (₹ in Lakh)	Duration
1	Dr. H.K. Mishra	Mathematics	Computational Methods For Solving Boundary Value Problems via He-Laplace Perturbation Method With Engineering Applications	MPCST, Govt. of MP	June 26, 2015	3.28	2 Years

18. Inter-institutional collaborative projects and associated grants received

(a) National collaboration

Post Doctoral fellowship from National Board of Higher Mathematics of Department of Atomic Energy, Mumbai, India (Fellowship of ₹ 8.20 Lakh/- is received from March 01, 2013 up to September 30, 2015).

(b) International collaboration

Not yet

19. Departmental projects funded by DST-FIST; UGC-SAP/CAS, DPE; DBT, ICSSR, AICTE, etc.; total grants received :

S.No.	Name of Principal Investigator	Department	Name of Project	Sponsor	Date of Approval	Fund Allocated (in ₹ Lakh)	Duration
1.	Dr. H.K. Mishra	Mathematics	Computational Methods For Solving Boundary Value Problems via He-Laplace Perturbation Method With Engineering Applications	M.P. Council of Science & Technology, Bhopal(M.P.)	June 26, 2015	3.28	2 Years

20. Research facility / centre with

- State recognition : Not yet
- National recognition : Not yet
- International recognition : Not yet

21. Special research laboratories sponsored by / created by industry or corporate bodies:

Not yet

22. Publications

I. Summary Report

Category	Total publications
International Journals	35
National Journals	01
International Conferences	02
National Conferences	00

II. Other Publications

Category	Numbers
Monographs	01
Chapters in Books	01
Edited Books	02
Books with ISBN	02

III. Journals Indexed in SCOPUS/SCI/Others

Category	SCOPUS	SCI	Others	Total
International	05	03	27	35
National	0	0	01	01

IV. Citation Index:

Indexing parameter	Details
Google citations	Total citations-149 Range:4–87 Average:29.8
SNIP	Range: 0.85–0.96 Average: 0.91
SJR	Range: 0.16–1.15 Average:0.39
Impact Factor	Range: 0.51–0.56 Average:0.83
h-index	Range: 8–46 Average:18.13

Details of Publications are given in Annexure-I/Mathematics

23. Details of patents and income generated:

Not yet

24. Areas of consultancy and income generated

Not yet

25. Faculty selected nationally / internationally to visit other laboratories / institutions/industries in India and abroad:

Dr. H.K. Mishra

- Hradyesh Kumar Mishra, presented” Initial value Technique for Singular Perturbation Boundary Value Problems “ in the 5th conference on Finite Difference Methods: Theory and Applications, June 28-July 02, 2010, Lozenetz, Bulgaria.
- Hradyesh Kumar Mishra, Contributed talk on “A comparative study of Variational Iteration method and Laplace homotopy perturbation method” at 36th annual meeting of the Society of Industrial and Applied Mathematics Southeastern Atlantic Section, March 24-25, 2012, at the University of Alabama in Huntsville, USA”.

Dr. D.K. Sharma

- Montreal, Canada, to present a research paper at 20th International Conference of FIM held from July 1-4, 2011.

26. Faculty serving in

a) National committees b) International committees c) Editorial Boards d) any other (please specify)

a) National committees

None

b) International committees:

S. No	Name of Faculty member	Name of committees	Role
1	Dr. Susheel Kumar	Mathematical Reviews (American Mathematical Society)	Reviewer

c) Editorial Boards

S. No	Name of Faculty member	Name of journal	DOI/ISSN/ISBN
1	Dr. H.K.Mishra	ISST Journal of Mathematics & Computer Sciences (India)	ISSN: 0976 – 9048
2	Dr. H.K.Mishra	American Journal of Mathematical Analysis	ISSN (Print): 2333-8490 ISSN (Online): 2333-8431
3	Dr. H.K.Mishra	American Journal of Applied Mathematics and Statistics	ISSN (Print): 2328-7306 ISSN (Online): 2328-7292
4	Dr. H.K.Mishra	International Journal of Advances in Engineering & Technology (IJAET)	ISSN: 2231-1963
5	Dr. H.K.Mishra	World Academy of Science, Engineering and Technology	
6	Dr. H.K.Mishra	American Journal of Numerical Analysis	ISSN (Print): 2372-2118 ISSN (Online): 2372-2126

d) Any other (please specify)

None

27. Faculty recharging strategies (UGC, ASC, Refresher / orientation programs, workshops, training programs and similar programs).

To recharge the faculty, department organizes conferences, workshops, seminars, expert talks, refresher courses, faculty development programs, etc., at JUET. In addition, faculty members participate in these activities outside also. Details are mentioned as below:

Conference/ Workshops organized by the Department: 03

S. No	Title	Date
1	Ancillary Tools for Research (jointly with Physics Department)	June 16-18, 2015
2	17 th Annual Conference of GAMS and National Symposium on Computational Mathematics and IT (jointly with Computer Science and Engineering)	December 07 - 09, 2012
3	Workshop on Optimization and Information Theory	March 24-26, 2011

28. Student projects: Department does not offer any project according to curriculum

- **Percentage of students who have done in-house projects including inter-departmental projects**

Not yet

- **Percentage of students doing projects in collaboration with other universities/industry / institute**

Not yet

29. Awards / recognitions received at the national and international level by

- **Faculty :**

None

- **Doctoral / post doctoral fellows :**

None

- **Students :**

Dr. Sonali Saxena received young scientist award in '27th M.P Young Scientist Congress', held at M.P Council of Science & Technology, Vigyan Bhawan Bhopal (M.P) on February 28-29, 2012.

30. Seminars/ Conferences/Workshops organized and the source of funding (national/international) with details of outstanding participants, if any.

- **Workshop/Training Program**

S. No	Title	Duration (with date)	Sponsoring body/agency (if any)	No. of participants	Keynote speakers (with detail)
1	Workshop on Optimization and Information Theory	March 24-26, 2011	DST	70	Prof. B.K. Dass, Department of Mathematics, Delhi University
2	Ancillary Tools for Research (Jointly with Physics Department)	June 16-18, 2015	NIL	35	Prof. D.S. Hooda

• **Conference (National/International) Organized**

S. No	Title	Duration (with date)	Sponsoring body/agency (if any)	No. of participants	Keynote speakers (with detail)
1.	17 th Annual Conference of GAMS and National Symposium on Computational Mathematics and IT (Jointly with CSE Department)	December 7-9, 2012	NBEHM, DST, CSIR and DBT	170	Prof. Karmeshu, Dean of System Sciences, J.N.U., New Delhi.

31. Code of ethics for research followed by the departments:

The department follows the university code of research ethics. In addition, the faculty and research scholars are advised to follow IEEE/ACM code of ethics.

32. Student profile programme-wise:

Year	Name of the Programme (refer to question no. 4)	Applications received	Selected		Pass percentage	
			Male	Female	Male	Female
2012-15	B. Sc	08	01	04	100	100
2014-15	Ph.D.	11	00	03	Nil	Nil
2013-14	Ph.D.	09	02	01	Nil	Nil
2012-13	Ph.D.	08	02	00	Nil	Nil
2011-12	Ph.D.	08	00	02	Nil	100
2010-11	Ph.D.	06	02	00	100	Nil

33. Diversity of Students

Year	Name of the Programme (refer to question no. 4)	% of students from the same university	% of students from other universities within the State	% of students from universities outside the State	% of students from other countries
2013-15	M.Sc.(Mathematics), Any student has not taken admission yet	-	-	-	-
2014-15	B.Sc	0	0	0	0
2013-14	B.Sc	0	0	0	0
2012-13	B.Sc	0	100	0	0
2014-15	Ph.D.	0	67	33	0
2013-14	Ph.D.	0	67	33	0
2012-13	Ph.D.	0	100	0	0
2011-12	Ph.D.	0	100	0	0
2010-11	Ph.D.	0	50	50	0

34. How many students have cleared Civil Services and Defense Services examinations, NET, SET, GATE and other competitive examinations? Give details category-wise.

Not yet

35. Student progression

Student progression	Percentage against enrolled
UG to PG	0
PG to M.Phil.	0
PG to Ph.D.	0
Ph.D. to Post-Doctoral	16
Employed <ul style="list-style-type: none"> • Campus selection • Other than campus recruitment 	40
Entrepreneurs	0

36. Diversity of staff

Percentage of faculty who are graduates	UG	PG	Ph.D.
of the same university	Nil	Nil	40
from other universities within the State	40	40	Nil
from universities from other States	60	60	60
from universities outside the country	Nil	Nil	Nil

37. Number of faculty who were awarded M.Phil., Ph.D., D.Sc. and D.Litt. during the assessment period

- One faculty member has awarded Ph.D.
- The details of the faculty members who have been awarded Ph.D. is given below:

S. No.	Name of Faculty	Area of Research	Year of Degree awarded	University
1.	Dr. Divya Jain	On Generalized Fuzzy Information Measures and Fuzzy Clustering Techniques	2012	JUET, Guna

38. Present details of departmental infrastructural facilities with regard to

- Library:** Department uses the facility of Learning Resource Centre (LRC) available centrally. In addition to this a Departmental Library is also available.
- Internet facilities for staff and students:** JUET campus is fully connected through LAN/ Wi-Fi arrangement consisting of around 3500 nodes. Internet facility is available 24 X 7 on all these nodes through 1Gbps leased line. On this network 855 Desktop Systems are made available to faculty members and staff members. Other nodes are available for connections of personal computing devices by faculty members/staff/students.
- Total number of class rooms:** 13 Lecture Theatres and 30 Class Rooms/Tutorial rooms of the University are shared with other departments.

d) **Class rooms with ICT facility:**

13 Lecture Theatre and 6 Class Rooms/Tutorial rooms with ICT facility are with other departments. The detail information is mentioned in Section 4.3.7.

*Details mentioned at point b),c) &d) is available centrally at University level which is being shared by other departments also.

39. List of doctoral, post-doctoral students and Research Associates

a) From the host institution/university

• **Doctoral Degree (Awarded)**

1. Dr. Divya Jain
2. Dr. Sonali Saxena
3. Dr. Vikas Jain
4. Dr. Santosh Shrivastava
5. Dr. Keerti Upadhyay
6. Dr. Sonali Saini

• **Doctoral Degree (Pursuing)**

1. Bharat Raj Jaiswal
2. Arnodaya Raj Mishra
3. Rishi Kumar Pandey
4. Ram Kishun Lodhi
5. Pratibha Rani
6. Reetu Kumari
7. Vandana Mishra
8. Rajni Tripathi

• **Post-Doctoral (Pursuing)**

1. Dr. Sonali Saxena

b) From other institutions/universities: Not yet

40. Number of post graduate students getting financial assistance from the university

Till date no student has taken admission in post graduate program offered by department.

In doctoral program, students are registered and the following students are getting financial assistance from university:

S. No.	Name
1.	Rishi Kumar Pandey
2.	Ram Kishun Lodhi
3.	Pratibha Rani
4.	Reetu Kumari
5.	Vandana Mishra

41. Was any need assessment exercise undertaken before the development of new programme(s)? If so, highlight the methodology

The emerging trends in industry, research, government policies, computing education, recommendations of the professional bodies, and JUET management's directives motivate and guide the department to design new programs. International and nationally renowned academicians from many leading institutes and industry professionals are consulted while conceptualizing and designing new programs or revising the curricula of existing programs. All the faculty members are requested to give their suggestions and finally the meeting of the board of studies including external experts is held for reviewing the curriculum. For example, following external experts have provided their suggestions and feedback for the curriculum exercise for designing new curriculum for B.Sc.(Hons) program:

- Prof. V.P. Saxena, Ex. Vice Chancellor, Jiwaji University Gwalior, Former Director, SIRT, Bhopal
- Prof. K.C. Jain, Professor and Head, Department of Mathematics, MNIT, Jaipur.

42. Does the department obtain feedback from

a. Faculty on curriculum as well as teaching-learning-evaluation? If yes, how does the department utilize the feedback?

Yes. Feedback from faculty is obtained during departmental meetings. Before setting departmental agenda for BOS and Academic Council, aspects of curriculum such as course content and learning expectations are discussed in departmental meetings.

b. Students on staff, curriculum and teaching-learning-evaluation and how does the department utilize the feedback?

At the end of every semester, student's feedback is collected for each subject about the faculty, course contents, and method of teaching and learning/understanding of contents. Feedback is communicated to concerned faculty for appropriate corrective actions.

c. Alumni and employers on the programmes offered and how does the department utilize the feedback?

Yes. Feedback from alumni is collected. Faculty also receives informal feedback from employers from time to time. Feedback is discussed departmentally and utilized appropriately. Online feedback collection is done through emails.

43. List the distinguished alumni of the department (maximum 10):

S. No.	Year of Passing from JUET, Achievements and current affiliations
1	Dr. Sonali Saxena, 2012 Post Doctoral fellow, NBHM(DAE), Mumbai, India
2	Dr. Santosh Shrivastava, 2014 Research Associate, ISB, Mohali, Chandigarh, India
3	Dr. Vikas Jain, 2014 Guest faculty, Government PG college Guna(M.P.), India
4	Dr. Keerti Upadhyay, 2015 Assistant Professor, SRCEM, Gwalior(M.P.), India
5	Dr. Sonali Saini, 2015 Assistant Professor, IPS Indore, (M.P.), India

44. Give details of student enrichment programmes (special lectures / workshops / seminar) involving external experts.

National workshop on 'Optimization and Information Theory with their Applications' March 24-26, 2011.

Resource Person: Prof. B.K. Dass, Department of Mathematics, Delhi University

45. List the teaching methods adopted by the faculty for different programmes.

- (i) Black/White board
- (ii) Power-point presentation
- (iii) Visualizer
- (iv) Seminars
- (v) Tutorials and Assignments

46. How does the department ensure that programme objectives are constantly met and learning outcomes are monitored?

- (i) Through continuous teaching, learning and evaluation activities followed by the revision of the curriculum.
- (ii) Through the feedback of the experts and the students.
- (iii) Through the monitoring and advice of the
 - (a) Institute Academic Management Committee
 - (b) Board of Studies and Academic Council

Student progress and learning outcomes are monitored through continuous evaluations, tutorials and laboratory exercises, and live projects/assignments. The Institute conducts three tests in all courses and review the performance of students in the faculty meeting at departmental level and in the meeting of result committee under the chairmanship of the Vice Chancellor. At the end of each semester, student feedback is taken; course wise performance of students is discussed, analyzed and recorded in terms of grades. Based on discussion, feedback of student and faculty, course contents are improved. Weak students are encouraged for special meetings and interaction with the faculty to identify their problems and means to solve them.

47. Highlight the participation of students and faculty in extension activities.

Faculty and students of the department are actively involved in various extension activities organized by JUET. Details are given in section 3.6 of Self Study Report of the University.

48. Give details of “beyond syllabus scholarly activities” of the department.

Conducting conferences, workshops, seminars, and Faculty Development Programs

- Conducting expert lectures in various emerging areas.
- Participation of the faculty in conferences/workshops/seminars etc.

49. State whether the programme/ department is accredited/ graded by other agencies? If yes, give details.

Not yet

50. Briefly highlight the contributions of the department in generating new knowledge, basic or applied.

The department has contributed new knowledge by developing new techniques for the following:

- Numerical Analysis
- Information Theory
- Fluid Dynamics
- Analysis
- Fuzzy sets and Fuzzy information measures

The above contribution is reflected in the publications and theses produced by the Department.

51. Detail five major Strengths, Weaknesses, Opportunities and Challenges (SWOC) of the department.

Strengths

- All faculty members are Ph.D.'s and experienced.
- There is the diversification in the specialization of the faculty members.
- 80% of faculty members are having the Ph.D. scholars.
- Faculty members are encouraged to attend International/National conferences.
- Seminars are delivered by the faculty members and research scholars periodically.

Weaknesses

- Poor response for the admission to B.Sc. (Hons) and M.Sc. (Mathematics) / M.Tech. (Computational Mathematics) Programs
- Funded Research projects

Opportunities

- There is good placement of UG and PG students in Mathematics
- Offer courses to post graduate students.

Challenges

- To keep pace with change in technology and updating knowledge
- To attract students towards BSc. and M.Sc. (Mathematics) /M.Tech.(Computational Mathematics) Programs

52. Future plans of the department

- To strengthen the existing programs.
- To introduce new courses covering latest developments in engineering and sciences
- To develop the state-of-the-art labs
- To excel in research in the emerging area

List of Publications

SCI/Scopus Indexed Journal Publications

2015

1. H.K. Mishra and Sonali Saini, “A new quartic B-spline method for third-order self-adjoint singularly perturbed boundary value problems”, Applied Mathematical Sciences, ISSN Online: 1314-7552, Volume 9, Issue 8, pp.399-408, 2015. [Citation Index: 0.81, SNIP:-- 0.853, SJR: 0.335, H- Index: 21]
2. Bharat Raj Jaiswal and B.R Gupta, “Stokes flow over composite sphere: Liquid core with permeable layer”, Journal of Applied Fluid Mechanics, ISSN Online:1735-3572, Volume 8, Issue 3, pp. 339-350, 2015. [Citation Index: 0.64, SNIP:-- 0.966, SJR: 0.33, Impact Factor: 0.505 H- Index: 8, SCI]
3. Bharat Raj Jaiswal and B.R Gupta, “Brinkman flow of a viscous fluid past a Reiner-Rivlin liquid sphere immersed in a saturated porous medium”, Transport in Porous Media, ISSN Online: 1573-1634 Volume 107, Issue 3, pp. 907-925, 2015. [Citation Index: 1.79, SNIP:-- NA, SJR: 1.15, Impact Factor: 1.460, H- Index: 46, SCI]
4. Bharat Raj Jaiswal and B.R Gupta, “Stokes flow of micropolar fluid past a non-Newtonian liquid spheroid”, International Journal of Fluid Mechanics Research, ISSN Online: 2152-5102, Vol. 42 Issue 2, pp 170-189, 2015. [Citation Index: 0.43, SNIP:-- NA, SJR: 0.16, H- Index: 11]

2014

5. H.K. Mishra and Sonali Saini, “Fourth order singularly perturbed boundary value problems via initial value techniques”, Applied Mathematical Sciences, ISSN Online: 1314-7552, Volume 8, Issue 13, pp. 619-632, 2014. [Citation Index: 0.81, SNIP:-- 0.853, SJR: 0.335, H- Index: 21]

2013

6. B. R. Gupta and S. Deo, “Axisymmetric creeping flow of a micropolar fluid over a sphere coated with a thin fluid film”, Journal of Applied Fluid Mechanics, ISSN Online:1735-3572, Volume 6, Issue 2, pp.149-155, 2013. [Citation Index: 0.64, SNIP:-- 0.966, SJR: 0.33, Impact Factor:0.505,H- Index: 8, SCI]

2012

7. H.K. Mishra, Atulya K Nagar, “He-Laplace method for linear and nonlinear partial differential equations” in Journal of Applied Mathematics, ISSN Online: 1687-0042, Vol. 2012, pp. 1-16, 2012. [Citation Index: 0.66, SJR: 0.29, H- Index: 19]

2010

8. B.R. Gupta and S. Deo, “Stokes flow of micropolar fluid past a porous sphere with non- zero boundary condition for microrotations”, International Journal of Fluid Mechanics Research, ISSN Online:2152-5102, Volume 37, Issue 5, pp. 424-434, 2010.[Citation Index: 0.43, SNIP:-- NA, SJR: 0.16, H- Index: 11]

Other International Journal Publications

2015

1. D.S. Hooda, Keerti Upadhyay and D.K. Sharma, “On Parametric Generalization of ‘Useful’ R-norm Information Measure”, British Journal of Mathematics & Computer Science, Volume 8, Issue 1, pp.1-15, 2015.
2. H.K. Mishra and Sonali Saini, “Quartic B – Spline Method for Solving a Singular Singularly Perturbed Third-Order Boundary Value Problems ”, American Journal of Numerical Analysis, Volume 3, Issue 1, pp. 18-24, 2015.
3. Susheel Kumar and G. S. Srivastava, “Approximation and Generalized Lower Order of Entire Functions of Several Complex Variables”, New Zealand Journal of Mathematics, Volume 45, Issue 1, pp. 11-17, 2015.

2014

4. D. S. Hooda, Sonali Saxena and Keerti Upadhyay, “Characterization of a Generalized Information Measure by Optimization Technique”, International Journal of Engineering Research and Management Technology, Volume 1, pp.301-31, 2014.
5. D.S. Hooda, Keerti Upadhyay and D.K. Sharma, “A Generalized Measure of ‘Useful R-norm Information’”, International Journal of Engineering Mathematics and Computer Sciences, Volume 3, Issue 5, pp.1-11, 2014.
6. D.S. Hooda, Keerti Upadhyay and D.K. Sharma, “Bounds on Cost Measures in terms of ‘Useful’ R-norm Information Measures”, Direct Research Journal of Engineering and Information Technology (DRJEIT), Volume 2, Issue 2, pp. 11-17, 2014.
7. Arunodaya Raj Mishra, D. S. Hooda and Divya Jain, “Weighted Trigonometric and Hyperbolic Fuzzy Information Measures”, International Journal of Computer and Mathematical Sciences, Volume 3, pp.62-68, 2014.
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Publications in Conference Proceedings

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2015

1. Susheel Kumar, “Logarithmic Order of Special Monogenic Functions”, 1st International Conference of Indian Society of Information Theory and Applications (ISITA), (Lambart Academic Publishers), organized by Sri Sai College of Engineering and Technology, Badhani, Punjab , India, pp. 575-583, ISBN:--- 978-3-659-71422-1, January 16-19, 2015.

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1. H.K. Mishra, “Liouville-Green Transform Method for Linear Singular Perturbation Boundary Value Problems”, International Conference on Soft Computing for Problem solving (Soc.Pros 2011) organized by IIT,Roorkee ,pp. 1019-1026, ISBN:--- 978-81-322-0490-9, December 20-22,2011.

Books

2015

1. D.S. Hooda and Vivek Raich, “Fuzzy Set Theory and Fuzzy Controller”. ISBN: 978-81-8487-412-9, Narosa Publishing House New Delhi, 2015.
2. D.S. Hooda and Shishir Kumar “Computational Mathematics and Information Technology”, ISBN: 978-81-8487-420-4, Narosa Publishing House New Delhi, 2015.
3. D.S. Hooda and Vivek Raich “ Fuzzy Information Measures with Applications”. ISBN: 978-81-8487-411-2, Narosa Publishing House New Delhi, 2015.

2012

4. D.K. Sharma and D.S. Hooda “Some Generalized Information Measures: Their characterization and Applications”. ISBN: 978-3838386041, Lambert Academic Publishing, Saarbrücken, Germany, 2012.

2011

5. D.S. Hooda and Shishir Kumar “Learning Manual of Workshop on Optimization and Information Theory”. ISBN: 978-93-80697-87-1, Excel India Publishers, New Delhi, 2011.

Books Chapter

2011

1. D.S. Hooda, "Maximum Entropy Method for Estimation of Missing Data" , International Encyclopedia of Statistical Science Part 13, 786-787, (2011).

Participation in Workshop/FDP/Refresher Courses

2015

1. H.K. Mishra attended the Indo-European study group meeting in industrial problem(IESGMIP2015) at faculty of technology and engineering, M.S. university of Baroda, Kalabhavan, Vadodara, Gujrat during January, 5-9, 2015.

2014

2. B.R Gupta attended the five days national workshop on "Advanced Computational Fluid Dynamics" organized by Department of Applied Mechanics, Motilal Nehru National Institute of Technology Allahabad, UP, India during June 28 – July 02, 2014.
3. B.R Gupta attended the five days short-term training programme on "Basics of computational fluid dynamics" organized by Department of Applied Mechanics, Motilal Nehru National Institute of Technology Allahabad, UP, India during June 23 – 27, 2014.

2012

4. H.K. Mishra attended the Indo –USA IUCEE workshop on Renewable Energy attended at Jaypee University of Engineering and Technology, Guna (M.P.) during June 4- 8, 2012.
5. D.K. Sharma attended the Indo-USA IUCEE workshop on Application Oriented Networking attended at Jaypee University of Engineering and Technology, Guna (M.P.). from July 9-13, 2012.

2011

6. H.K. Mishra attended "A National Workshop On Optimization and Information Theory With Their Applications" at Jaypee University of Engineering and Technology, Guna (M.P.) during March 24-26, 2011.
7. D.K. Sharma attended "A National Workshop On Optimization and Information Theory with Their Applications" at Jaypee University of Engineering and Technology, Guna (M.P.) during March 24-26, 2011.

8. B.R Gupta attended the five days International workshop on “Numerical methods” organized by Jaypee University of Engineering & Technology, Guna in collaboration with IUCEE during July 4-8, 2011.
9. B.R Gupta attended the three days National workshop on “Optimization and Information Theory with Their Applications” organized by Jaypee University of Engineering & Technology, Guna during March 24-26, 2011.

2010

10. H.K. Mishra attended the ICM Satellite Conference on "PDE and Related Topics" at TIFR-CAM, Bangalore-560065 during August 13-17, 2010.