Key Indicator - 2.3 Teaching - Learning Process

Metric No.	
2.3.1 **QlM**	***Student centric methods, such as experiential learning, participative learning and problem-solving methodologies are used for enhancing learning experiences*** *Write description in maximum of 200 words* • *Upload relevant supporting document* The Department of Physics and Astrophysics offers a two-year (4-semester) Masters' program, with the course structure being revised in 2019 to include elective and open-elective papers, apart from the core theory and practical papers. Various sorts of methodology applied over time to time to enhance learning experiences have been much more strategized in recent times when the department went from the offline to the online/blended mode of teaching in recent times. Such strategies include: 1. Online resources, such as lecture notes (including solved sample problems or hints for solving tutorial problems), links to video lectures or experimental demonstrations, and other study materials being provided to the students before or during the classes, especially the ones being held online either in the Google classrooms platform or in the Microsoft Teams platform. 2. Interactive classroom sessions, with instant quizzes, group discussions, as well as time-bound assignments, with the provision of students' self assessment being emphasized. 3. Online open book examinations, with question papers containing enhanced selections of off-beat or out-of-the-common questions, inclusive of the multiple choice (checkbox type) ones, being methodically devised. The Department, under a vibrant Ph.D. program, offers a plethora of cutting-edge research topics as well. The above strategies are therefore being taken up in the relevant Ph.D. course-work. For more information on the implementation of the above, as well as the revised M.Sc. course structure, visit the respective sub-links of the departmental website: http://physics.du.ac.in/online_teaching.php and http://physics.du.ac.in/courses-of-study-msc.php .
2.3.2 **QlM**	***Teachers use ICT enabled tools including online resources for effective teaching and learning processes during the year*** *Write description in maximum of 200 words* • *Upload relevant supporting document* Various ICT enabled tools, such as the ones for ppt/pdf presentations, categorized quizzes/assignments/demonstrations are being used by the teachers of the department from time to time. In particular, during the nation-wide lockdown in 2020, and the aftermath of that, the online mode of teaching being the only available

	option, the classrooms have been set up online either in the Google classrooms platform or in the Microsoft Teams platform. The online facilities made accessible by the DUCC are duly utilized in such classrooms. Besides, unofficial google-groups, Whatsapp-groups, Telegram-groups, etc. have been set up by some teachers, involving the students of their respective classes, to share study materials and exchange ideas, as well as for general conversations/notifications. In the Lab-based classes, publicly available virtual labs (for some experiments) have been utilized, apart from resorting to comprehensive demonstrations using the online resources, and continuous evaluation of online presentations of students' works. For more information visit the departmental web-link: http://physics.du.ac.in/online_teaching.php .
2.3.3 **Q_nM**	***Ratio of students to mentor for academic and other related issues during the year*** 2.3.3.1: Number of mentors: **38** Number of students assigned to each mentor: **~ 7 to 10** **Year** | **2019-20** **Number of mentors** | **38** Formula Mentor/Mentee: **38/301 = 0.128** *Data requirement:* • *Number of mentors* • *Number of students assigned to each Mentor* • *Upload the data template* • *Upload relevant supporting document* **(Data template is not applicable to this metric)** **The complete list of mentor-mentee available in the department would be uploaded soon in the department's website http://physics.du.ac.in/ .**

2.4.4 **Q_nM**	***Total number of full time teachers who received awards, recognition, fellowships at State, National, International level from Government/Govt. recognised bodies during the year*** **Year** | **2019-20** **Number** | **09** *Data Requirement:* • *Number of full time teachers receiving awards from State, National, International level* • *Number of full time teachers* • *Upload the data template* • *Upload relevant supporting document* **See Table under 3.1.3 below.**

2.6.1 QlM	***The institution has stated learning outcomes (generic and programme specific)/graduate attributes which are integrated into the assessment process and widely publicized through the website and other documents*** *Write description in maximum of 200 words* • *Upload relevant supporting document* **Visit the following departmental web-links, for the requisite information: http://physics.du.ac.in/courses-of-study-msc.php , and the sub-links of the Research page under http://physics.du.ac.in/index.php .**
2.6.2 QlM	***Attainment of Programme outcomes, Programme specific outcomes and course outcomes are evaluated by the institution during the year*** *Describe the method of measuring the level of attainment of POs , PSOs and COs in not more than 200 words.* • *Upload relevant supporting document* **Visit the following departmental web-links, for the requisite information: http://physics.du.ac.in/courses-of-study-msc.php , and the sub-links of the Research page under http://physics.du.ac.in/index.php .**

3.1.1 Q_lM	***The institution Research facilities are frequently updated and there is well defined policy for promotion of research which is uploaded on the institutional website and implemented*** • *Upload relevant supporting document* **Visit the sub-links of the Research page under http://physics.du.ac.in/index.php , for the requisite information.**

3.1.3 Q_nM	***Number of teachers receiving national/international fellowship/financial support by various agencies for advanced studies/research during the year*** **Year** 2019-20 **Number of teachers** 09 *Data Requirement:* • *Name of the teacher received national/international fellowship/financial support by various agencies for advanced studies/research* • *Name of the award received*

- *Year received*
- *Awarding Agency*

File Description

- *Upload the data template*
- *Upload relevant supporting document*

List of fellowship/financial support received by Teachers:

Name of the Teacher	Name of the Award	Year in which received	Awarding Agency
Prof. B. C. Choudhary	Nominated Spokesperson, Indian Institutions	2019	DST- Fermilab Collaboration in Neutrino Physics
Prof. Kirti Ranjan	Compact Muon Solenoid (CMS) Upgrade, Operation and Utilization	2019, 2020	DST-DAE in collaboration with CMS, CERN, Switzerland
Dr. Sourav Sur	Outstanding Reviewer Award	2019	Institute of Physics (IOP) Publishing, Bristol, United Kingdom
Dr. Debabrata Mishra	CrysX: crystallographic tools for the Android platform --Cover page feature.	2019	Journal of Applied Crystallography, IUCR, ISSN: 1600-5767
Prof. Samit Kumar Mandal	Presentation in International Conference in Nuclear Physics, Russia	2019	SERB (International Travel Funding)
Prof. Shyama Rath	Presentation in AVS 66th International Symposium & Exhibition, Ohio, USA	2019	University of Delhi, India
	Defect assessment in Implanted 4H-SiC crystals Grant for and Detectors using Optical and Ion-Beam techniques	2020	Inter-University Accelerator Center (IUAC), India
Prof. Patrick Dasgupta	Nominated President	2020	Indian Associated General Relativity and Gravitation (IAGRG), India
Prof. Debajyoti Choudhury	“Hunting Invisibles: Dark	2020	European Union (Horizon 2020

		sectors, Dark matter and Neutrinos — HIDDeN".		research and innovation programme under the Marie Sklodowska Curie grant agreement)
	Dr. Ajit Kumar Mahapatro	SAKURA SCIENCE Exchange Program	2020	JST, Japan
		Joint Secretariatship, Executive Council	2020	Electron Microscope Society of India

3.1.4

QnM

Number of JRFs, SRFs, Post-Doctoral Fellows, Research Associates and other research fellows enrolled in the institution during the year

Year	2019	2020 *
Number	25	12

*Based on partial data available

Data Requirement:

- *Name of Research fellow*
- *Year of enrolment*
- *Duration of fellowship*
- *Type of the fellowship*
- *Granting agency*

File Description

- *Upload the data template*
- *Upload relevant supporting document*

List of Ph.D. students enrolled as JRFs in 2019-20 :
(Based on partial data available)

Name of the Research Fellow	**Year of Enrollment**	**Duration of Fellowship** (Extendable)	**Type of Fellowship**	**Granting Agency**
Dinesh Yadav	2019	2 years	CSIR-JRF	CSIR
Gunjan Yadav	2019	2 years	DU Non-NET	Delhi Univ.
Rohit	2019	2 years	CSIR-JRF	CSIR
Manjita Yadav	2019	2 years	DU Non-NET	Delhi Univ.
Kirti Kumar	2019	2 years	Ad-hoc Faculty	
Varshi	2019	2 years	Ad-hoc Faculty	

Brijender Dahiya	2019	2 years	Ad-hoc Faculty	
Chanchal Yadav	2019	2 years	Ad-hoc Faculty	
Shagun Nagpal Nethi	2019	2 years	Ad-hoc Faculty	
Bhumika Nimiwal	2019	2 years	INSPIRE-JRF	INSPIRE
Gaurav Kumar	2019	2 years		
Pratibha Kumari	2019	2 years	UGC-JRF	UGC
Tanya Srivastava	2019	2 years	DU Non-NET	Delhi Univ.
Saraswati Rawat	2019	2 years	INSPIRE-JRF	INSPIRE
Ajay Kumar Sao	2019	2 years		
Pragjyotish Bhuyan Gogoi	2019	2 years		
Imran Hussain	2019	2 years	CSIR-JRF	CSIR
Ankita Khandelwal	2019	2 years	DU Non-NET	Delhi Univ.
Hemant Kumar	2019	2 years	CSIR-JRF	CSIR
Phurba Sherpa	2019	2 years	CSIR-JRF	CSIR
Mahesh Kumari Saini	2019	2 years	CSIR-JRF	CSIR
Jema	2019	2 years	DU Non-NET	Delhi Univ.
Manraj Meena	2019	2 years	UGC-JRF	UGC
Ishwar Singh	2019	2 years		
Vishal Gupta	2019	2 years		
Chetna	2020	2 years	Ad-hoc Faculty	
Rakhi Kumari	2020	2 years	INSPIRE-JRF	INSPIRE
Kumar Gaurav	2020	2 years		
Monika	2020	2 years		
Rohini Kumari	2020	2 years	UGC-JRF	UGC

	Rahul Chauhan	2020	2 years		
	Sukhdeep Singh	2020	2 years		
	Priyambada Kameshwar	2020	2 years	DU Non-NET	Delhi Univ.
	Prerna Singh Rawat	2020	2 years		
	Shuvam Maharana	2020	2 years		
	Priyanka	2020	2 years		
	Yudhvir	2020	2 years		

Key Indicator - 3.2 Resource Mobilizations for Research

Metric No.	
3.2.1 **Q_nM**	***Extramural funding for Research (Grants sponsored by the non-government sources such as industry, corporate houses, international bodies for research projects) endowments, Chairs in the University during the year (INR in Lakhs)***

Year	2019-20
Number	NIL

Data Requirement:

- *Name of the Project/ Endowments, Chairs*
- *Name of the Principal Investigator*
- *Department of Principal Investigator*
- *Year of Award*
- *Funds provided*
- *Duration of the project*

File Description

- *Upload the data template*
- *Upload relevant supporting document*

3.2.2 **Q_nM**	***Grants for research projects sponsored by the government agencies during the year (INR in Lakhs)***

Year	2019-20
Number	1162 *

* Including both the continuing projects and the newly sanctioned projects

Data Requirement:

- *Name of the Project*
- *Name of the Principal Investigator*
- *Department of Principal Investigator*

- *Year of Award*
- *Funds provided*
- *Duration of the project*
- *Funding Agency*
- *Total amount of funds received*

File Description

- *Upload the data template*
- *Upload relevant supporting document*

Name of the Investigator	**Title of the project and duration**	**Amount sanctioned**	**Funding Agency**
Prof. Sanjay Jain	*Pre-evolutionary processes in autocatalytic RNA networks* *2018 - 2021*	*Rs. 17.73 Lakhs*	*CEFIPRA* *(Indo-French)*
	Centre of Excellence in Genome Sciences and Predictive Medicine (Phase II) *2015 - 2020*	*Rs. 32.85 Lakhs*	*DBT*
Prof. B.C. Choudhary *Prof. Debajyoti Choudhury* *Prof Samit Kr Mandal*	*Indian Institutions - Fermilab Collaboration in neutrino physics* *2019 - 2024*	*Rs. 2,80,71,000/*	*DST*
Prof. Debajyoti Choudhury	*"Probing New Physics Interactions"* *2019 - 2022*	*Rs. 75,00,000/*	*SERB*
Prof. S. Annapoorni	*"Magneto-Optic and Plasmonic Response in magnetic core-shell structures and magnetic multilayers"* *2017 - 2020*	*Rs. 67,407,42/*	*SERB-DST*

	Prof. H.P. Singh	*"Galactic & Extragalactic Archeology using Variable Stars"* *2019-2022*	*Rs 16 Lakhs*	*CSIR*	
		Indo-US Joint Networked Center "Theoretical Analyses of Variable Star Data in the Era of Large Surveys" *2018-2020*	*Rs. 46 Lakhs*	*DST (Indo-US joint network)*	
	Prof. Vinay Gupta	*Fabrication of Lamb Wave Devices on SiO2/Si* *2019 - 2024*	*Rs. 4,28,03,200/*	*ER & IPR*	
		Optimization of TiOx film and patterning of the polymer (PI-2610) as sacrificial layer for pixel fabrication *2018 - 2029*	*Rs. 22.19 Lakhs*	*DRDO*	
	Prof. T. R. Seshadri	*Magnetic Fields as Probes for Astrophysical Phenomena* *2017-2020*	*Rs. 25 Lakhs*	*SERB-DST*	
	Prof. Binay Kumar	*Fabrication and characterization of piezoelectric nanocrystals-organic hybrid sheet for energy harvesting and pressure sensor.* *2016 - 2019*	*RS. 72 Lakhs*	*SERB-DST*	
	Prof. Nivedita Deo	*Functional Domains and Site Correlation Networks in Evolving Protein Families*	*Rs. 23.84 Lakhs*	*SERB - DST*	

		2017 - 2020			
	Prof. Amarjeet Kaur	*"Low Cost Energy Saving Electrochromic Devices Based on Nanostructured ConductingPolymers for Energy Storing Smart Windows* *2017 -2020*	*Rs.39.5 Lakhs*	*SERB-DST*	
	Prof. Amita Chandra	*Polymer composites for energy devices: Structure-property relationship* *2017-2020*	*55000 Euro* *Rs. 45,41,623*	*Alexander von Humboldt* *Foundation,* *Germany*	
	Prof. Samit K Mandal	*Multi-nucleon transfer reaction dynamics and its effect on fusion near the Coulomb barrier for medium mass nuclei* *2019 - 2022*	*Rs. 41,74,557/-*	*SERB-DST*	
		Investigation of few-nucleons transfer and fusion reactions mechanism in medium mass nuclei at and near the Coulomb barrier *2015 -2019*	*Rs. 6.03 Lakhs*	*IUAC (UGC)*	
	Prof. S.A. Hasmi	*Development of Flexible-Solid-StateCapacitors based on Sodium Ion Conducting Gel Polymer Electrolytes* *2017 - 2020*	*Rs. 57,95,002/*	*SERB -DST*	
	Dr. Awadhesh Parsad	*Understanding the perpetual points in nonlinear dynamical systems*	*Rs. 23 Lakhs*	*SERB-DST*	

		2017 - 2020			
	Dr Suresh Kumar	*Search for large Octupole collectivity and high-spin near N=126 shell closure* *2019 - 2022*	*Rs. 7 Lakhs*	*UGC-DAE-CRS Kolkata, India*	
		Investigation of the high spin states in the A=85 mass region using Ion-beam gamma-ray spectroscopy *2017 - 2020*	*Rs 4.2 Lakhs*	*IUAC - UGC*	
	Dr. Ashok Kumar	*R&D of GEM detectors for Scientific and Medical Applications* *2015 - 2019*	*Rs. 23.48 Lakhs*	*DST*	
	Dr. S.K. Chamoli	*Search for Quadrupole and Octupole collectivity in nuclei of mass A~150 region* *2019 - 2022*	*Rs. 23,13696/-*	*SERB-DST*	
	Dr. Jyoti Rajput	*Exploring molecular growth of hydrocarbons in slow (energy 1 keV or less) Ion-molecule collisions* *2019 - 2020*	*Rs. 33.11 Lakhs*	*SERB-DST*	
	Dr. Ashutosh Bhardwaj	*Simulation studies and tests to develop radiation tolerant silicon detectors for High luminosity colliders,* *2017 - 2020*	*Rs. 10.8 Lakhs*	*SERB-DST*	
		Application of neutron damage model for reliable performance of silicon sensors in present	*Rs. 5 Lakhs*	*Institute of Eminence,* *Delh Univ.*	

		and future high energy physics experiments *2020 - 2021*			
	Dr. D.N. Gupta	*Electron and ion acceleration from laser-plasma interactions* *2015 - 2020*	*Rs. 9.64 Lakhs*	*DST-DAAD*	
		Tunable radiation source from laser-plasma based nonlinearities *2015 - 2020*	*Rs. 15.98 Lakhs*	*DST & Russian Foundation of* *Basic Research*	
		Compact "Table-top" powerful terahertz source by laser-matter interactions and some applications *2020 - 2022*	*Rs. 25 Lakhs*	*DST & Russian Foundation of* *Basic Research*	
	Dr. Ajit Mahapatro	*Investigation of Thermoelectric (TE) Properties of Calcium Cobalt Oxide (Ca3CO4O9) and Graphene Derivatives (as nano-inclusions) for TE Generator Applications* *2017 - 2019*	*Rs. 9.83 Lakhs*	*SSPL- DRDO*	
	Dr. Debabrata Mishra	*To Design and Develop a novel spin controlled chiral quantum dot DNA bio-sensor* *2019 - 2022*	*Rs. 17,71,000/-*	*SERB-DST*	
		Development of spin dependent smart electrode for DNA bio-sensor.	*Rs. 35.45 Lakhs*	*IMPRINT 2,* *MHRD-DST* *+ Industry*	

		2019 - 2022			
		UGC Start-up grant for faculties joined under Faculty Recharge Program *2018 - 2019*	*Rs. 6,00,000/-*	*UGC*	
		Development of electrochemical bent shaped DNA *2020 - 2021*	*Rs. 2,50,000/-*	*Institute of Eminence,* *Delh Univ.*	
	Dr Sumalay Roy	*Depth resolved investigations of microstructures of metal/topological insulator interfaces* *2020 - 2023*	*Rs. 1,35,000.00*	*UGC-DAE CSR* *and RRCAT,* *Indore, India*	
		Growth of periodic multi-bi-layer structures of high Z metals on the surface of three dimensional topological insulators *2019 - 2022*	*Rs. 29,15,000.00*	*SERB-DST*	
		UGC Start-up grant for faculties joined under Faculty Recharge Program *2018 - 2019*	*Rs. 6,00,000/-*	*UGC*	

3.2.3

Q_nM

Number of research projects per teacher funded by government and non-government agencies during the year

Year	2019-20
Number	36/23=1.565 *

* Including both the continuing projects and the newly sanctioned projects

Data Requirement:

- *Name of Principal Investigator*
- *Duration of project*
- *Name of the research project*
- *Amount / Fund received*

	• *Name of funding agency* • *Year of sanction* • *Department of recipient* *File Description* • *Upload the data template* • *Upload relevant supporting document*

Key Indicator - 3.3 Innovation Ecosystem

Metric No.	
3.3.1 **Q_lM**	***Institution has created an eco-system for innovations including Incubation centre and other initiatives for creation and transfer of knowledge*** Describe available incubation centre and evidence of its usage (activity) within a maximum of 200 words • Upload relevant supporting document Visit the departmental website http://physics.du.ac.in/ and the institutional website http://du.ac.in/ for the requisite information.

3.3.3 **Q_nM**	***Number of awards / recognitions received for research/innovations by the institution/teachers/research scholars/students during the year*** 3.3.3.1: Total number of awards / recognitions received for *research*/innovations won by institution/teachers/research scholars/students year wise during the year **Year** | 2019-20 * **Number** | NIL * As per the departmental record. *Data Requirement:* • *Name of the Awardee* • *Name of the Awarding Agency with contact details* • *Year of Award* *File Description* • *Upload the data template* • *Upload relevant supporting document*

3.4.4 **Q_nM**	***Number of Ph.D's awarded per teacher during the year*** **3.4.4.1: How many Ph.D's are awarded during the year** **3.4.4.2: Number of teachers recognized as guides during the year** **Year** | 2019 | 2020 **Number** | 13 | 19 *Data Requirement:* • *Name of the PhD scholar* • *Name of the Department*

- *Name of the guide/s*
- *Year of registration of the scholar*
- *Year of award of PhD*

File Description

- *Upload the data template*
- *Upload relevant supporting document*

The following is the list of Ph.Ds awarded during 2019-20:

Name of the Ph.D. scholar	Name of the Guide(s)	Year of Registration	Year of Award
Ram Krishna Sharma	Dr. Md. Naimuddin	2012	2019
Saurabh Kunj	Prof. K. Sreenivas	2012	2019
Vishal Choudhary	Prof. Amarjeet Kaur	2012	2019
M. Boazbou Newmai	Dr. P. Senthil Kumar	2012	2019
K. Rojeeta Devi	Dr. Suresh Kumar	2012	2019
Manoj Kumar Verma	Dr. P. Senthil Kumar	2012	2019
Nisha Rani	Prof. A. Mukherjee, Dr. Deepak Jain	2012	2019
Khusboo	Prof. Samit Kumar Mandal	2013	2019
Herendra Kumar	Dr. Jyoti Rajput	2013	2019
Ramesh Kumar	Prof. Amarjeet Kaur	2013	2019
Chongtham Jiten	Dr. K. Chandramani	2013	2019
Sheetal Dewan	Prof. Vinay Gupta	2014	2019
Avneet Singh	Prof. Vinay Gupta	2014	2019
Akashrup Banerjee	Prof. Samit Kumar Mandal	2013	2020
Monika Sharma	Prof. S. Murugavel	2013	2020
Azeem-U-Shaan Banday	Prof. S. Murugavel	2013	2020
Geetika Jain	Dr. Ashutosh Bhardwaj	2013	2020
Sumit Keshri	Prof. Kirti Ranjan	2013	2020
Sukirti Gumber	Dr. P. K. Jha, Prof. ManMohan	2013	2020
Prabhjot Singh	Prof. B. C. Choudhary	2013	2020
Sweta Gaurav	Prof. Avinash Khare	2013	2020
Manish Kumar Shukla	Prof. Avinash Khare	2013	2020

Monika Jamdegni	Prof. Amarjeet Kaur	2014	2020
Priyanka	Prof. Kirti Ranjan	2014	2020
Ram Kishor Sharma	Prof. T. R. Seshadri	2014	2020
Divya Sachdeva	Prof. Debajyoti Choudhury, Prof. A. Mukherjee	2014	2020
Neeraj Kumar	Dr. Shashi Verma	2014	2020
Satish Kumar	Dr. Ajit Kumar Mahapatra	2014	2020
Shaan Ameer	Prof. Vinay Gupta	2015	2020
Surbhi Gupta	Dr. Monika Tomar	2016	2020
Abid Hussain	Prof. Binay Kumar	2016	2020
Sahil Goel	Prof. Binay Kumar	2016	2020

For further information, and the complete list of Recognized Ph.D. Supervisors, from the Department of Physics and Astrophysics as well as the Physics departments of colleges affiliated to the University of Delhi, visit http://physics.du.ac.in/courses-of-study-phd.php .

3.4.5

QnM

Number of research papers per teacher in the Journals notified on UGC website during the year

Year	2019-20 *
Number	335/39 = 8.59

* Based on data available upto 31 March 2020

Data Requirements:

- *Title of paper*
- *Name of the author/s*
- *Department of the teacher*
- *Name of journal*
- *Year of publication*
- *ISBN/ISSN number*

File Description

- *Upload the data template*
- *Upload relevant supporting document*

Following is the List of Publications in API format:

In 2019

1. Abdelaziz, A.H.M., Kumar, P. & Sarma, A.K. 2019, "Effective focusing of a diverging atomic beam by a sequence of alternatively chirped few-cycle pulsed laser fields", *Physical Review A,* vol. 99, no. 2.
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In 2020 (till 31 March)

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3.4.6

QnM

Number of books and chapters in edited volumes published per teacher during the year

3.4.6.1: Total number of books and chapters in edited volumes / books published, during the year

Year	2019
Number	05

	Data Requirement: • *Name of the teacher:* • *Title of the book published:* • *Name of the author/s:* • *Name of the publisher: National / International* • *National / international: ISBN/ISSN number of the proceeding* • *Year of publication:* *File Description* • *Upload the data template* • *Upload relevant supporting document* 1. Prof. P. Das Gupta, `Three faces of Aharanov-Bohm Phase', in Lectures on Quantum Mechanics: Fundamentals and Applications, eds. Anirban Pathak and Ajoy Ghatak (Viva Books Pvt. Ltd., 2019). 2. Prof. P. Das Gupta, `Artificial Intelligence, Free Will, Physics and all that useless ruminations', Echo (Physics Journal, St. Stephens College), 6-8, March Issue (2019). 3. Prof. N. Deo, `Evolution and dynamics of the currency market', Pradeep Bhadola and N. Deo, New Economic Windows, Chapter in book, 2019. 4. Prof. S. Mahajan, `Higher Education in the Sciences in India', Indian Science Education, Edited by S. Irfan Habib and Dhruv Raina, 2019. 5. Dr. S. K. Kar, `Non-commutative Geometry: A Perspective on String and Field Theories', World Scientific, Singapore, 2019.

3.4.7

Q_nM

E-content is developed by teachers:

1. For e-PG-Pathshala
2. For CEC (Under Graduate)
3. For SWAYAM
4. For other MOOCs platform
5. For NPTEL/NMEICT/any other Government Initiatives
6. For Institutional LMS

Options:

A. Any 5 or all of the above
B. Any 4 of the above
C. Any 3 of the above
D. Any 2 of the above ✓
E. None of the above

Data Requirements:

- *Name of the teacher:* **Dr. Supriya K. Kar**
- *Name of the module:* **Mapping for UG/PG**
- *Platform on which module is developed:* **SWAYAM**
- *Date of launching e-content:* **2020**
- *Number of platforms on which e-content has been developed by teachers*

File Description

- *Upload the data template*
- *Upload relevant supporting document*

3.6.2

QnM

Number of awards received by the Institution, its teachers and students from Government /Government recognised bodies in recognition of the extension activities carried out during the year

3.6.2.1: Total number of awards and recognition received for extension activities from Government / Government recognised bodies during the year

Year	2019-20
Number	NIL

Data Requirement:

- *Name of the activity*
- *Name of the Award/ recognition*
- *Name of the Awarding Government/Government recognized bodies*
- *Year of the Award*

File Description

- *Upload the data template*
- *Upload relevant supporting document*

3.6.3 **QnM**	***Number of extension and outreach programs conducted by the institution including those through NSS/NCC/Red cross/YRC during the year (including Government initiated programs such as Swachh Bharat, Aids Awareness, Gender Issue, etc. and those organised in collaboration with industry, community and NGOs)*** **Year** 2019-20 **Number** 1 *Data Requirement:* • *Name and number of the extension and outreach Programmes* • *Name of the collaborating agency: Non-government, industry, community with contact details* *File Description* • *Upload the data template* • *Upload relevant supporting document* **Activity: Mega Science project exhibition at New Delhi from January to March 2020.** More information on various other outreach programmes could be found in the department's website http://physics.du.ac.in/
3.6.4 **Q_nM**	***Total number of students participating in extension activities listed at 3.6.3 above during the year*** **Year** 2019-20 **Number** ~ 1000 *Data Requirement:* • *Name of the activity* • *Name of the scheme* • *Year of the activity* • *Number of students participating in such activities* *File Description* • *Upload the data template* • *Upload relevant supporting document*

Key Indicator - 3.7 Collaboration

Metric No.	
3.7.1 **Q_nM**	***Number of collaborative activities with other institutions/research establishment/industry for research and academic development of faculty and students during the year*** 3.7.1.1: Total number of Collaborative activities with other institutions/research establishment/industry for research and academic development of faculty and students during the year **Year** 2019-20 **Number** 36

Data Requirement:

- *Title of the collaborative activity*
- *Name of the collaborating agency with contact details*
- *Source of financial support*
- *Year of collaboration*
- *Duration*
- *Nature of the activity*

File Description

- *Upload the data template*
- *Upload relevant supporting document*

Collaborating Teacher	Name of Collaborator / Agency	Source of Financial Support	Year(s) of Collaboration	Duration	Nature of Activity
Prof. B. C. Choudhary	India-CMS Collaboration at CERN, Geneva, Switzerland	DST	2014 – 2020	6 years	Fundamental Research
	Indian Institutions & Fermilab Collaboration in Neutrino Physics	DST	2019 – 2024	5 years	Fundamental Research
Prof. Kirti Ranjan	Indo-Italy Collaboration on Detectors	DST	2017 – 2019	2 years	High Energy Physics Research
	India-CMS Collaboration at CERN, Geneva, Switzerland	DST	2014 – 2020	6 years	Fundamental Research
Prof. Nivedita Deo	Institute of Fundamental Studies, Naresuan University, Thailand		2016 –		Research on Protein Networks
Prof. Shyama Rath	Indian Council for Cultural Relations (ICCR), India	Delhi Univ. and ICCR, India	2020		Collaborative academic works as a panelist in hosting foreign students at Delhi Univ.
	Departamento de Física Atómica, Molecular y Nuclear, Facultad de Física,		2019		Collaborative Research

		University of Sevilla, Spain				
		Physics Department, University of Torino and INFN, Torino, Italy		2019		Collaborative Research
		Department of Physics, University of Surrey, Guildford, Surrey, United Kingdom		2019		Collaborative Research
		Center for Accelerator Science, ANSTO, Australia		2019		Collaborative Research
		Sandia National Laboratories, Radiation-Solid Interactions, Albuquerque, NM, USA		2019		Collaborative Research
		Intl. Atomic Energy Agency, Vienna, Austria		2019		Collaborative Research
		Solid State Physics Lab, DRDO, New Delhi, India		2020		Collaborative Research
		NPL, New Delhi, India		2020		Collaborative Research
		Inter-University Accelerator Centre (IUAC), New Delhi, India		2020		Collaborative Research
		National Chemical Laboratory, Pune, India		2020		Collaborative Research
		Institute of Physics, Bhubaneswar India		2020		Collaborative Research
	Prof. Vinay Gupta	Prof. A. P. Freundorfer and Prof. M.				Collaborative Research

	Sayer, Queens Univ., Kingston, Canada				
	Dr. A. Kapoor, Solid State Physics Lab, DRDO, New Delhi, India				Collaborative Research
	Dr. G. Gupta and Dr. A. Kumar, NPL, New Delhi, India				Collaborative Research
Prof. H. P. Singh	Indo-US Collaboration with Nodal Institute: Delhi Univ., India				Theoretical Astrophysics Research
Prof. Samit Kumar Mandal	FAIR Collaboration, GSI, Germany				Nuclear Physics Research
	AGATA Collaboration, European Union				Nuclear Physics Research
	PRESPEC Collaboration, GSI, Germany				Nuclear Physics Research
	INO Collaboration, India				High Energy Physics Research
	INGA Collaboration, India				High Energy Physics Research
Dr. D. N. Gupta	Strathclyde University, Glasgow		2020 –		Experimental Research using GPU based high-speed computing and petawatt laser facilities
Dr. Jyoti Rajput	Inter-University Accelerator Centre (IUAC), New Delhi, India	SERB-DST	2019 – 2022	3 years	Joint Research Project
Dr. Ajit Kumar Mahapatro	Prof. Y-R Ma and Prof. Y-K Cuo, Department of Physics, National Dong Hwa University,				Collaborative Research

	Hualien, Taiwan					
	Dr. S. P. Singh, NPL, New Delhi, India					Collaborative Research
	Prof. S. Ghosh, JNU, New Delhi, India					Collaborative Research
	Prof. T. Basu, AMITY, Noida, India					Collaborative Research
	Dr. P. Poddar, NCL, Pune, India					Collaborative Research
Dr. Ashutosh Bhardwaj	CMS Experiment RD50 Collaboration	DST				High Energy Physics Research
Dr. Sourav Sur	Prof. Saurya Das, Department of Physics and Astronomy, University of Lethbridge, Alberta, Canada		2019 –			Quantum Gravity and Cosmology Research
Dr. Sumalay Roy	UGC-DAE CSR, Indore, India	UGC-DAE CSR, Indore, India	2019 – 2021	3 years		Experimental Research using central facilities and large equipments

3.7.2

Q_nM

Number of functional MoUs with institutions/industries in India and abroad for internship, on-the-job training, project work, student/faculty exchange and collaborative research during the year

Year	2019-20
Number	NIL

Data Requirement:

- *Organisation with which MoU is signed*
- *Name of the institution/ industry*
- *Year of signing MoU*
- *Duration*
- *List the actual activities under each MoU*
- *Number of students/teachers participated under MoUs*

File Description

- *Upload the data template*
- *Upload relevant supporting document*

Criterion IV – Infrastructure and Learning Resources

Key Indicator - 4.1 Physical Facilities

4.2.3

Q_nM

Annual expenditure for purchase of books/e-books and subscription to journals/e-journals during the year (INR in Lakhs)

Year	2019-20
Number	2.23548

Data Requirement:

- *Expenditure on the purchase of books*
- *Expenditure on the purchase of journals in i^{th} year*
- *Year of expenditure:*
- *Upload the data template*
- *Upload relevant supporting document*

The following is the list of Books Purchased for the CARPA Library of the department, via the Central Science Library (CSL) of Delhi University:

Central Science Library

Printed On : 06/04/2021 12:31 PM

Acc. No.	Class No.	Author	Title	Year
$95.00 - 0000P07534	CN30, Q9-;1 Carpa	Kiritsis Elias	String theory in a nutshell	2019
-do- - 0000P07535	CN30, Q9-;1 Carpa	Kiritsis Elias	String theory in a nutshell	2019
Rs.1595.00 0000P07536	C9B36, Q9 Carpa	Peskin Michael E	Concepts of elementary particle physics	2019
€129.95 - 0000P07537	CN2, Q9 Carpa	Sadovskii Michael V	Statistical physics	2019
£ 88.99 - 0000P07538	B38, Q9 Carpa	Krantz Steven G	Complex variables: A physical approach with applications	2019
£ 69.99 - 0000P07539	D65,8(B)94Mt, Q9 Carpa	Kharab Abdelwahab; Guenther Ronald B	Introduction to numerical methods: A MATLAB approach	2019
$ 158.00 - 0000P07540	C9B36:(F), Q9.10 Carpa	Chou Alexander W Ed.; Chou Weiren Ed.	Reviews of accelerator science and technology	2019
$ 38.00 - 0000P07541	B96, R0 Carpa	Woolfson Michael M	About stars: Their formation, evolution, compositions, locations and companions	2020
$98.00 - 0000P07542	C21:(D), R0 Carpa	Zhang Ye Ed.; Xu Bing Ed.	Soft nanomaterials	2020
$ 99.95 - 0000P07543	C21, Q9 Carpa	Galsin Joginder Singh	Solid state physics: An introduction to theory	2019
₹1495.00 - 0000P07544	CN1, Q9 Carpa	Srinivasan S	Quantum physics: Evolution and applications	2019
$125.00 - 0000P07545	C9B3, Q9 Capra	Willmott Philip	Introduction to synchrotron radition: Techniques and applications	2019
£ 110.00 - 0000P07546	C7:(B75:3), Q9 Carpa	Goedbloed Hans; Keppens Rony; Poedts Stefaan	Magnetohydrodynamics of laboratory and astrophysical plasmas	2019
£120.00 - 0000P07547	B713, Q8 Carpa	Stronge W J	Impact mechanics	2018
£ 54.99 - 0000P07548	B96, Q9 Carpa	Guidry Mike	Stars and stellar processes	2019
€ 49.95 - 0000P07549	C51, Q9 Carpa	Yan Jixiang	Optical electronics: An introduction	2019
€ 99.99 - 0000P07550	C9B, Q8 Carpa	Demtroder Wolfgang	Atoms, molecules and photons: An introduction to atomic-, molecular-and quantum physics	2018
$98.00 - 0000P07551	C18, R0 Carpa	Li Baojiu Ed.; Koyama Kazuya Ed.	Modified gravity: Progresses and outlook of theories, numerical techniques and observational tests	2020
₹995.00 - 0000P07552	C:(B), Ro-;2 Carpa	Balakrishnan V.	Mathematical physics with applications, problems and solutions	2020
-do- 0000P07553	C:(B), Ro-;2 Carpa	Balakrishnan V.	Mathematical physics with applications, problems and solutions	2020
-do- 0000P07554	C:(B), Ro-;2 Carpa	Balakrishnan V.	Mathematical physics with applications, problems and solutions	2020
$70.00 - 0000P07555	C9B3, Q9 Carpa	Martin Brian R; Shaw Graham	Nuclear and particle physics: An introduction	2019
£ 115.00 - 0000P07556	C6:212:(D), Q9 Carpa	Banerjee Jyoti Prasad; Banerjee Suranjana	Physics of semiconductors and nanostructures	2019
₹5395.00 - 0000P07557	C9B36, Q4 Carpa	Kamal Anwar	Particle physics	2014
$ 29.95 - 0000P07558	CN2,4:7, L1;2-;4 Carpa	Landsberg Peter T Ed.	Problems in thermodynamics & statistical physics	1971
-do- 0000P07559	CN2,4:7, L1;2-;4 Carpa	Landsberg Peter T Ed.	Problems in thermodynamics & statistical physics	1971
-do- 0000P07560	CN2,4:7, L1;2-;4 Carpa	Landsberg Peter T Ed.	Problems in thermodynamics & statistical physics	1971
£111.00 - 0000P07561	C5, Q9 Carpa	De Via Cinzia; Betta Gian-Franco Dalla; Parker Sharwood	Radiation sensors with 3D electrodes	2019
$68.00 - 0000P07562	B270bC, P7;Q9 Carpa	Ma Zhong-Qi	Group theory for physicists	2019
$99.95 - 0000P07563	D65,8(B)94Mt, Q9 Carpa	Lindfield George; Penny John	Numerical methods using MATLAB	2019
₹5395.00 0000P07564	C21, N9 Carpa	Daoud M Ed.; Williams C E Ed.	Soft matter physics	1999
₹3595.00 - 0000P07565	C211, Q3 Carpa	Zabel Hartmut Ed.; Farle Michael Ed.	Magnetic nanostructures: Spin dynamics and spin transport	2013
₹3995.00 - 0000P07566	B9:8, P9 Carpa	Rich James	Fundamentals of cosmology	2009
$58.00 - 0000P07567	C0bC, R0 Carpa	Babusci Danilo; Dattoli Giuseppe; Licciardi Silvia; Sabia Elio	Mathematical methods for physicists	2020
£55.99 - 0000P07568	C3, Q8 Carpa	Roth Michael W	Modeling and simulation of everyday things	2018
£ 76.99 - 0000P07569	C21, Q9 Carpa	Chatterjee Ashok; Mukhopadhyay Soma	Polarons and bipolarons: An introduction	2019
₹5995.00 - 0000P07570	C21:(D), Q2 Carpa	Raza Hassan Ed.	Graphene nanoelectronics : Metrology, syenthesis, properties and applications	2012
₹ 989.00 - 0000P07571	CN1, P0;1-;10 Carpa	Bransden B.H; Joachain C J	Quantum Mechanics	2007
-do- 0000P07572	CN1, P0;1-;10 Carpa	Bransden B.H; Joachain C J	Quantum Mechanics	2007
-do- 0000P07573	CN1, P0;1-;10 Carpa	Bransden B.H; Joachain C J	Quantum Mechanics	2007
-do- 0000P07574	CN1, P0;1-;10 Carpa	Bransden B.H; Joachain C J	Quantum Mechanics	2007

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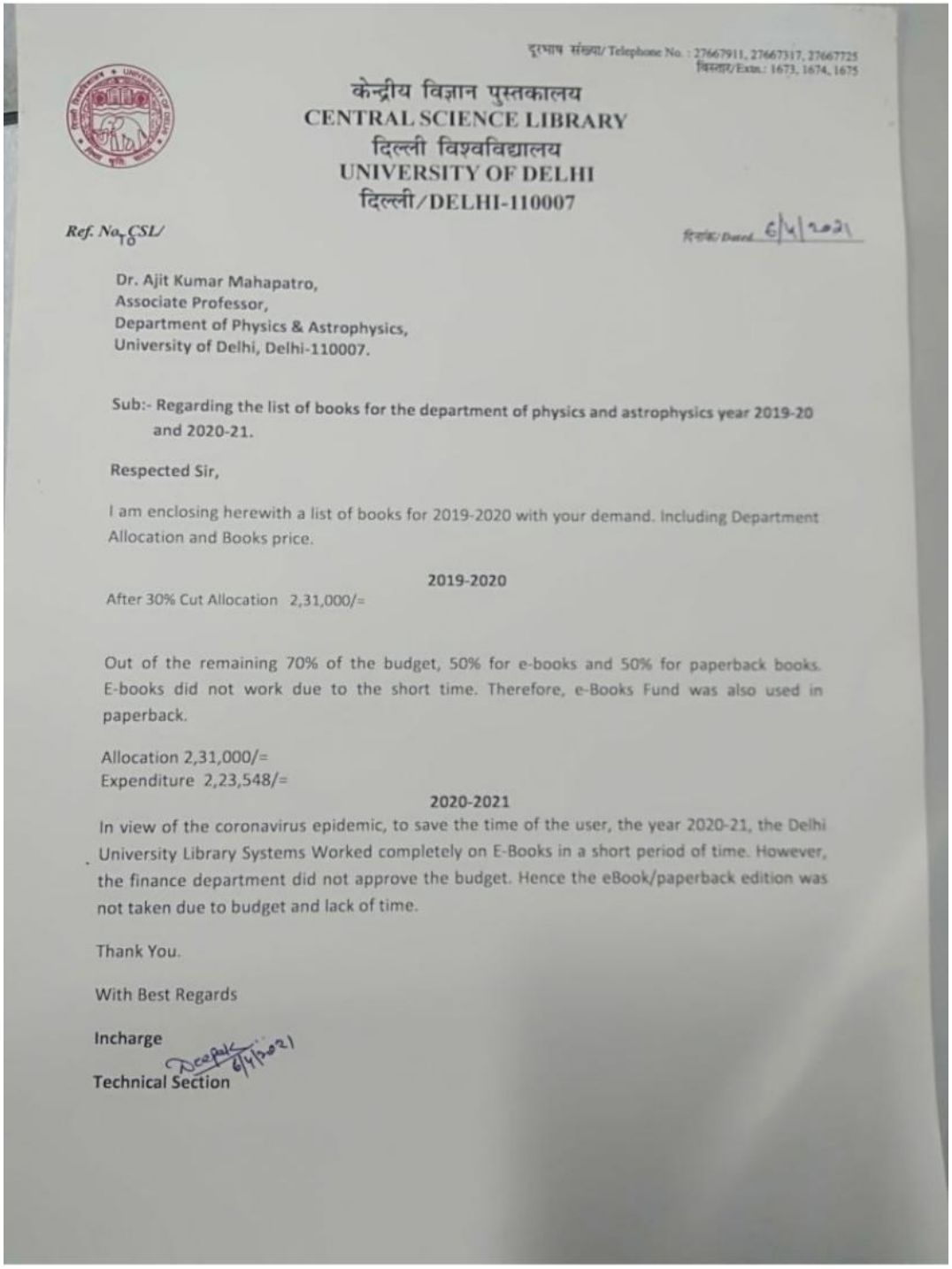
₹989.00	0000P07575	CN1, P0;1-;10 Carpa	Bransden B.H; Joachain C J	Quantum Mechanics	2007
-do-	0000P07576	CN1, P0;1-;10 Carpa	Bransden B.H; Joachain C J	Quantum Mechanics	2007
-do-	0000P07577	CN1, P0;1-;10 Carpa	Bransden B.H; Joachain C J	Quantum Mechanics	2007
-do-	0000P07578	CN1, P0;1-;10 Carpa	Bransden B.H; Joachain C J	Quantum Mechanics	2007
-do-	0000P07579	CN1, P0;1-;10 Carpa	Bransden B.H; Joachain C J	Quantum Mechanics	2007
-do-	0000P07580	CN1, P0;1-;10 Carpa	Bransden B.H; Joachain C J	Quantum Mechanics	2007
₹895.00	0000P07581	CN2, M8;2-;11 Carpa	Mandl F.	Statistical physics	1971
-do-	0000P07582	CN2, M8;2-;11 Carpa	Mandl F.	Statistical physics	1971
-do-	0000P07583	CN2, M8;2-;11 Carpa	Mandl F.	Statistical physics	1971
-do-	0000P07584	CN2, M8;2-;11 Carpa	Mandl F.	Statistical physics	1971
-do-	0000P07585	CN2, M8;2-;11 Carpa	Mandl F.	Statistical physics	1971
-do-	0000P07586	CN2, M8;2-;11 Carpa	Mandl F.	Statistical physics	1971
-do-	0000P07587	CN2, M8;2-;11 Carpa	Mandl F	Statistical physics	1971
-do-	0000P07588	CN2, M8;2-;11 Carpa	Mandl F	Statistical physics	1971
-do-	0000P07589	CN2, M8;2-;11 Carpa	Mandl F	Statistical physics	1971
-do-	0000P07590	CN2, M8;2-;11 Carpa	Mandl F	Statistical physics	1971
$98.00	0000P07591	C4:7, Q9 Carpa	De Fontaine Didier	Principles of classical thermodynamics: Applied to materilas science	2019
£18.99	0000P07592	CxM79, Q0 Carpa	Van Dorgen Jeroen	Einstein's unification	2018
£110.00	0000P07593	C5:72:(D), R0 Carpa	Taylor Travis S.	Introduction to laser science and engineering	2020
$68.00	0000P07594	CN2, Q9 Carpa	Wang Jinhui; Ricardo Bernard	Competitive physics: Mechanics and waves	2019
$200.00	0000P07595	C21:(D), Q8 Carpa	Barhoum Ahmed Ed.; Makhlouf Abdel Salam Hamdy Ed.	Fundamentals of nanoparticles: Classifications, synthesis methods, properties and characterization	2018



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दिनांक/Dated 6/4/2021

To

Dr. Ajit Kumar Mahapatro,
Associate Professor,
Department of Physics & Astrophysics,
University of Delhi, Delhi-110007.

Sub:- Regarding the list of books for the department of physics and astrophysics year 2019-20 and 2020-21.

Respected Sir,

I am enclosing herewith a list of books for 2019-2020 with your demand. Including Department Allocation and Books price.

2019-2020

After 30% Cut Allocation 2,31,000/=

Out of the remaining 70% of the budget, 50% for e-books and 50% for paperback books. E-books did not work due to the short time. Therefore, e-Books Fund was also used in paperback.

Allocation 2,31,000/=
Expenditure 2,23,548/=

2020-2021

In view of the coronavirus epidemic, to save the time of the user, the year 2020-21, the Delhi University Library Systems Worked completely on E-Books in a short period of time. However, the finance department did not approve the budget. Hence the eBook/paperback edition was not taken due to budget and lack of time.

Thank You.

With Best Regards

Incharge

Accepted 6/4/2021

Technical Section

Key Indicator – 4.3 IT Infrastructure

4.3.1

Q_nM

Number of classrooms and seminar halls with ICT - enabled facilities such as LCD, smart board, Wi-Fi/LAN, audio video recording facilities during the year

Year	2019-20
Number	~ 50

Data Requirements:

- *Number of classrooms with LCD facilities*
- *Number of classrooms with Wi-Fi/LAN facilities*
- *Number of seminar halls with ICT facilities*

File Description

- *Upload the data template*
- *Upload relevant supporting document*

Details of computing and networking facilities available presently in the department:

	Total Computers	Computer Labs for M.Sc	Documen -tation Centre	Dept. Office	Other Teaching Labs
Existing PC	**190**	**70+5**	**~54**	**~11**	**~50**
Sever	**5**	**3**	**3**		
Workstation	**2**		**2**		
Cluster – Sever 32 nodes for higher computation	**1**		**1**		

4.4.2

Q_lM

There are established systems and procedures for maintaining and utilizing physical, academic and support facilities - laboratory, library, sports complex, computers, classrooms etc.

Describe policy details of systems and procedures for maintaining and utilizing physical, academic and support facilities within maximum of 200 words

- *Upload relevant supporting document*

	General policy of the University of Delhi is followed. No separate policy has been taken up by the Department.

Key Indicator - 5.2 Student Progression

Metric No.	
5.2.1 **Q_nM**	***Number of students qualifying in state/ national/ international level examinations during the year (eg: NET/SLET/GATE/GMAT/CAT/GRE/TOEFL/Civil Services/State government examinations)*** 5.2.3.1: Number of students who qualified in state/ national/ international examinations (e.g.: IIT/JAM/NET/SET/JRF/GATE/GMAT/CAT/ GRE/TOEFL/Civil Services/State government examinations) during the year: **Year** | 2019-20 **Number** | ~ 60 - 80 5.2.3.2: Number of students who appeared in state/ national/ international examinations (e.g.: IIT/JAM/ NET/SLET/GATE/GMAT/CAT/ GRE/TOEFL/Civil Services/State government examinations) during the year: **Year** | **Number** | *Data Requirement:* *Number of students who cleared* • *IIT-JAM* • *NET* • *SET* • *JRF* • *GATE* • *GMAT* • *CAT* • *GRE* • *TOEFL* • *Civil Services* • *State Government examinations* *File Description* *Upload the data template* *Upload relevant supporting document* **Information Not Available**
5.2.2 **Q_nM**	***Total number of placement of outgoing students during the year*** **Year** | **Number** | *Data Requirement:*

	• *Name of the employer with contact details* • *Number of students placed* *File Description* • *Upload the data template* • *Upload relevant supporting document* **Information Not Available**
5.2.3 **Q_nM**	***Number of recently graduated students who have progressed to higher education (previous graduating batch) during the year*** **Year** | **Number** | *Data Requirement:* *Number of students proceeding from* • *UG to PG* • *PG to MPhil* • *PG to PhD* • *MPhil to PhD* • *PhD to Post-doctoral* *File Description* • *Upload the data template* • *Upload relevant supporting document* **Information Not Available**

Key Indicator - 5.3 Student Participation and Activities

Metric No.	
5.3.1 **Q_nM**	***Number of awards/medals won by students for outstanding performance in sports/cultural activities at inter-university/state/national/international events (award for a team event should be counted as one) during the year*** **Year** | **Number** | *Data Requirement:* • *Name of the award/ medal* • *Inter-university/State/National/ International* • *Name of the event* *File Description* • *Upload the data template* • *Upload relevant supporting document* **Information Not Available**

5.3.2 Q1M	***Presence of Student Council and its activities for institutional development and student welfare.*** *Describe the Student Council and its activities for institutional development and student welfare within a maximum of 200 words* • *Upload relevant supporting document* "The Physics Society" is a forum for the students of the department. It provides them with a platform to engage in the departmental life and enrich it with their academic as well as non-academic activities and participation. The membership of the society consists of currently enrolled M.Sc. and Ph.D. students of the department. The society organizes lectures, seminars by eminent speakers from time to time. It also organizes educational trips to various other academic institutions within the country, and fresher and farewell events for incoming and outgoing students. The constitution of the society is as follows: The head of the department is the ex-officio president of the society. The other office bearers of the society are: • Prof Avinash Khare (Faculty) • Mr. Dhiraj Kumar (Vice President, Physics Society) • Mr. Vikash Jangra (Secretary, Physics Society) • Mr. Anshul Malik (Jt. Secretary, Physics Society) All the office bearers of the society (except the president) are elected by students for a period of one year. The society is advised in its functioning by a departmental advisory committee constituted by the head of the department. **For more information visit: http://physics.du.ac.in/physics_society.php .**

Key Indicator - 6.2 Strategy Development and Deployment

Metric No.	
6.2.1 **QlM**	***The institutional Strategic plan is effectively deployed.*** *Describe one successfully implemented activity based on the strategic plan within a maximum of 200 words* • *Upload relevant supporting document* **Vision:** Excel in generation and imparting of scientific knowledge; inculcate among student the spirit of enquiry, intellectual adventure, and the concern for fellow human beings on the planet. **Mission:** To impart to the students the beauty and grandeur of the subject of Physics, the connection of the latter with other disciplines, as well as its vast potential to enrich human lives. To develop the abilities of generating and communicating knowledge, and build a scientific temper with the sense of social responsibility.

	To conduct outstanding research leading to the discovery of new scientific facts and the methodology of applying them in the way of benefiting the larger living world. **Implementation:** For the relevant supporting documentation, including the Annual Report, visit the "About us" page of the departmental website http://physics.du.ac.in/index.php .

Key Indicator - 6.3 Faculty Empowerment Strategies

6.3.4

Q_nM

Total number of teachers undergoing online/ face-to-face Faculty Development Programmes (FDP)during the year (Professional Development Programmes, Orientation / Induction Programmes, Refresher Course, Short Term Course)

Year	2019	2020
Number	04 (in 7 programmes)	06 (in 11 programmes)

Data Requirement:

- *Name of teachers*
- *Title of the Programme*
- *Duration (From - to)*

File Description

- *Upload the data template*
- *Upload relevant supporting document*

Name of the teacher	Title of the Programme	Programme Duration
Dr. Md. Naimuddin	Workshop on "High Energy Physics Theory and Detector Physics", Sultan Qaboos University, Oman	31 March – 4 April 2019
Dr. Sanjay Kumar Chamoli	One week Workshop on "MOOCs, E-content Development and Open Educational Resources", CPDHE, Delhi University, New Delhi, India	12 July – 18 July 2019
Dr. Suresh Kumar	Workshop on Incorporating both technical and human elements to reduce hazards and vulnerabilities in sensitive facilities, Gujarat, India	14 May - 16 May 2019

		IUAC School on “Nuclear Reaction”, IUAC, New Delhi, India	15 July – 20 July 2019
		Training course on “Nuclear Security”, Gujarat, India	4 September – 6 September 2019
		Training Workshop on “Developing Emerging Nuclear Security Practitioners”, Gujarat, India	20 November – 22 November 2019
		Short Term course on “Gender Sensitization”, CPDHE, Delhi University, New Delhi, India	13 February – 19 February 2020
		Workshop on E-content Development and Online Pedagogy on the theme “ICT TOOLS for ONLINE TEACHING”, CPDHE, Delhi University, New Delhi, India	23 May – 29 May 2020
		Online WGCapD Webinar Series on “Remote Sensing in Crop Monitoring and Assessment” by Indian Institute of Remote Sensing (IIRS), ISRO, India	19 May – 9 June 2020
	Dr. Pandian Senthil Kumar	17th Refresher course in “Physical Sciences & Nano Sciences”, HRDC, JNU, New Delhi, India	18 November – 30 November 2019
	Prof. Shyama Rath	Three weeks “Leadership for Academicians Programme (LEAP)” jointly implemented by the University of Delhi and Judge Business School, University of Cambridge, United Kingdom, funded by MHRD, India	1 March – 20 March 2020
	Dr. Sumalay Roy	Two weeks Online Refresher Course in Engineering, Physical Science and Management, sponsored by IEEE, AICTE, India	22 June – 4 July 2020
	Prof. Kirti Ranjan	Resource Person for	14 October – 18 October 2020

		FDP on “Innovation in Scientific Research Methods”, organized under DBT star college scheme, Kirori Mal College, Delhi University, New Delhi, India	
	Dr. Devki Nandan Gupta	Two weeks FDP on "Quantitative Methods for Data Analysis", sponsored by MHRD and Delhi University, New Delhi, India	12 August – 25 August 2020
		Two weeks FDP on “Ambient Technologies: State-of-Art, Challenges, and Future Directions”, Jaypee University of Information Technology, Waknaghat, Himachal Pradesh, India	25 July – 8 August 2020
		One week FDP on “Earth & Environment Response during COVID-19 (Physics)”, sposored by MHRD and Pune University, Pune, India	11 July – 17 July 2020
		Two weeks FDP on "Learning Advanced e-tools for MOOCs Development & Research, Ramanujan College, Delhi University, New Delhi, India	1 September – 14 September 2020
	Dr. Jyoti Rajput	Annual Refresher Programme in Teaching (ARPIT- 2020) -- “Climate Change: A Guide For Teachers Of All Disciplines”	16 Weeks starting from 1 December 2020

Key Indicator – 6.4 Financial Management and Resource Mobilization

6.4.3 **Q_nM**	***Funds/Grants received from non-government bodies, individuals, philanthropists during the year for development and maintenance of infrastructure (not covered under Criteria III and V) (INR in Lakhs)***

	Year 2019-20 **Number** NIL *Data Requirement:* • *Name of the non-government funding agencies/ individuals* • *Funds/ Grants received* *File Description* • *Upload the data template* • *Upload relevant supporting document*

Criterion VII - Institutional Values and Best Practices

Key Indicator - 7.1 Institutional Values and Social Responsibilities

	Gender Equity
7.1.1 **QlM**	***Measures initiated by the Institution for the promotion of gender equity during the year*** *Highlight the curricular and co- and extra-curricular activities promoting gender equity and sensitization and the facilities available for women on campus (within a maximum of 200 words).* *Provide the weblink to:* • *Annual gender sensitization action plan(s)* • *Specific facilities provided for women in terms of:* a. *Safety and security* b. *Counseling* c. *Common rooms* d. *Daycare Centre* e. *Any other relevant information* *Upload relevant supporting document* **A spacious Ladies' Common Room, with adequate privacy arrangements, has been set up in the department in 2019. There is a specific departmental committee to look into the issues related to sexual harassment as well, following the UGC regulations. For more information visit the departmental web-link http://physics.du.ac.in/committee_sexual-harassment-cell.php .**
7.1.3 **QlM**	***Describe the facilities in the Institution for the management of the following types of degradable and non-degradable waste (within a maximum of 200 words)*** • ***Solid waste management*** • ***Liquid waste management*** • ***Biomedical waste management*** • ***E-waste management*** • ***Waste recycling system*** • ***Hazardous chemicals and radioactive waste management***

	Upload relevant supporting document **General management plan and infrastructure of the University of Delhi regarding disposal and recycling of wastes under the mentioned categories is being followed and utilized.**

7.1.7 **Q_nM**	***The Institution has a disabled-friendly and barrier-free environment*** 1. Ramps/lifts for easy access to classrooms and centres. 2. Disabled-friendly washrooms 3. Signage including tactile path lights, display boards and signposts 4. Assistive technology and facilities for persons with disabilities: accessible website, screen-reading software, mechanized equipment, etc. 5. Provision for enquiry and information: Human assistance, reader, scribe, soft copies of reading materials, screen reading, etc. **Options:** A. Any 4 or all of the above B. Any 3 of the above C. Any 2 of the above ✓ D. Any 1 of the above E. None of the above Upload relevant supporting document **(Data template is not applicable to this metric)**