Physiology is the science of the mechanical, physical, and biochemical function of humans, and serves as the foundation of modern medicine.

- Physiology connects science, medicine and health to creates a framework for understanding how the human body adapts to stresses, physical activity, and disease.
- Human physiology integrates knowledge across many levels, including biochemistry, organ systems, and the body as a whole.

“The physiology of today is the medicine of tomorrow.”

Ernest H. Starling, Physiologist (1926)
Know the Department

The Department of Physiology is the primary department to have been started when J.N. Medical College came into existence on 2nd October 1962.

- Department was shifted to the present building in June 1971 from the old building of the Department of Physics of Aligarh Muslim University.
- 150 students in MBBS and 40 BDS students are admitted every year since 1996 and are undergoing teaching/training of Physiology.
Know the Department

• There are three paramedical laboratories for the UG students as recommended by Medical Council of India namely
  – Human,
  – Haematology and
  – Mammalian/Amphibian

• Department also provides Neurophysiological support to the hospital patients in form of
  – Nerve Conduction Studies (NCS),
  – Brainstem Evoked Response Audiometry (BERA),
  – Electromyography (EMG) and
  – Visual Evoked Potential (VEP).
Know your faculty

PROF. MOHD MOBARAK HOSSAIN
PROFESSOR, M.D(Physiology)

MOBILE : 9897338554
EMAIL : drmmobarakhossain@yahoo.com

Research interest:
- Depressive and Autonomic disorders.
- Oxidative stress in some brain disorders.
- NCV and Evoke potentials
- Cardiorespiratory functions & EMG in sports person.

LECTURE TOPIC – PHYSIOLOGY OF CARDIOVASCULAR SYSTEM
PRACTICAL LAB ASSOCIATION – HEAMATOLOGY LAB
PROF. DHIRENDRA KUMAR AGRAWAL
M.D(Physiology),DCH
MOBILE : 9837150452
EMAIL : dka33in@yahoo.com
Research interest:
• Neurophysiology
• Reproduction
• Behavioural physiology &
• Sports medicine

LECTURE TOPIC – PHYSIOLOGY OF ENDOCRINE SYSTEM
PRACTICAL LAB ASSOCIATION – HUMAN/CLINICAL LAB
PROF. P. N. SINGH
M.D(Physiology)
MOBILE : 09412333783
EMAIL : pnsingh3551@yahoo.com
Innovation:
• Spectrophotometric method for urinary iodine estimation.
• Mathematical calculation of Mean Cardiac vector.
Research Interest
• Thyroid Physiology

LECTURE TOPIC – BLOOD & IMMUNITY, REPRODUCTIVE PHYSIOLOGY
PRACTICAL LAB ASSOCIATION – HEAMATOLOGY LAB
Know your faculty

PROF. SANGEETA SINGHAL
M.D(Physiology)
Member of Medical education unit, JNMC, AMU.
MOBILE : 91-9837601816
EMAIL : mitsangeeta30@rediffmail.com
Research interest:
• Ergonomics Related With Human Physiology

LECTURE TOPIC – RESPIRATION AND ENVIRONMENTAL PHYSIOLOGY
PRACTICAL LAB ASSOCIATION – HUMAN/CLINICAL LAB
Know your faculty

PROF. RAJIV GULATI
M.D(Physiology), DA

Chairman

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Research Interest:
• Patho-physiology of pre-eclampsia &
• Molecular physiology

LECTURE TOPIC – CENTRAL NERVOUS SYSTEM
PRACTICAL LAB ASSOCIATION – EXPERIMENTAL LAB
PROF. MEENAKSHI GUPTA
M.D(Physiology), DGO
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        drmeenakshi3190@gmail.com

Research interest:
• Excretory Physiology
• Physiology of optics
• Special senses

LECTURE TOPIC – RENAL PHYSIOLOGY, SPECIAL SENSES
PRACTICAL LAB ASSOCIATION – HEMATOLOGY LAB
DR. MOHD ASLAM
M.D(Physiology)
MOBILE  :  9897536213
EMAIL    :  aslamm955@gmail.com
Research Interest:
•  Neuroscience &
•  Nerve muscle physiology

LECTURE TOPIC – DIGESTIVE SYSTEM & HIGHER FUNCTION
PRACTICAL LAB ASSOCIATION – EXPERIMENTAL LAB LAB
Know your faculty

DR. S. AIJAZ ABBAS RIZVI
M.D(Physiology)
MOBILE : 9458436212
EMAIL : aijazrizvi@gmail.com

Research interest:
• Biophysics
• Computational Neurophysiology

LECTURE TOPIC – BIOPHYSICS, NERVE MUSCLE PHYSIOLOGY, ANS
PRACTICAL LAB ASSOCIATION – HUMAN/CLINICAL LAB
Know your faculty

DR. ANWAR HASAN SIDDQUI
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DR. MD.ZABIHULLAH
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EMAIL : zk.kaz1@yahoo.com
Know your faculty

PRACTICAL LAB ASSOCIATION – HEAMATOLOGY LAB

DR. IMRAN KHAN
M.D(Physiology), DCH
MOBILE : 955750028
EMAIL : imran131283@gmail.com

PRACTICAL LAB ASSOCIATION – EXPERIMENTAL LAB

DR. AHMAD FARAZ
M.D(Physiology)
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EMAIL : afaraz83@gmail.com
Know your faculty

PRACTICAL LAB ASSOCIATION – HEAMATOLOGY LAB

DR. KANUPRIYA GUPTA
M.D(Pathology)
MOBILE : 9719736448
EMAIL : drkanupriyagupta84@gmail.com

PRACTICAL LAB ASSOCIATION – EXPERIMENTAL LAB

DR. NIDA KHAN
D.G.O
MOBILE : 9457050127
EMAIL : @gmail.com
## Know your Time table

<table>
<thead>
<tr>
<th>Days</th>
<th>8-9 am</th>
<th>9-10 am</th>
<th>10-11 am</th>
<th>11-12 noon</th>
<th>12-01 pm</th>
<th>1-2 pm</th>
<th>2-3 pm</th>
<th>3-4 pm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tue</td>
<td><strong>Physio. Lect</strong></td>
<td>Anat. Lect</td>
<td>Osteology</td>
<td><strong>Physio. Practicals</strong></td>
<td></td>
<td></td>
<td>Comm. Med</td>
<td>Dissection</td>
</tr>
</tbody>
</table>
HUMAN PHYSIOLOGY LABORATORY

- The human physiology laboratory is designed to facilitate the 1st year undergraduate medical students to acquire the basic required clinical skills.

- To promote effective learning of the skills the laboratory has been divided into two sections viz ; Human Lab I and Human Lab II.

- The basic skills acquired in the Human Physiology Lab are:

<table>
<thead>
<tr>
<th>Human Physiology Lab I:</th>
<th>Human Physiology Lab II:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central Nervous System Examination</td>
<td>Respiratory system examination.</td>
</tr>
<tr>
<td>Abdominal Examination</td>
<td>Measurement of Blood pressure.</td>
</tr>
<tr>
<td>Cardio-vascular system examination</td>
<td>Evaluation of pulse</td>
</tr>
<tr>
<td>Visual aquity testing</td>
<td>Spirometry.</td>
</tr>
<tr>
<td>Perimetry</td>
<td>Electrocardiography (ECG)</td>
</tr>
<tr>
<td>Colour vision testing</td>
<td></td>
</tr>
</tbody>
</table>
AMPHIBIAN PHYSIOLOGY LABORATORY

• The amphibian lab is basically concerned with the understanding of nerve muscle physiology and the effect of various drug preparations on the amphibian heart.

• Through the help of frog and rabbit, the students are provided a complete insight on the various principles of nerve muscle and cardiac physiology.
HEMATOLOGY LABORATORY

- The haematology lab is the place where students are provided basic laboratory skills in the field of blood examinations.
- The manual methods of almost all the human blood investigation are being taught to the undergraduate MBBs & BDS students.
- The experiments taught in the lab includes:

<table>
<thead>
<tr>
<th>Experiment</th>
<th>Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peripheral blood smear examination</td>
<td>Heamoglobin concentration</td>
</tr>
<tr>
<td>Total Leucocyte Count (TLC)</td>
<td>Platelet count</td>
</tr>
<tr>
<td>Differential Leucocyte Count (DLC)</td>
<td>Blood grouping</td>
</tr>
<tr>
<td>Total RBC counts</td>
<td>Bleeding time &amp; clotting time</td>
</tr>
<tr>
<td>Total WBC counts</td>
<td>Total reticulocyte count</td>
</tr>
</tbody>
</table>
Know your Labs Schedule

• Students are divided into three groups viz.
  – Group A – Roll. No. 1 – 50
  – Group B – Roll. No. 51 – 100 and
  – Group C – Roll. No. 101 onwards

• The groups are posted for a period of three months in each of the lab.

• At the end of three months the lab rotation of the group takes place after a lab leaving test.

• Initial division:

  Group A – Human physiology Lab
  Group B – Heamatology Lab
  Group C – Amphibian Lab
Academic Assessment of the undergraduate students comprises of the following:

**Internal Assessment: (40 marks)**
- Theory test (sessional)
- Lab Leaving Examination
- Seminars
- Terminals

1st Professional Final Exams: (160 marks)
- Theory
- Practical &
- Grand Viva voce

**Total Marks 200**
Internal Assessment:

- **Theory test** (sessionals) – Completion of each system/unit will be followed by it’s sessional examination.
- **Lab Leaving Examination** – Three months of Lab posting will be followed by a ‘lab leaving’ examination where marks would be awarded on the basis of viva voce performance and the lab manual.
- **Terminals** – A terminal examination comprising of theory paper and practical.
- **Seminars**
1st Professional Final Exams:

- **Theory (100 marks)**—It comprises of two papers, Paper I and paper II of 50 marks each
- **Practical Exam (40 marks)**—Practical examination of all the three labs will be there to assess the practical skills acquired.
- **Grand Viva (20 marks)**—The practical exam will be followed by a grand viva.

**NOTE!!!!!**

- A minimum of 75% attendance in theory and practical classes along with a minimum of 35% marks in internal assessment is a must to appear in the 1st Professional Final Exams.
- Securing a minimum of 50% marks is essential to pass your 1st Professional Final Exams
Books prescribed

Primary Text books:

Guyton and Hall Textbook of Medical Physiology: 12th edition

Ganong's Review of Medical Physiology, 24th edition

Practical Manual:

(Must buy)

Manual of practical physiology for MBBS/BDS students to be procured from the Department of Physiology.

(Optional buy)

Manual of Practical Physiology for MBBS
Enter to learn

......Depart to serve!!!