



Research Promotion Guidelines

DAYANANDA SAGAR COLLEGE OF ENGINEERING

Shavige Malleshwara Hills, Kumaraswamy Layout, Bengaluru-560078

(An Autonomous institute affiliated to VTU,

Approved by AICTE & UGC, accredited by NBA & NAAC with 'A' grade)



Dayananda Sagar College of Engineering

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Dayananda Sagar College of Engineering

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1. Background

Dayananda Sagar College of Engineering (DSCE) faculties and students regularly involve themselves in research activities related to various domains. DSCE is having most of the departments approved as Research Centers by Visvesvaraya Technological University (VTU) in different branches of Science, Engineering and Technology catering to the research scholars for obtaining Ph.D. The college has an information resource center in the form of a digital library with good infrastructural facilities to enable researchers to review the recent literature in the core areas of research. DSCE also encourages faculties regularly to involve themselves in research related activities and to undertake sponsored research projects from various Governmental and non-Governmental agencies. Research and Development is carried out in several areas of Science, Engineering and Technology like Cloud Computation, Environment, Image Processing, Artificial Intelligence & Machine learning, Cyber Security, Computer Networks, Software Engineering, Materials Science, Nano synthesis, Telecommunication, Sensor networks and so on. DSCE also encourages faculty members through reimbursement of registration charges for attending International conferences and seminars.

Information Resource center of the digital library is provided with high-speed Internet and access to many National and International Journals to enable the researchers to review recent literature. In addition to this, the Main Library subscribes to DELNET, INDEST/AICTE consortium online information resources to facilitate the acquisition of advanced knowledge in the fields of Research, Engineering, Management and Science & Humanities. Digital library is also provided with anti-plagiarism software to help the students and

faculty to check their manuscripts before proceeding for publication. The functioning of the College library is extended till 11 PM on all working days to facilitate the students and faculty to research beyond office hours.

All the departments have established their specialized research laboratories or Centers of Excellence (COE) to perform research in emerging fields and thrust areas. Among the COE, an exclusive laboratory on Image Processing has been established in collaboration with Indiana University in the Computer Science department. Research facilities in collaboration with Bosch Rexroth and Autodesk have been established in Automobile department. Most of the departments are funded with research schemes sponsored by various government and non-government agencies.

2. Preamble

DSCE being an Autonomous Institute, after connecting with researchers and Industry experts, developed a value added curriculum along with focused research activities to set up research center and Centers of Excellences in different fields of Science, Engineering and Technology. DSCE is approved by All India Council for Technical Education (AICTE), Govt. of India and affiliated to Visvesvaraya Technological University. It has a widest choice of engineering branches having 15 Under Graduate courses & 13 Post Graduate courses. In addition, the Institution has most of the departments recognized as Research Centers in different branches of Science and Engineering catering to research scholars for obtaining PhD under VTU. Various courses in the departments are accredited by NBA. The Institute is spread over 23 acres of land with a large infrastructure supported by laboratories with state-of-the-art, equipments and machines. The Central Library with modern facilities and the Digital Library provides the knowledge base for the students. The

campus is *Wi-Fi* equipped with large bandwidth internet facility. The College has good faculty strength with highest professional integrity and committed to the academics with transparency in their actions. The faculties are research oriented having number of sponsored R & D projects from different agencies such as Department of Science & Technology, Defense R & D organizations, Indian Space Research Organization, KSCST, AICTE etc. This policy document is the manifestation of the efforts, dreams and aspirations of the researchers involved in the mission towards excellence.

3. Guidelines for Promotion of Research

The Research and Development policy of DSCE is with a vision to impart quality technical education with a focus on Research and Innovation emphasizing on development of sustainable and inclusive technology for the benefit of society. The Institute has developed excellent facilities, both in terms of infrastructure and scholastics. DSCE is encouraging faculty members and students to undertake sponsored research projects from various agencies with a commitment to serve the society.

4. Research and Development (R&D) Centers

To achieve a high-quality research ambiance in the Institute, Research & Development centers were set up with the objective of developing the strategic plan for scientific and technology research and ensuring the implementation of such plans. The R&D Center provide specialized administrative and managerial support for the operation of

- i. Academic research and all sponsored research and projects related activities in the departments.
- ii. Memorandum of Understanding (MOUs) for the departments.
- iii. Industrial Consultancy and other R&D related activities in the departments.

5. Doctor of Philosophy (Ph. D)

A PhD candidate should register at a DSCE Research Center after getting a provisional registration letter from VTU or any other recognized University and is permitted to do the research in respective Research Center.

- i. Research scholars are encouraged to publish their research works in reputed National and International Journals and Conferences. The Institution's Digital library is provided with anti-plagiarism software to help the PhD students to check their manuscripts before proceeding for publication. First two plagiarism checks for a particular document will be free of cost and further checks can be done for a nominal fee.
- ii. Ph.D. candidates should submit their research progress as prescribed by the University once in six months.
- iii. In order to motivate the faculty members towards research and publishing their research findings in reputed International conferences, incentives are given to them.

6. Sanctioned Projects

DSCE also encourage the faculty to apply for projects under various schemes in thrust areas of research. As a means of recognition and reward, an incentive scheme is in place. Please refer the Incentive guidelines for Promotion of Research in the Institution (Section 9).

- i. All the appointments related to the sanctioned projects under the category of Junior Research Fellows and Research Assistants will be screened by a committee constituted by the Principal, Principal Investigator (PI) of the project and HR manager, such appointments of the researchers in the sanctioned projects will be on a contract basis with a consolidated monthly emolument as prescribed by the Sponsoring agency and the Institution. The tenure of appointment of the project staff will be for the duration of the project.
- ii. Principal Investigators shall arrange to maintain separate account and all the purchases have to be maintained in the procurement-cum-purchase or stock register related to the sanctioned project.

- iii. The contract may be terminated by either side (Staff or R & D Unit) by giving three months' notice or three months consolidated emoluments in lieu of the notice.
- iv. Overhead charge of the project will be transferred to the 'Funded Project' account.
- v. Accounts for sponsored projects shall be maintained under five broad budget heads. They are Salary, Equipment, Contingency & Consumables, Travel and Institutional Charges. Minor adjustments in approved budget heads may be permitted by the Principal without violating the norms of the funding agency.
- vi. Cash advance shall be drawn in the name of PI/Co-PI of the project.
- vii. All expenditures shall normally be made within the proposed date of completion of the project. An exception may be permitted with the consent of the sponsor.
- viii. PI shall submit the Utilization certificates and other related reports as prescribed by the sponsoring agency.
- ix. The Government of Karnataka TA & DA rules will be applicable to the PIs and project employees for all sponsored research/consultancy projects related to traveling and boarding expenses, if there is a provision in the sponsored project or as prescribed by the sponsoring agency.
- x. Within the framework of a sponsored project, PIs shall be permitted to have consultancy fee/honorarium, if the sponsor so approves.
- xi. Depending on the availability of funds under the Travel head and with the approval of the Principal, expenses (TA, DA, Registration Fee, etc.) for presenting papers in National Conferences in fields relevant to the project shall be given to PI/Co-PIs from the project fund as prescribed by the sponsoring agency or as prescribed in the incentive guidelines of the Institution (Section 9).

7. Consultancy and related Services

DSCE also encourages the faculty to engage in Industrial Consultancy related activities in the Institution and the co-coordinator will be benefitted as per the terms and conditions of the consultancy and the Institution or as prescribed in the incentive guidelines of the Institution (Section 9).

- i. Projects requiring the use of the Laboratory and other facilities of the Institute, the Institution will receive the consulting fee as prescribed in the incentive guidelines of the Institution (Section 9).
- ii. As an encouragement to promote consultancy activities in the Institution, a consulting fee will be received by the Coordinator who brings consultancy as prescribed in the incentive guidelines of the Institution (Section 9).

8. Code of Conduct

The following are the codes of conduct that express the ethical values to be practiced by all the staffs engaged in academic and/or sponsored research activities at DSCE.

- i. To abide by all the appointment-related terms and conditions as approved by Institution.
- ii. To maintain the secrecy of the research findings/technical information and to avoid communication of any official document or information to others without permission.
- iii. To commit no form of plagiarism during art-of-work and preparation and dissemination of reports and research articles.
- iv. To practice and promote fairness in research.

9. Incentives for Promotion of Research in the Institution

Over the years, the Institution has received several grants from various national, international, government and private sectors and its faculty members have several research publications in different domains and areas. Every department has a research center recognized by Visvesvaraya Technological University (VTU) and some departments are having Center of Excellence lab developed in association with the

industry, established with the latest tools and technology for the research scholars and the students to work. The main focus is to have a good applied research work in terms of creating suitable extensions and customizations to existing research outcomes leading to successful practical use. The infrastructure and facilities of the Institution are utilized by the faculty members, research scholars, postgraduate students and undergraduate students of the Institution for research activities. DSCE aims to inculcate a research culture among faculty to explore the unexplored and achieve breakthrough innovations in various fields of Science and Technology through enhanced Research & Development activities. In particular, the faculty members are expected to pursue their research preferably leading to some outcomes such as quality publications, projects/products and patents. Faculty members have to note that papers have to be published as per the guidelines. Progress in their related area of research with the above-mentioned outcome(s) shall be considered for appraisals.

Incentives shall be given to the faculty for carrying out any of the following research activities listed below:

9.1 Research Publications

To encourage faculty to publish research articles in reputed refereed journals like SCI, SCIE, Web of Science and Scopus with very good impact factor (Minimum IF: 1.0).

The Incentive amount shall be Rs. 5,000/- per publication with DSCE affiliation to the 1st author/corresponding author. If there are more than 1 author but limited to 4 authors credit will be distributed in the ratio of 60:40. The 1st author shall be eligible for 60% amount of Rs. 3,000/- and balance 40% shall be distributed amongst the remaining authors. However, in such case necessarily the 1st author/corresponding author has to be from DSCE.

9.2 Funded Project Proposals

Incentive will be paid to the team of investigators of research projects with external funding in an amount equal to 8% of the total project funding. This incentive will be paid in two parts – 5% after receipt of the 70% of the project amount and the other 3% on completion of the project and receipt of the balance amount of the project. The incentive amount is divided equally among all the investigators.

Note: Incentive of 8% on funded Projects would be based on Capital grants received, instead of revenue grants.

9.3 Conferences / Seminars / Workshops / Symposia

Sponsorship is also provided to all faculty members after completion of the probation period for a maximum of one conference/seminar/workshop/symposium per year held within India and during the vacation time at IITs, NITs/other reputed Institutes. Registration fee along with applicable TA/DA will be accorded. Beyond the stipulated one opportunity, only registration fee may be payable at the discretion of the Management.

9.4 “Dayananda Sagar” Best Researcher Award

The Best Researcher Award will be presented annually to outstanding full-time faculty members, with doctoral degree, in recognition of extraordinary research contributions in their field of study. The Best Researcher Award is to recognize faculty who have contributed significantly to the advancement of science and technology through their consistent research activities over a long time. All cadres of faculty are eligible. The Best Researcher Award highlights DSCE's commitment to innovation and research excellence and the award will be given in the name of its founder Sri. Dayananda Sagar.

Each recipient of Best Researcher Award will receive a one-time award of Rs. 25,000/-, Memento and a citation.

9.5 Criteria for Best Researcher Awards

Faculty member will be evaluated on the following aspects during the last 10 years for these awards. Faculty members, who score at least 50 marks, are only considered for these awards.

Table 9.5 A. Research Publications (Maximum 35 marks)

S.No.	Criterion	Max Marks
1	Publication of technical papers in national and international journals (Preference will be given for publications in SCI & SCOPUS journals) 4 marks per paper as first author and 3 marks as author of any order for published in international journal with impact factor 1 or more author/corresponding author, 0.5 mark per paper published in a national journal.	25
2	Presentation and publication of technical papers in referred national and international seminars, conferences, symposiums, etc.: 1 mark per every oral presentation in an international conference/seminar and publication in proceedings, 0.5 mark per every oral presentation in a national conference/seminar and publication in proceedings.	10

Table 9.5 B. Research Guidance (Maximum 20 marks)

S.No.	Criterion	Max Marks
1	Research Guidance of PhD Thesis 4.0 marks per every PhD Thesis guided as a supervisor, 2.0 marks per every PhD Thesis guided as a co-supervisor.	10
2	Research Guidance of UG/PG Dissertations 1 mark per every UG/PG Dissertation work guided as a supervisor, 0.5 mark per every UG/PG Dissertation work guided as a co-supervisor.	10

Table 9.5 C. Sponsored projects handled (Maximum 20 marks)

S.No.	Criterion	Max Marks
1	Externally funded R&D Projects handled: For Principal Investigators: 1	15

	mark per every project worth $\leq$ Rs 5 lakhs, 2 marks per every project worth Rs 5 to 25 lakhs, 3 marks per every project worth Rs 25 to 50 lakhs, 4 marks per every project worth $\geq$ Rs 50 lakhs For Co-Investigators: 0.5 mark per every project worth $\leq$ Rs 5 lakhs, 1 mark per every project worth Rs 5 to 25 lakhs, 1.5 marks per every project worth Rs 25 to 50 lakhs, 2 marks per every project worth $\geq$ Rs 50 lakhs.	
2	Industry Sponsored Projects (Consultancy Works) 0.5 mark per every project worth Rs. < 1 lakh , 1 mark per every project worth Rs. 1 to 2 lakhs, 2 marks per every project worth Rs 2 to 4 lakhs, 3 marks per every project worth Rs 4 to 8 lakhs, 4 marks per every project worth $\geq$ Rs 8 lakhs.	5

Table 9.5 D. Text Books / Chapter in a textbook / Technical Reports / Monograms / published (Maximum 5 marks)

S.No.	Criterion	Max Marks
1	Text Books/ Technical Reports / Monograms developed (3 marks per textbook, 2 marks per technical report or monogram, 1 mark per each chapter written).	5

Table 9.5 E. Other Professional Recognitions & Contributions (Maximum 20 marks)

S.No.	Criterion	Max Marks
1	Patents awarded: 1 mark for each international/national patent.	6
2	Member of editorial board of scientific and technical journals/ Reviewer of Technical papers 1 mark per each assignment as member of editorial board, or reviewer of papers of technical journals.	4
3	Professional recognitions: Awards/ best papers etc. 1 mark per each award/ best paper.	3
4	Representation in Policy making bodies & Technical committees 1 mark	3

	per representation in each policy making body/ technical committee.	
5	International collaborations /short research visit to foreign university. 1 mark per each collaboration.	2
6	Professional body memberships 0.5 mark per membership in each professional body.	2

9.6 Consultancy Projects

If there is a substantial contribution by the faculty member and the staff in the consultancy project and no resources of the College (like laboratory, computer, software etc. utilized), the members involved in the consultancy project will take 70% of the total net amount so received by the Institution and 30% will go to the College. If there is more than 1 person involved in the consultancy project, the amount will be equally distributed.

If the resource of the College such as laboratory facilities, computing facilities, drafting and other facilities have been utilized in the consultancy project, the share of the College will be 50% of the net amount so received from the consultancy work and 50% will go to the faculty and other staff involved in the consultancy work.

The consultancy Fee should have: Capital cost, Consumables, Salaries of the personnel recruited for the work, Contingency, the consultancy fee of the faculty proposing consultancy service and 20% overheads.

A professional fund may be created by factoring 2.5% of the overheads which the individual faculty can use for: travelling to attend conferences, travelling abroad, for buying books, for annual fees of Professional Societies, for buying laptop or Computer etc.


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