

THE PHYSICS MAGAZINE

From theory to truth
— physics leads

YARMOUK
UNIVERSITY

DEPARTMENT
OF PHYSICS

VOLUME1: ISSUE2
JAN-2026

SYLLABUS

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ABOUT PHYSICS :

PHYSICS IS THE SCIENCE DEDICATED TO UNDERSTANDING THE FUNDAMENTAL NATURE OF THE UNIVERSE, FOCUSING ON MATTER, ENERGY, SPACE, AND TIME, AND REVEALING THE ESSENTIAL RULES BY WHICH EVERYTHING MOVES AND INTERACTS.

YARMOUK UNIVERSITY FACULTY OF SCIENCE

Dean Faculty of Science
Prof. Amjad D. Al-Nasser
Email: amjadn@yu.edu.jo



The Faculty of Science, a cornerstone of academic excellence and scientific advancement. Since its establishment in 1976, alongside the founding of our university, the Faculty of Science has played a vital role in shaping the future of education and research. Originally part of the Faculty of Science and Arts, we became an independent institution in 1981, marking the beginning of a journey dedicated to innovation, discovery, and service to society.

DEPARTMENTS

- Physics
- Mathematics
- Chemistry
- Biological Sciences
- Statistics
- Environmental Sciences
- SSC



FACILITY UNITS

- Jordan Natural History Museum
- Animal House
- Glass House
- Green House

FACULTY OF SCIENCE

DEPARTMENT OF PHYSICS



Head of Physics Department
Prof. Muhammad S. Bawa'anah
Email: msbawaaneh@yu.edu.jo
EDITOR-IN-CHEIF of the Jordan Journal
of Physics



The Department of Physics was established in 1976 as part of the Faculty of Science within the Yarmouk University. The Department offers two Bachelor degrees: Bachelor of Physics and Bachelor of Biomedical Physics, as well as two Master degrees: Masters of Science in Physics and Master of Science in Medical Physics. The department has 28 full-time faculty members and is supported by 5 technicians and 1 administrative staff. In Fall 2025, the program has an enrollment of 668 undergraduate students and 32 graduate students.



SPECIALIZATION

NOTABLE PUBLICATIONS

KEY AWARDS

PLASMA PHYSICS

- DISTANCE LEARNING DURING COVID-19 PANDEMIC IN UAE PUBLIC SCHOOLS: STUDENT SATISFACTION, ATTITUDES AND CHALLENGES.
- MICROWAVE PROPAGATION IN WARM,

- ORS AWARD - UK
- BEST TEACHING AND INNOVATION AWARD- KHALIFA UNIVERSITY

FACULTY MEMBERS



Dr.Mohammad Rida Said

Associate Professor

SPECIALIZATION

Solid State physics

NOTABLE PUBLICATIONS

- Mössbauer spectroscopy
 $\text{BaSrNi}_x\text{Co}_{2-x}\text{Fe}_{12}\text{O}_{22}$ hexaferrite
prepared by sol-gel
method(2018)
- Convective laser filamentation
instability in magnetized
plasma(2014)

KEY AWARDS

- **Scholarship from Yarmouk University (1983–1988)**
- **Yarmouk University List of Honor January 1978**



Dr.Khadeejeh M. Hamasha

Associate Professor

SPECIALIZATION

Environmental physics

NOTABLE PUBLICATIONS

- Developed multi-wavelength techniques for measuring aerosol light absorption using Aethalometers and photoacoustic instruments in 2005.
- Investigated indoor, urban, and industrial black carbon pollution across Jordan in 2010.

KEY AWARDS

- **Research Grant, Deanship of Scientific Research and Graduate Studies, Yarmouk University (2017, 2019).**
- **Research Grant, Deanship of Scientific Research, Tabuk University (2012).**

FACULTY MEMBERS



Dr. Riyad S. Al Ababneh

Associate Professor

← « « « « « « « ←
SPECIALIZATION
Medical physics

NOTABLE PUBLICATIONS

- **FAT-WATER SEPARATION IN THE ABDOMEN DURING FREE-BREATHING BY USING STACK-OF-STAR (SOS) 3D RADIAL TRUEFISP IMAGING.**
- **PROC 22TH ANNUAL MEETING ISMRM, MILANO, ITALIA, 2014 .**

KEY AWARDS

- **DEUTSCHE FORSCHUNGSGEMEINSCHAFT (DFG) GRANT IN WÜRZBURG UNIVERSITY IN GERMANY, DURING THE SUMMER OF 2012**
- **STUDENT TRAVEL AWARD, INTERNATIONAL SOCIETY FOR MAGNETIC RESONANCE IN MEDICINE, 2013.**



Dr. Talal M. Al Tahtamouni

Associate Professor

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SPECIALIZATION
Solid State Physics

NOTABLE PUBLICATIONS

- **Optimum Sintering Method and Temperature for Cold Compact Bismuth Telluride Pellets for Thermoelectric Applications**
- **Sodium and Lithium Incorporated Cathode Materials for Energy Storage Applications – A Focused Review**

KEY AWARDS

- **Fulbright Visiting Scholar Program (USA)**
- **DFG Fellowship Research grant at Ulm University (Germany)**
- **Research Grant at Johannes Kepler University (Austria)**

FACULTY MEMBERS



Dr. Mufeed A. Awawdeh



Dr. Qasim Ibrahim Mahmoud Mahidat

Associate Professor



SPECIALIZATION

Environmental Physics, Magnetic Materials

NOTABLE PUBLICATIONS

- Spectrophotometric Detection of Pentachlorophenol (PCP) – Sensors and Actuators B (2005)
- Bose–Einstein Condensation in –Spin

Polarized Hydrogen – Physical Review A (2011)

KEY AWARDS

- Research Grant on Environmental Pollutants Detection – Yarmouk University
 - HCST–MonoJo Grant for Vitamin B12 Measurement Project

Associate Professor



SPECIALIZATION

Materials science

NOTABLE PUBLICATIONS

- Structural and magnetic properties of (Mg, Co)2W hexaferrites. Jordan Journal of Physics.13 (1), 1–16
- Structural and magnetic properties of Er3Fe5–xGaxO12 garnets. Materials Research Express. 6(7) 076114

KEY AWARDS

Outstanding Academic Achievement Award, 2011 for the PhD degree (Wayne State University).

First Place Award, Graduate Research Day: Wayne State University

FACULTY MEMBERS



Dr. Manal J. Abdallah

Associate Professor

SPECIALIZATION

Nuclear Physics

NOTABLE PUBLICATIONS

Determination of ^{210}Po and Trace Elements in Ma'assel Used in Water Pipe Smoking (Shisha) in Jordan (2024)

Natural radioactivity concentrations and dose assessment in selected medicinal plants consumed in Jordan (2019)

KEY AWARDS

Outstanding Academic Achievement Award, 2015, for the PhD degree (New Mexico State University)

Preparing Future Faculty Graduate Assistantship Award, March, 2013,

Graduate



Dr. Ali M. Almomani

Associate Professor

SPECIALIZATION

Nuclear, Accelerator & Radiation Physics

NOTABLE PUBLICATIONS

- **Combined Zero Degree Structure Beam Dynamics and Applications (2019)**
- **Space-Charge Effect of Laser Accelerated Protons on Beam Profile (2020)**

KEY AWARDS

Doctoral Scholarship – Goethe University, Germany (2009–2012)

CERN Accelerator School Scholarship, Spain (2011)

DEPARTMENT LEADERSHIP & FACULTY HIGHLIGHTS

NEW VICE PRESIDENT

PROFESSOR AMJAD D. AL-NASSER
FORMERLY THE DEAN OF THE FACULTY OF SCIENCE, HAS BEEN APPOINTED AS THE VICE PRESIDENT OF YARMOUK UNIVERSITY. THIS NEW ROLE REFLECTS HIS OUTSTANDING LEADERSHIP, ACADEMIC CONTRIBUTIONS, AND CONTINUED DEDICATION TO ADVANCING THE UNIVERSITY'S MISSION.



NEW DEAN

DR. MOHEEB AWADEH HAS BEEN APPOINTED AS THE NEW DEAN OF THE FACULTY OF SCIENCE. HE BRINGS STRONG ACADEMIC AND ADMINISTRATIVE EXPERIENCE TO THE ROLE AND WILL GUIDE THE FACULTY THROUGH ITS UPCOMING INITIATIVES.

EMAIL: AWADEH@YU.EDU.JO



DEPARTMENT LEADERSHIP & FACULTY HIGHLIGHTS

NEW HEAD OF PHYSICS

DR. QASIM IBRAHIM MAHMOUD MAHIDAT HAS ASSUMED THE POSITION OF HEAD OF THE DEPARTMENT OF PHYSICS. HIS LEADERSHIP WILL SUPPORT THE DEPARTMENT'S ACADEMIC GROWTH AND ONGOING DEVELOPMENT.

EMAIL: Q.MUHAIDAT@YU.EDU.JO



PROMOTION TO PROFESSOR

DR. MOLHAM M. EYADEH HAS BEEN PROMOTED FROM ASSOCIATE PROFESSOR TO PROFESSOR.

THIS ADVANCEMENT RECOGNIZES HIS CONTRIBUTIONS IN RESEARCH, TEACHING, AND SERVICE TO THE DEPARTMENT.

EMAIL: MOLHAM.E@YU.EDU.JO



PSI TEAM

PSI (PHYSICS SEES IMPOSSIBILITIES)

PSI IS A STUDENT-LED INITIATIVE FOUNDED AND DIRECTED BY PASSIONATE PHYSICS WHO SHARE A COMMON GOAL – TO MAKE PHYSICS ENGAGING, INSPIRING, AND WITHIN EVERYONE'S REACH. GUIDED BY OUR ESTEEMED FACULTY ADVISOR, WE AIM TO TURN CURIOSITY INTO CREATIVITY, AND IDEAS INTO IMPACT. THROUGH EVERY ISSUE, WE STRIVE TO PRESENT SCIENCE IN A WAY THAT ENLIGHTENS, EXCITES, AND CONNECTS. PSI IS MORE THAN JUST A MAGAZINE – IT'S A REFLECTION OF TEAMWORK, DISCOVERY, AND THE ENDLESS POSSIBILITIES PHYSICS HAS TO OFFER.



**MAGAZINE ADVISOR
PROF. MUHAMMAD S. BAWAANEH**



**EDITOR-IN-CHIEF
FARAH NOORELDEEN ABDULAL**

EDITORS OF MAGAZINE



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Louzan Al-Ramahi
M.Sc in Medical Physics



Emran Adnan Shlool
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Qosai Al-Bataineh
M.Sc in Medical Physics

EDITORS OF MAGAZINE



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B.Sc in Physics



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Batoul Bani Amer
B.Sc in Physics



Dalia Taiseer Idreis
B.Sc in Medical Physics



Razan Radi Alwadrat
B.Sc in Medical Physics

REMARKABLE
DAYS!



WINTER SCHOOL ON SPACE SCIENCE AND TECHNOLOGY

THE DEPARTMENT OF PHYSICS AT YARMOUK UNIVERSITY ORGANIZED THE FIRST WINTER SCHOOL ON SPACE SCIENCE AND TECHNOLOGY IN COOPERATION WITH THE UN REGIONAL CENTER FOR SPACE SCIENCE AND TECHNOLOGY EDUCATION FOR WESTERN ASIA.

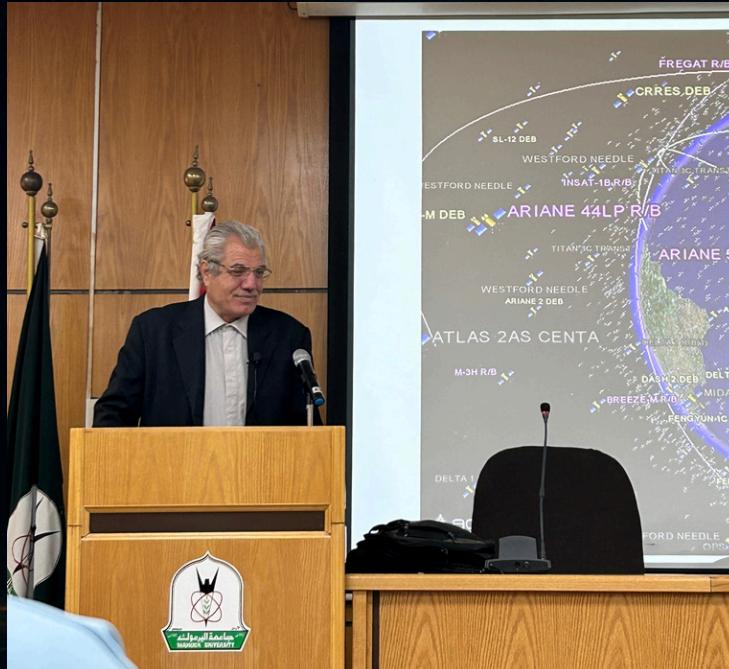
THE PROGRAM AIMED TO ENHANCE KNOWLEDGE OF SPACE SCIENCES AND THEIR ROLE IN SUSTAINABLE DEVELOPMENT. IT COVERED TOPICS SUCH AS THE SOLAR SYSTEM, STARS AND GALAXIES, SPACE PLASMA, AND SPACECRAFT TECHNOLOGIES. PARTICIPANTS ALSO EXPLORED THE APPLICATIONS OF SATELLITES IN AGRICULTURE, ENVIRONMENT, AND WATER MANAGEMENT.



ACCESS ARTICLE:

DATE : FEBRUARY 17-19, 2025

WINTER SCHOOL ON SPACE SCIENCE AND TECHNOLOGY



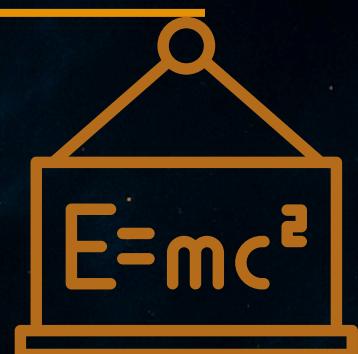
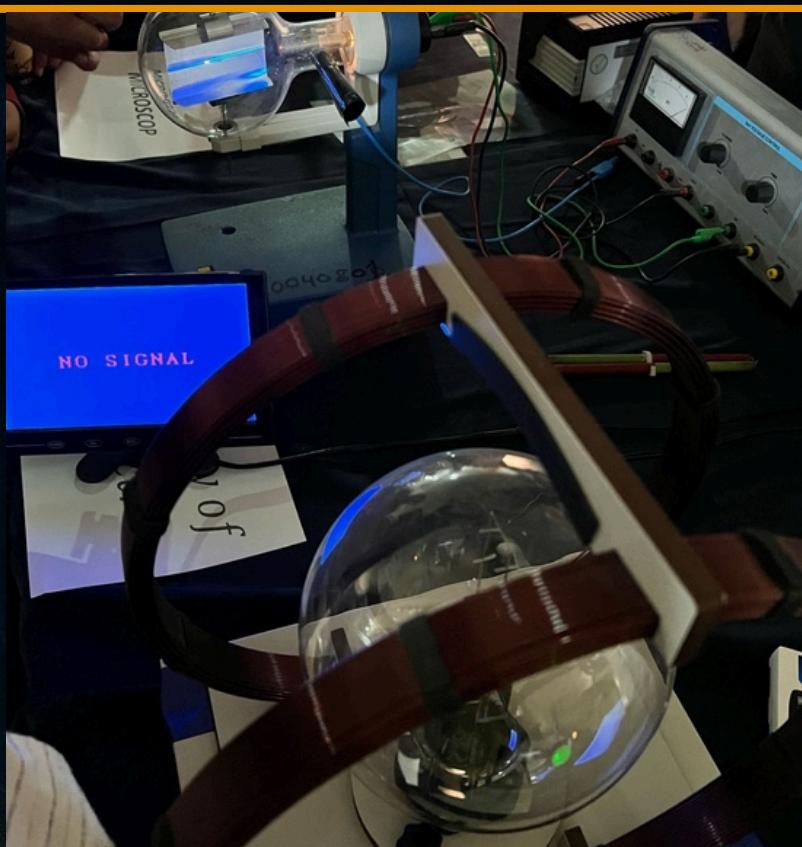
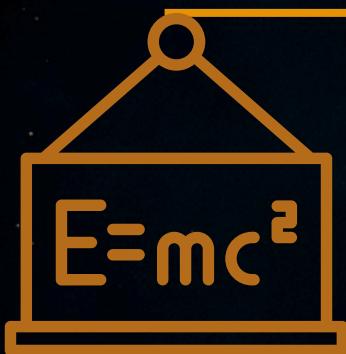
RAMADAN IFTAR

A RAMADAN IFTAR GATHERING HOSTED BY SCIENCE FACULTY AT YARMOUK UNIVERSITY THAT BROUGHT TOGETHER FACULTY MEMBERS AND STUDENTS IN A WARM, COMMUNAL ATMOSPHERE. THE EVENT AIMED TO FOSTER STRONGER SOCIAL TIES WITHIN THE DEPARTMENT AND REFLECT THE VALUES OF UNITY AND GENEROSITY DURING THE HOLY MONTH. IT ALSO OFFERED A PLEASANT OPPORTUNITY FOR PARTICIPANTS TO CONNECT AND SHARE MOMENTS BEYOND THE CLASSROOM SETTING.



DATE : 25TH OF MARCH, 2025

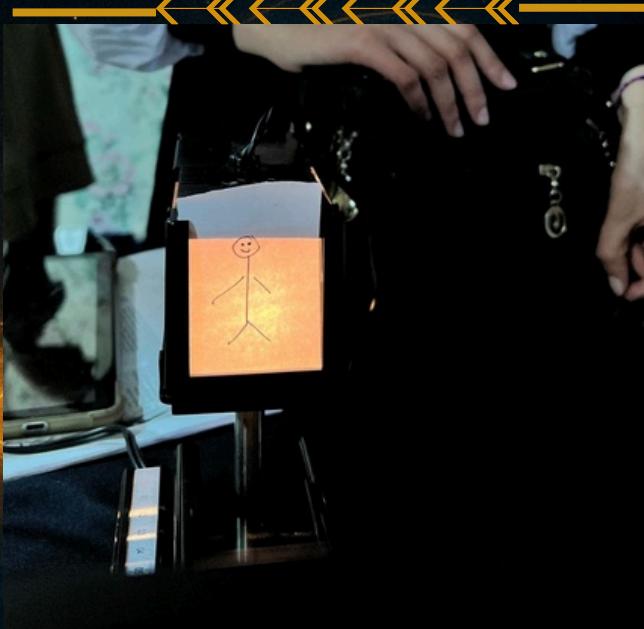
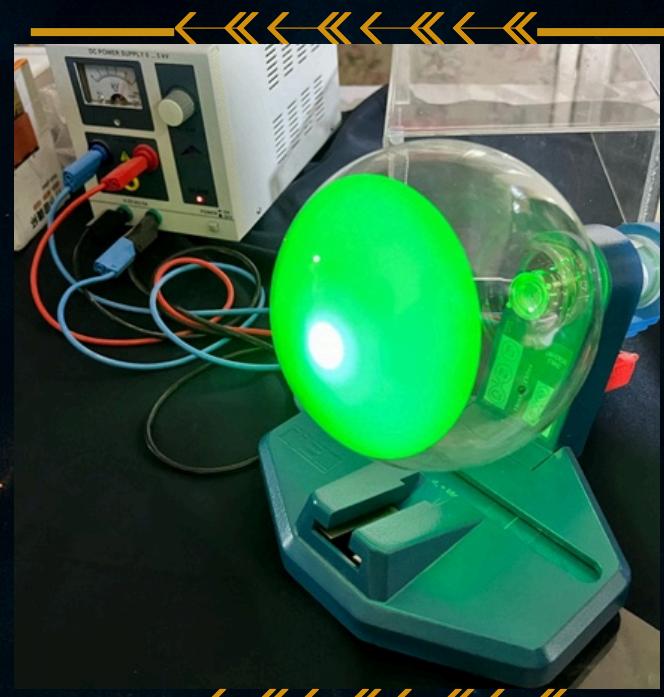
SCIENCE DAY



SCIENCE DAY WAS A CELEBRATION
OF INNOVATION AND CURIOSITY,

WHERE STUDENTS FROM EVERY FIELD CAME
TOGETHER TO SHARE THEIR PASSION FOR SCIENCE.
THE PHYSICS STUDENTS DID AMAZING THINGS AND
DID A GREAT JOB THROUGHOUT THE DAY, LEAVING A
STRONG IMPRESSION ON EVERYONE WITH THEIR
ENTHUSIASM AND EFFORT.

EXPERIMENTS CONDUCTED BY PHYSICS STUDENTS ON SCIENCE DAY



ROLLERCOASTER EVENT

THE PHYSICS ROLLERCOASTER EVENT WAS A THRILLING HANDS-ON CHALLENGE WHERE PARTICIPANTS FROM ALL FACULTIES GOT TO EXPERIENCE PHYSICS IN ACTION. USING SIMPLE MATERIALS LIKE CARDBOARD AND PAPER, TEAMS BUILT REAL-LIFE ROLLERCOASTERS DESIGNED TO TEST CONCEPTS SUCH AS MECHANICAL ENERGY, KINETIC ENERGY, AND VELOCITY. EACH GROUP CALCULATED THE PHYSICS BEHIND THEIR DESIGNS AND WATCHED AS A MARBLE RACED THROUGH THEIR TRACKS, BRINGING THEIR CALCULATIONS TO LIFE. IT WAS AN EXCITING MIX OF CREATIVITY, TEAMWORK, AND APPLIED PHYSICS THAT MADE THE EVENT A HUGE SUCCESS.



HELD BY : TEAM PSI
HELD ON: AUGUST 10, 2025
AT THE FACULTY OF SCIENCE



THE EXCITE
MECHANICS

SCIENTIFIC
AXIS



QUANTUM
TEAM



POWER
PUFF GIRLS





WORK



TEAM





First place : Scientific axis



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- Numbers of students for the last five years - Phys
- First Physics Winter School
- Physics Magazine

Social Media Accounts



Thank you for exploring this edition of Psi. Stay curious, stay inspired, and keep pushing the boundaries of physics. See you in the next issue!