

# Department of Physics, University College of Science Mohanlal Sukhadia University, Udaipur-313001 (India)

## M.Sc. Physics Post Graduate (Two Years : Semester) Course

The M.Sc. Physics Post Graduate (Two Years with semester scheme) Course is being offered by the Department of Physics at University College of Science Campus, which is a constituent college of the Mohanlal Sukhadia University, Udaipur. The Department has developed excellent laboratory and computational facilities to train students of M.Sc. Physics under UGC-COSIST and DST-FIST Programmes. Department welcomes candidates from India and abroad to pursue advanced studies in Physics. Medium of instruction as well as that of examination is English. Outstation candidates are normally provided with hostel accommodation.

### Curricula

The course has been designed as per the UGC Model curricula for Physics. Besides the practicals, students are also required to undertake a project. Details of the papers to be offered during their study in M.Sc. are:

#### M. Sc. (Semester-I)

##### Theory Papers

- I. Mathematical Methods in Physics
- II. Classical Mechanics
- III. Quantum Mechanics-I
- IV. Electronics

##### Practical

- General Physics Laboratory  
Electronics Laboratory

#### M. Sc. (Semester-II)

##### Theory Papers

- I. Computational Methods in Physics
- II. Quantum Mechanics-II
- III. Statistical Mechanics
- IV. Electrodynamics

##### Practical

- Laboratory Project  
Computational Physics Laboratory

#### M. Sc. (Semester-III)

##### Theory Papers

- I. Atomic and Molecular Physics
  - II. Solid State Physics
  - III. Nuclear and Particle Physics
- Elective Subject (Select one paper out of IVA-C)

- IVA Plasma Physics  
IVB Theoretical Methods in Condensed Matter Physics  
IVC Radiation Physics

##### Practical

- Modern Physics Laboratory  
Elective Laboratory

#### M. Sc. (Semester-IV)

##### Theory Papers

- I. Experimental Techniques in Physics
- Special paper-I (select one out of IIA-C)
- IIA Atmospheric Physics
  - IIB Condensed Matter Physics -I
  - IIC Microwave Electronics
- Special paper-II (select one out of IIIA-D)

- IIIA Ionospheric Physics
- IIIB Astronomy and Astrophysics
- IIIC Condensed Matter Physics- II
- IIID Materials Science
- IV Project

##### Practical

- Specialization Lab -I  
Specialization Lab -II

## NUMBER OF SEATS : 35

The intake capacity in Post graduate course is 35 seats which includes 25 seats with Normal Fees while 10 seats are “Self Finance Seats”

## Course Fees

The structure of Fees for the candidates admitted against the seats with “Normal fees” is given in the University Information booklet. Students admitted against the “Self Finance Seats” shall pay Rs, 10,000/- (likely to be revised) in addition to “Normal Fees” every year.

## **General Guidelines**

### A. APPLICATION FORM AND ITS SUBMISSION

1. Each candidate seeking admission in M. Sc. Physics Course will have to appear in an Entrance Test to be conducted by the Department on Monday the 28<sup>th</sup> June, 2010 from 2.00 p.m. to 4.00 p.m. (2 hours duration)
2. The application Form along with Information booklet will be available for sale w.e.f. Tuesday, the June 01, 2010 during office hours by paying Rs 500/- in cash (for SC/ST candidates, Rs 250/-) or by sending Demand draft for Rs 550/- (for SC/ST candidates Rs 300/-) in favour of “Head, Department of Physics” drawn at any bank in Udaipur. This will include the cost of the Application Form and Entrance Test Fee.
3. Completed Application form submitted in person or by registered Post should reach this office on or before Saturday 22<sup>nd</sup> June 2010 (up to 5.00 p.m.) The Application Form must accompany the attested photocopy of the mark sheet of B.Sc First year, Second year and Third year. Application form without mark sheets of all the three years of qualifying examination will be rejected. If final year result of the qualifying examination is not declared, candidates can submit their application form with first and second year mark sheet at their own risk and third year mark sheet of such candidates must be presented before a prescribed date to be notified by the Department later.
4. The photograph must be attested by a Gazetted Officer/I class Magistrate/Principal of the last institution attended.
5. Incomplete application Forms and Forms received after last date and time will be rejected.

### B. ELIGIBILITY

Students passing B.Sc. Three year Degree Course Examination and having secured a minimum of 50% marks in aggregate will be eligible for admission in M.Sc. Physics Course. Candidates from outside the State of Rajasthan seeking admission in this course will be eligible only if they secured minimum of 60% (I Division) marks. Candidates who have appeared in the qualifying examination and their result is awaited, may appear in the Entrance Test on their own risk. They must submit a copy of the mark sheet to this office before declaration of results of the Entrance Test.

Candidates belonging to SC/ST/OBC categories will be eligible for admission on the minimum pass marks. Candidates appearing in supplementary Examination of the qualifying examination will not be eligible for admission.

### C. RESERVATION OF SEATS

The reservation of seats will be made in accordance with the statutory provision made by the University for various categories. As per the existing provisions the reservation of seats shall be made as per following:

- |  |     |
|--|-----|
| 1. Candidates belonging to SC category                     | 16% |
| 2. Candidates belonging to ST category                     | 12% |
| 3. Candidates belonging to OBC category                    | 21% |
| 4. Candidates belonging to Physically Handicapped category | 3%  |

Other reservations shall be made as per university rules

Note : In case of any dispute regarding eligibility and reservation/relaxations, the guidelines provided in the University Information Bulletin will be treated as final.

- (a) Candidates belonging to SC/ST/OBC shall be required to produce a certificate from a District Magistrate /SDM/Tehsildar to claim the reservation benefit.
- (b) In case of non-availability of the candidates from Reservation category the vacant seats will be filled by General Category candidates as per rules. In case of Physically Handicapped candidates they will produce a Medical Certificate indicating at least 40% disability by a doctor not less than a Reader (Associate Prof.) in a Medical College or by a Junior Specialist/CMHO where there is no Medical College.

#### D. SCHME OF ENTRANCE TEST

The Entrance Test for admission to M.Sc. Physics Course (Two Years) will be held on Monday 28<sup>th</sup> June 2010 at University College of Science (M.B. College), Durga Nursery Road, Udaipur. The duration of test will be 2 hrs. The test paper will contain 100 Multiple Choice Questions (MCQs)

**Note :** There will be no negative marking.

#### E. SYLLABUS

The syllabus of the entrance test will be that of B.Sc. (Physics) of Mohanlal Sukhadia University, Udaipur.

#### F. MODEL QUESTIONS

1. Coriolis force acting on a practical moving on the surface of the earth depends upon the velocity in :  
(A) Vertical direction (B) Northern direction  
(C) Eastern direction (D) Western direction
2. A grating has an area of 2 cm X 2 cm and has 600 ruling /cm. In the third order spectrum the resolving power of the grating is :  
(A) 12000 (B) 18000  
(D) 24000 (E) 36000
3. Radius of an electron is derived from :  
(A) the scattering of electrons by electrons (B) the scattering of electrons by atoms  
(C) energy of an electron in hydrogen atom (D) rest mass energy of the electron
4. Varactor diodes are used  
(A) for voltage stabilization (B) as negative resistance deice.  
(C) for changing capacitance in high frequency circuit (D) for switching on heavy currents.
5. Shell model of the nucleus is successful in explaining the  
(A) number of neutrons and protons in a stable nuclei (B) size of nucleus  
(C) total angular momentum of nuclei (D) deformation in the shape of nuclei

#### G. METHOD OF EXAMINATION

Marking of answers in OMR sheets

1. The candidates will be required to mark their answer on OMR sheets (Optically Marked Response Sheet) by blackening the appropriate bubbles with the help of HB pencil
2. Each candidate will bring HB pencil and an eraser during the Entrance Test. They are advised to avoid smudging of the response on the OMR sheet in order to avoid complications during computer processing of the sheet.
3. The candidate should go through the instructions given on the Test Booklet to be provided at the time Entrance Test before attempting to answer questions.
4. Change in answer on OMR sheet, if necessary, should be done by properly erasing the wrong answer marked in the bubbles.

## H. ADMISSION PROCEDURE

- 1 Those candidates who fulfill minimum eligibility as laid down by the University and who have appeared in the Entrance Test will be considered for admission in M.Sc Physics Course.
2. Candidates will be admitted in the course by providing 50% weightage to the marks obtained in Entrance Test while 50% weight age will be given to the marks obtained in optional theory papers only (excluding marks obtained in practicals ) at B.Sc Examination.
3. Category wise merit list will be prepared and results will be declared.

Note:- No weightage of any other kind will be available for admission in this course

## I. EXAMINATION CENTRE

The Entrance Test will be conducted at University College of Science Campus (M.B. College), Durga Nursery Road, Udaipur on the specified date and time.

Hall Tickets will be given to the candidates. They must bring the Hall Ticket with them at the time of the Test.

If a candidates does not bring the Hall Ticket, appearance in the Entrance test would be permitted after due verification of the identity.

### Summary of Information's :-

Activity	Date
1. Commencement of Sale of Application Form and Information Bulletin	01-06-2010
2. Last Date for receiving completed Application Form by this office	22-06-2010 (upto 5 p.m.)
3. Day, Date & Time of Entrance Test	Monday, the 28 <sup>th</sup> June 2010 2:00 pm to 4:00 pm
4. Test Centre	Department of Physics University College of Science (M.B.College), Durga Nursery Road , Udaipur (Raj.)

Note:- The University reserves the right to change the programme of the Entrance Test due to unavoidable circumstances and in such a case the candidates will be informed of the change through News Papers/ individually by post.

### Contact

**Head**  
**Department of Physics**  
**University College of Science (M.B. College)**  
**Durga Nursery Road , Udaipur (Raj.)**

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Website: [www.mlsu.ac.in](http://www.mlsu.ac.in), [www.physicsmlsu.org](http://www.physicsmlsu.org)