



JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY
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TEHSIL – KANDAGHAT, DISTRICT – SOLAN (H.P.)
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27/10/2024

Report on the 3-Day Robotic Arm Workshop





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ENKINDLE

DEPARTMENT OF CSE / IT PRESENTS

2nd SERIES OF

HANDS ON WORKSHOP

ON

INNOVATION IN MOTION :
ROBOTIC ARM TECHNOLOGY

15-17TH NOVEMBER 2024

Faculty Coordinator
DR. ANITA SARDANA
DR. AMAN SHARMA

<https://www.youtube.com/@ENkindleJUIT>
<https://www.linkedin.com/in/enkindle-juit-2878162ba/>



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Organized by the Enkindle Club

Date: November 15th – 17th, 2024

Venue: Jaypee University of Information Technology (JUIT), Waknaghat

The Enkindle Club successfully conducted a **3-Day Robotic Arm Workshop** from November 15th to 17th, 2024. The event was structured to cater to different batches of students each day, ensuring an inclusive and personalized learning experience. The workshop focused on equipping participants with a strong foundation in robotics, specifically the design, assembly, and programming of robotic arms. Each day, the workshop followed a consistent format, beginning with a theoretical introduction to the principles of robotic systems, including mechanical structures, kinematics, dynamics, and real-world applications.

Following the theoretical sessions, participants engaged in hands-on activities where they assembled and calibrated robotic arms using provided kits. Under the guidance of expert mentors and lab coordinators, they explored the use of sensors, actuators, and controllers, developing practical skills essential for robotics projects. The final session of each day focused on programming, where students learned to code robotic arms for precise movements and real-world applications, such as object manipulation. Every day concluded with participants demonstrating their working robotic arms and engaging in interactive discussions to share their learnings and ideas.

The workshop's success was made possible through the dedicated efforts of the organizing team and the support of key faculty members and university leadership. The event was coordinated by **Dr. Aman Sharma** and **Dr. Anita Sardana** from the Department of CSE, JUIT, with hands-on assistance provided by lab coordinators **Mr. Pramod Kumar**, **Mr. Dheerendra Kumar**, and **Mr. Deep Narayan Tripathi**. The Enkindle Club is immensely grateful to **Prof. R. K. Sharma**, Vice-Chancellor, **Prof. Ashok Kumar Gupta**, Dean (Academics and Research), and **Prof. Vivek Sehgal**, HoD, Department of CSE, for their guidance and support. Special thanks go to the student coordinators of the Enkindle Club for their hard work and commitment to making the event a success.

By organizing the workshop for three distinct batches, the Enkindle Club ensured that all interested students could participate and gain valuable exposure to the field of robotics. Participants expressed their appreciation for the structured content, hands-on activities, and the opportunity to work closely with mentors. The workshop not only enhanced their technical skills but also inspired them to explore more advanced projects in the future. The Enkindle Club looks forward to organizing similar events to continue fostering innovation, collaboration, and technical excellence in STEM fields at JUIT.

एनकाइंडलक्लबद्वारा आयोजित

दिनांक: 15-17 नवंबर, 2024

स्थल: जेपीयूनिवर्सिटी ऑफ इंफॉर्मेशन टेक्नोलॉजी (JUIT), वाकनाघाट

एनकाइंडलक्लबने 15 से 17 नवंबर, 2024 तक 3-

दिवसीय रोबोटिक आर्म वर्कशॉप का सफलतापूर्वक आयोजन किया। इस कार्यक्रम को प्रत्येक दिन छात्रों के अलग-

अलग बैचों को ध्यान में रखकर आयोजित किया गया था,

ताकि समान अवसर और व्यक्तिगत सीखने का अनुभव सुनिश्चित हो सके। कार्यशाला में प्रतिभागियों को रोबोटिक्स में एक मज

बूट आधार प्रदान करने पर ध्यान केंद्रित किया गया,

असेंबली और प्रोग्रामिंग पर। प्रत्येक दिन,

विशेष रूप से रोबोटिक आर्म के डिजाइन, कार्यशाला ने एक सुसंगत प्रारूप का पालन किया,



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जिसकीशुरुआतयांत्रिकसंरचनाओं, किनेमैटिक्स,
डायनेमिक्सऔरवास्तविकदुनियाकेअनुप्रयोगोंसहितरोबोटिकप्रणालियोंकेसिद्धांतोंकेसैद्धांतिकपरिचयसेहुई।
सैद्धांतिकसत्रोंकेबाद, प्रतिभागियोंनेव्यावहारिकगतिविधियोंमेंभागलिया,
जहाँउन्होंनेप्रदानकीगईकिटकाउपयोगकरकेरोबोटिकआर्म्सकोअसेंबलऔरकैलिब्रेटकिया।विशेषज्ञसलाहकारों
औरलैबसमन्वयकोंकेमार्गदर्शनमें, उन्होंनेसेसर, एक्ट्यूएटर्सऔरनियंत्रकोंकेउपयोगकापतालगाया,
रोबोटिक्सपरियोजनाओंकेलिएआवश्यकव्यावहारिककौशलविकसितकिए।प्रत्येकदिनकाअंतिमसत्रप्रोग्रामिंगप
रकेंद्रितथा, जहाँछात्रोंनेसटीकआंदोलनोंऔरवास्तविकदुनियाकेअनुप्रयोगों,
जैसेकिऑब्जेक्टहेरफेरकेलिएरोबोटिकभुजाओंकोकोडकरनासीखा।प्रत्येकदिनप्रतिभागियोंद्वाराअपनेकामकर
नेवालेरोबोटिकभुजाओंकाप्रदर्शनकरनेऔरअपनेसीखनेऔरविचारोंकोसाझाकरनेकेलिएइंटरैक्टिवचर्चाओंमेंभा
गलेनेकेसाथसमाप्तहुआ।कार्यशालाकीसफलताआयोजनटीमकेसमर्पितप्रयासोंऔरप्रमुखसंकायसदस्योंऔरवि
श्वविद्यालयनेतृत्वकेसमर्थनसेसंभवहुई।इसकार्यक्रमकासमन्वयन JUIT के CSE विभागकेडॉ.
अमनशर्माऔरडॉ. अनीतासरदानानेकिया, जिसमेंलैबसमन्वयकश्रीप्रमोदकुमार,
श्रीधीरेंद्रकुमारऔरश्रीदीपनारायणत्रिपाठीनेव्यावहारिकसहायताप्रदानकी।एनकाइंडलक्लबप्रो. आर. के. शर्मा,
कुलपति, प्रो. अशोककुमारगुप्ता, डीन (अकादमिकऔरअनुसंधान), औरप्रो. विवेकसहगल, एचओडी, CSE
विभागकाउनकेमार्गदर्शनऔरसमर्थनकेलिएबहुतआभारीहै।कार्यक्रमकोसफलबनानेकेलिएउनकीकड़ीमेहनत
औरप्रतिबद्धताकेलिएएनकाइंडलक्लबकेछात्रसमन्वयकोंकोविशेषधन्यवाद।तीनअलग-
अलगबैचोंकेलिएकार्यशालाआयोजितकरके,
एनकाइंडलक्लबनेसुनिश्चितकियाकिसभीइच्छुकछात्रभागलेसकेंऔररोबोटिक्सकेक्षेत्रमेंमूल्यवानअनुभवप्राप्तकर
सकें।प्रतिभागियोंनेसंरचितसामग्री,
व्यावहारिकगतिविधियोंऔरसलाहकारोंकेसाथमिलकरकामकरनेकेअवसरकेलिएअपनीप्रशंसाव्यक्तकी।कार्य
शालानेनकेवलउनकेतकनीकीकौशलकोबढ़ायाबल्किउन्हेंभविष्यमेंऔरअधिकउन्नतपरियोजनाओंकापतालगाने
केलिएभीप्रेरितकिया।एनकाइंडलक्लब JUIT में STEM क्षेत्रोंमेंनवाचार,
सहयोगऔरतकनीकीउत्कृष्टताकोबढ़ावादेनेकेलिएइसीतरहकेआयोजनोंकाआयोजनकरनेकेलिएतत्परहै।



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