Department of Physics
Maharshi Dayanand University Rohtak
(NAAC Accredited 'A' Grade)

Strategic Plan (2018-2023)

About the Department

Department of Physics was established in 1976 under Faculty of Physical Sciences. The Department is internationally known for its contribution in Material Science, Semiconductors and Laser Physics. Department of Physics runs M.Sc. Physics and Ph.D. Physics. The Department has been financially strengthened by DST-FIST (Level –I), UGC-SAP DRS1 and UGC Innovative grant in the last six years. There are nine regular Teaching Faculty Members in the Department.

Vision

The Department being one of the oldest since 1976, holds a special place in the university on the basis of rigorous teaching, both applied and basic research resulting in well trained manpower to meet the societal as well as national objectives.

Mission

The Department of Physics since inception has been actively involved in dissemination of knowledge both at post-graduate level and at doctoral level. The Department strives for excellence in both basic as well as applied research with an objective to produce qualified manpower based upon:

- Constantly updated curriculum and ongoing quality research
- Acquired knowledge for career in education, research, defence, industries etc.
- Research programs for research resulting in high impact publications, patents and training
- Expertise with advance research infrastructure for the real-time problems

Strategic Goals

Flexibility is necessary to combat undesired effects in rapidly changing science, society and technology. In an era of advances in science and changing society, the department will adopt planning in response to change and to emerging opportunities.

For this purpose following strategic plan is proposed:

- As teaching and learning process is an important part of academics. So content of the syllabi will be revised according to advancements in the respective fields.

- Due to advancement in theoretical physics computational calculations will be promoted in the department. For this purpose, computational infrastructure will be enhanced by purchasing new softwares and hardwares. Because of fast changing technologies and advancement in experimental accuracy, enhancement in experimental infrastructure is necessary for the department. So we will make efforts to upgrade M.Sc. laboratories and research laboratories through the development of new experiments and new equipments.
- Advanced methods of classroom learning such as flipped classrooms, mind mapping, smart boards, overhead projectors etc. may be introduced.
- Efforts will be made to introduce digital learning in the department.
- Students will be encouraged to participate in cultural activities.
- Assessment and evaluation methods will be improved in examination system with time.
- Induction and welcome programs may be organized to introduce students to the department.
- Extension lectures by eminent resource persons will be organised to aware students about the recent developments in different fields.
- Inter departmental Science-Quiz will be organised.
- Efforts will be made to organise National/International conferences.
- Educational tours will be arranged to visit National Laboratories/Institutes.
- National Science day will be celebrated.
- Consultation programs will be arranged to encourage the students for National and International Scholarships/Fellowships.
- Lectures on carrier counselling and placement will be organised.
- Relationship with the different employers and alumni will be strengthened for better employment of the students of the department.
- System of feedback from the parents as well as students will be strengthened for the improvement/ upliftment of the department.
- Wider range of ideas and opinions are key factors for advancements of science. Diversity ensures the contribution of wide range of ideas and opinions in the development of science. Efforts will be made to sustain diversity in the department by ensuring an inclusive climate, welcoming to all students, faculty and staff regardless of caste, religion, culture, gender, sexual orientation and disability status.

SWOC Analysis

Strength

- Qualified and experienced faculty
- Continuous updation of curriculum in the light of current R &Drequirements
- Market and Industry friendly courses

- Liaison between physics department and research labs.
- Strong democratic and scientific system of departmental administration
- Expert lectures and interaction with eminent persons
- Counseling, guidance and mentoring of students

Weakness

- Lacking international faculty
- Vacant Teaching/ Technical / Support staff positions
- Inadequate alumni support
- Soft skill issues of students from rural background
- Shortage of infrastructure and aged research facilities

Opportunities

- Excellent employment avenues
- Huge scope for expansion and growth
- Increasing demand for physics post-graduates
- Increasing avenues in higher research
- Inter-disciplinary applications such as Nano-Technology, Bio-Technology and Computer Science

Challenges

- Mushrooming of Private universities / Engineering colleges and upcoming state universities
- Higher pay packages in education in private sector
- PG courses in affiliated colleges
- Fast changing innovations at national/international level
- Rapid advancement of technology

Action Plan

2018-19

- ✓ As teaching and learning process is an important part of academics. So content of the syllabi will be revised according to advancements in the respective fields.
- ✓ Because of fast changing technologies and advancement in experimental accuracy, enhancement in experimental infrastructure is necessary for the department. So we will make efforts to upgrade M.Sc. laboratories and research laboratories through the development of new experiments and new equipments.

- ✓ Due to advancement in theoretical physics computational calculations will be promoted in the department. For this purpose, computational infrastructure will be enhanced by purchasing new softwares and hardwares.
- ✓ National Science day will be celebrated to make the students feel proud to be physics students.
- ✓ System of feedback from the parents, students and alumni will be strengthened for the improvement/upliftment of the department.
- ✓ Latest edition of relevant text books along with their e- copies will be procured to enrich the departmental library.
- ✓ Relationship with the different employers and alumni will be strengthened for the employment of the students.
- ✓ Faculty members will be encouraged to submit research projects to various funding agencies.
- ✓ Efforts will be made to collaborate with national and international institutions.
- ✓ Best practice for mentoring and carrier development for faculty and staff that promote equitable opportunities for carrier success will be implemented.
- ✓ The honest ethical practices of scholarship and teaching are essential in the academic environment. We will make efforts to inculcate these qualities in our students.

2019-20

- ✓ Advanced methods of classroom teaching and learning such as flipped classrooms, smart boards, overhead projectors etc. may be introduced.
- ✓ Efforts will be made to advertise physics courses and make the course contents accessible to engineering students at all levels to enhance connection between technology, industry and fundamental physics.
- ✓ Full utilisation of the existing facilities in the department such as equipment and instruments will be ensured.
- ✓ Consultation programmes will be arranged to encourage the students for national and international scholarships/fellowships.
- ✓ Extension lectures by the eminent resource persons will be organised to aware the students about the recent developments in the different streams sciences.
- ✓ Efforts will be made to organise national/ international conferences.
- ✓ Awareness about the environmental effects on health and hygiene will be inculcated in students through lectures and seminars.
- ✓ Inter-departmental science quizzes will be organised.
- ✓ Educational tours will be arranged to visit national laboratories/ institutes.
- ✓ Efforts will be made for proper documentation of the departmental activities, students and alumni database etc.

2020-21

- ✓ Faculty members will be encouraged to adopt innovative methods for class room teaching like brain mapping etc.
- ✓ Efforts will be made to introduce process of digital learning.
- ✓ Quality research will be encouraged in the department.

- ✓ Students as well as faculty members will be encouraged for interdisciplinary research.
- ✓ Alumni will be invited for the carrier counselling of the students in the department.
- ✓ Students-teachers and parents- teachers relationships will be strengthen through existing feedback mechanism.
- ✓ Present evaluation and assessment method of examination will be improved.
- ✓ National science day will be celebrated in the department.

2021-22

- ✓ Syllabi will be reviewed and updated as per advancement in the different fields.
- ✓ Extension lectures by the eminent resource persons will be organised.
- ✓ Relevant textbooks and e-books will be purchased for the departmental library.
- ✓ Educational tour will be arranged.
- ✓ Exiting equipments and apparatus in the laboratories will be reviewed and updated.
- ✓ For the environmental awareness extension lectures and seminars will be organised.
- ✓ Students will be encouraged and motivated to participate in cultural activities.

2022-23

- ✓ Existing digital learning process will be reviewed and enhanced.
- ✓ Efforts will be made to strengthen the national and international collaborations.
- ✓ Honest ethical practice of scholarship and teaching are essential in academic environment. We will make efforts to develop these qualities in the students.
- ✓ National and international conferences will be organised
- ✓ Faculty members and students will be motivated to publish their research work.

Activity Calendar (2018-19)

Odd Semester begins (1st & 3rd Sem M.Sc. Physics)	21.07.2018
Orientation Programme for first year students	After last counselling for admissions
Celebration of Teachers' Day	05.09.2018
Internal Examinations	3rd week of October 2018
Diwali Break	06.11.2018 to 13.11.2018
One day National Workshop	16.11.2018
Semester Examinations	22.11.2018 onwards
Winter Break	18.12.2018 to 31.12.2018
Even Semester begins (Second & Fourth Sem M.Sc. Physics)	01.01.2019
Invited talks	2nd week of January 2019
Two days National Conference	8-9 Feb, 2019
Educational tour	3rd week of February 2019
Celebration of Science Day	28.02.2019 (Invited lectures and poster making competition)
Holi Break	18.03.2019 to 24.03.2019
Internal Examinations	Third week of March
Even semester ends (2nd & 4th Sem . M.Sc. Physics)	30.04.2019
Semester Examinations	01.05.2019 onwards