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Webinar on

ENGINEERING AS A CAREER

Date: 02nd August 2025, Saturday

Organised By

Odisha School Education Programme Authority (OSEPA)
Bhubaneswar

In Collaboration with

UNICEF Odisha

Technical Partner

IDENTITY Foundation Trust



IDENTITY
FOUNDATION

About the Collaboration:

The **Odisha School Education Programme Authority (OSEPA)**, under the Department of School & Mass Education, Government of Odisha, in collaboration with UNICEF Odisha and its technical partners, conducts career guidance webinars for secondary school students. These sessions are designed to empower students of grade 9th & 10th with the knowledge and confidence to make informed career decisions. The initiative focuses on strengthening the transition from school to higher education and the world of work through structured, student-friendly career awareness and guidance interventions.

About the Webinar:



As part of the ongoing career guidance initiative, the webinar was successfully organised by the Odisha School Education Programme Authority (OSEPA) on 2nd August 2025 (Saturday) at 10:30 AM. Held at the OSEPA Rushikulya Conference Hall, the session focused on the topic

“Engineering as a Career.” The webinar was attended by students and faculty members from Grades 9 and 10, along with key officials from OSEPA. The session began with a welcome address by **Mr. Tanmay Behera (OES), Joint Director, OSEPA**, who warmly greeted the resource person, moderator, students, and teachers for participating in the webinar after the summer break. This was followed by an encouraging address by **Ms. Sangeeta Behera, Additional Director General, OSEPA**, who urged students and teachers to engage mindfully in the session. She emphasised the importance of such platforms in guiding students to make well-informed and confident career choices.

About the Resource Person:

Dr. Ranjan Kumar Dash is an accomplished academician and researcher with over 24 years of teaching experience in undergraduate and postgraduate computer science education. He holds an MCA from Fakir Mohan University, where he was awarded the Gold Medal in 2001, and a Ph.D. from Sambalpur University, completed in 2008.

Dr. Dash has been associated with Odisha University of Technology and Research (OUTR), formerly CET Bhubaneswar, since 2009 and is currently serving as the Head of the School of Computer Sciences. He has made significant contributions to the academic and research community, with 69 publications in reputed international and national journals.

In recognition of his research excellence, he received a Gold Medal from the Institution of Engineers in 2010 for the best research paper. Dr. Dash continues to be an influential figure in the field of computer science, known for his dedication to teaching, research, and academic leadership.



Career Webinar Series, Session 2

ENGINEERING AS A CAREER

Organized by **OSEPA**

Saturday
2nd August 2025

10:30AM - 11:30AM

Webinar
Youtube Live on
Odisha Career Guidance

DR. RANJAN KUMAR DASH
Professor, HOD, School of Computer Science, OUTR

Welcome Note by the Moderator:

Mr. Jasobant Narayan Singhlal, Founder and Director of Identity Foundation Trust, moderated Session 2 of the Career Webinar Series by warmly welcoming students and teachers from various schools. He encouraged students to actively engage in the session by attentively listening to the resource person and thoughtfully absorbing the shared insights. Mr. Singhlal emphasised the importance of such sessions in helping students make informed career decisions, particularly in the field of sports. He highlighted that gaining clarity about career paths requires curiosity and active participation. To that end, he urged students to not hesitate in asking questions during the session, as open dialogue is a key part of meaningful learning. His remarks set a motivating tone for the session, aiming to inspire students to take charge of their future career choices.



About Engineering Career Options as Popular Options:

Engineering is a career that involves applying scientific, mathematical, and technical knowledge to design, develop, and improve structures, machines, systems, and processes. Engineers work across diverse fields such as civil, mechanical, electrical, computer science, electronics, biotechnology, and more, solving real-world problems and driving innovation in society. The RP emphasised with real-life applications of each branch, making it engaging for the young audience alongside highlighted the importance of Physics, Chemistry, and Mathematics in engineering entrance exams.

In India, engineering is one of the most sought-after career choices due to several reasons. Firstly, it offers a wide range of specialisations, allowing students to choose a field aligned with their interests and skills. Secondly, engineering is perceived as a stable and respected profession with strong job prospects in both the public and private sectors. With India's growing economy and technological advancements, there is a high demand for skilled engineers in sectors like IT, infrastructure, manufacturing, telecommunications, and renewable energy.

Additionally, prestigious institutions like the IITs, NITs, and state engineering colleges have enhanced the reputation of engineering education in the country. The promise of career growth, good salary

packages, opportunities for global employment, and the chance to contribute to national development make engineering a popular and enduring career choice among Indian students and families.

Pathways to opt for Engineering Careers:

During the session, the Resource Person (RP) emphasised the importance of early career planning, advising students to begin considering their career goals from Grade 9 or 10. For those aspiring to pursue a career in engineering, selecting the right academic stream is crucial. Students must opt for **PCM (Physics, Chemistry, and Mathematics) in Classes 11 and 12**, as these subjects form the core foundation for most engineering entrance examinations.

To gain admission into a Bachelor of Technology (B. Tech) program after Class 12, students are generally required to score a **minimum of 50–60% marks in PCM**, along with qualifying marks in national or state-level entrance exams such as JEE Main, JEE Advanced, CUET, and CIPET. Among these, JEE Main is the most widely accepted exam and is conducted twice a year. A strong performance in JEE Main enables students to appear for JEE Advanced, which is required for admission into the prestigious Indian Institutes of Technology (IITs). Students who complete Class 10 can also enter the engineering stream through diploma programs, and later, gain admission into B. Tech through lateral entry. The RP encouraged students to stay focused, begin preparations early, and seek guidance to navigate the competitive admission process successfully.

Emerging into Engineering Careers:

The session provided valuable insights for students aspiring to build a career in engineering. It covered key aspects such as cut-off trends, subjects covered in entrance exams, exam patterns, and preparation strategies, helping students understand what to expect and how to prepare effectively.

The Resource Person explained that engineering is a vast field, broadly categorised into different branches as follows;



Conventional	• Mechanical Engineering • Civil Engineering • Electrical Engineering	• Chemical Engineering • Textile Engineering • Electronics & Communication Engineering
Unconventional	• Aerospace / Aeronautical Engineering • Sound Engineering	• Paper Engineering • Energy Engineering
Modern	• Computer Science & Engineering • Industrial & Production Engineering • Instrumentation Engineering	• Information Technology • Automobile Engineering
Hybrid	• Mechatronics Engineering (Mechanical + Electronics)	• Robotics & Automation (Computer Science + Electronics + Mech) • Biomedical Engineering (Engineering + Medical)
Emerging	• Artificial Intelligence & Machine Learning (AI/ML) • Data Science & Engineering • Cybersecurity Engineering • Quantum Engineering	• Nanotechnology Engineering • Bioinformatics • Sustainable/Renewable Energy Engineering • Space Engineering

These fields offer future-ready career options and are especially relevant as India advances toward digitalization and sustainable development.

In terms of educational institutions, students have a wide array of options. Prestigious institutions such as the Indian Institutes of Technology (IITs), National Institutes of Technology (NITs), Indian Institutes of Information Technology (IIITs), along with various State Government Engineering Colleges and reputed Private Universities, offer undergraduate and postgraduate engineering programs.

The session encouraged students to research thoroughly, plan early, and align their interests and aptitude with the right engineering specialization and institution for a successful career journey.



Types of Engineering Institutions in India:

Institutions	Numbers
Indian Institute of Technology (IITs)	23
National Institute of Technology (NITs)	31
Indian Institute of Engineering Science and Technology, Shivpuri	1
Indian Institute of Information Technology (IIITs)	25
Ministry of Education funded – 5 & PPP mode – 20	
North Eastern Regional Institute of Science and Technology (NERIST)	1
Sant Longowal Institute of Engineering and Technology (SLIET)	1
National Institute of Industrial Engineering (NITIE)	1
National Institute of Advanced Manufacturing Technology (NIAMT)	1
Ghani Khan Choudhury Institute of Engineering & Technology (GKCIET)	1
Central Institute of Technology, Kokrajhar	1
Total	86

Coaching for Engineering Preparation:



During the session, the Resource Person (RP) and the moderator discussed the various avenues available for students to prepare for competitive engineering entrance exams such as JEE Main and OJEE. They emphasised that while private coaching institutes are widely accessible across the state, students from underprivileged backgrounds need not rely solely on paid options.

The moderator highlighted a key initiative by the Directorate of Higher Secondary Education (DHSE), Odisha, which provides free coaching support to deserving aspirants. Students currently in Class 11 and 12 who are aiming for engineering careers can enrol in this program, which offers four early

morning coaching sessions each week, free of cost. This initiative is designed to ensure equitable access to quality preparation for economically disadvantaged students.

In addition to offline support, several online learning platforms offer affordable and high-quality content. Platforms such as NPTEL, SWAYAM, and JEE Wallah provide free or low-cost video lectures, study materials, and practice tests, making them valuable resources for self-paced preparation. These options allow students to learn from top educators and IIT professors from the comfort of their homes, especially in rural or remote areas.

Re-introducing the Odisha Career Guidance Website:

During the webinar, the Resource Person, in collaboration with officials from the Odisha School Education Programme Authority (OSEPA), engaged participants, both students and faculty in a reflective discussion about their usage of the Odisha Career Guidance Website. Upon inquiry, it was revealed that only 50% of attendees had actively begun referring to the website to explore suitable career pathways. Acknowledging this, the Resource Person took the opportunity to reintroduce the Odisha Career Guidance website; accessible at www.odishacareerguidance.com and underscored its significance as a comprehensive tool for career exploration.

He elaborated on the extensive resources available on the website, encouraging both students and institutions to regularly download and utilise various career collaterals, including activity posters, Ama Bruti booklets, career calendars, interactive worksheets, and personality development activity books. He also highlighted that there is a Career Guidance YouTube channel updated with 60+ videos on different career path-ways for the reference of the students as well. These resources, he emphasised, are instrumental in enhancing career awareness and guiding students toward informed decision-making.

Further reinforcing this message, the Resource Person urged all attendees to actively engage with the materials, advising them to regularly practice the activities and utilize the website's query and feedback features for any doubts or suggestions. To facilitate more personalised guidance, the Resource Person also introduced a dedicated email support channel info.careerguidance2024@gmail.com

inviting participants to write in with their career-related concerns. He assured that every query would be addressed within 24 to 48 hours, fostering a responsive and supportive ecosystem. In response, numerous students and faculty members committed to leveraging this email support, acknowledging its value in resolving individual doubts and gaining clarity on career prospects.

Additionally, the Resource Person made a significant appeal to all participating institutions to prominently display the website's resources and the support email ID on their school and college notice boards. This, he emphasised, would serve as a constant visual reminder, fostering a culture of career readiness and awareness among students. The initiative was well-received, reflecting a collective commitment to empowering the students with the right tools for their future.





Queries Answered during the Session:

Sahadev Dash, RGHS, Maliput, Koraput	Scope of government job after pursuing engineering?	Engineering graduates have a wide range of government job opportunities in sectors such as Public Sector Undertakings (PSUs) like BHEL, ONGC, IOCL, NTPC, and SAIL; Railways (RRB JE / SSE); Defence Services (Army, Navy, Air Force through CDS/UES); ISRO, DRDO, and state engineering services. Many of these roles require candidates to qualify GATE or other competitive exams like SSC JE or UPSC ESE (Engineering Services Examination). Government roles offer job stability, career growth, and benefits.
Rabindra Mallick	Describe about Software Engineering	Software Engineering is the field that involves designing, developing, testing, and maintaining software systems. It includes programming, software development, app/web development, system design, and project management. Careers include software developer, data analyst, mobile app developer, UI/UX designer, and software tester. Popular companies hiring software engineers include TCS, Infosys, Wipro, Google, Microsoft, and startups.
Gopinath Vidya Mandir, Bahadur Nagar	What is GATE? And how can we qualify this?	GATE (Graduate Aptitude Test in Engineering) is an all-India exam conducted for admission to M. Tech / ME programs and recruitment to PSUs. To qualify, one needs a strong understanding of core engineering subjects, consistent preparation, practice with mock tests, and conceptual clarity. GATE is held annually and is based on the engineering stream studied during B.Tech.
Charisri Nodal High School, Puri	What is the scope to appear for B. Tech after Class 12 12th?	After Class 12 (with Physics, Chemistry, and Mathematics), students can appear for entrance exams like JEE Main, OJEE, BITSAT, VITEEE, etc., for admission into B. Tech programs across IITs, NITs, IIITs, state government and private colleges. The engineering field offers multiple branches and career opportunities both in India and abroad.
PM Shri Government High School, Junagarh	How to pursue engineering after ITI?	After completing ITI (Industrial Training Institute), students can pursue Diploma in Engineering (Polytechnic) through entrance tests like DET. After completing the diploma, they can opt for lateral entry into the second year of B. Tech in their chosen branch through entrance exams like LEET or state-level diploma-to-degree exams (like OJEE in Odisha).
Biranchi Panda	Explain about Mechanical Engineering	Mechanical Engineering deals with the design, development, manufacturing, and maintenance of mechanical systems, machines, and tools. Key areas include thermodynamics, fluid mechanics, robotics, automotive, aerospace, and Heating Ventilation and Air Condition systems. Career options are available in manufacturing industries, railways, defence, energy sectors, and research organizations. Mechanical engineers are also in demand in core industries and public sector units.



Conclusion:

Engineering remains one of the most promising and diverse career paths for students in India. With numerous specializations, from traditional fields like Mechanical and Civil to modern and emerging areas such as Software Engineering, AI, and Renewable Energy, it offers wide-ranging opportunities. Students can enter this field after 12th or through diploma and ITI pathways, with options for government and private sector jobs. Competitive exams like JEE and GATE play a crucial role in shaping career progression. With the right guidance, preparation, and awareness, engineering can lead to a rewarding, impactful, and future-ready professional journey.

YouTube Engagement Analytics:

Total views during YouTube Live	6,873
Average view duration	15:26 minutes
Peak concurrent viewers	1964

Attendees Details:

Districts	No. of Schools	No. of Attendees for Class IX	No. of Attendees for Class X
Angul	27	1575	1435
Balasore	2	82	67
Bargarh	5	305	310
Bhadrak	1	63	77
Bolangir	32	1458	1426
Boudh	4	157	188
Cuttack	2	116	133
Deogarh	1	41	29
Dhenkanal	22	1070	1049
Gajapati	5	261	291
Ganjam	9	533	574
Jajpur	4	206	146
Jharsuguda	21	718	726
Kalahandi	16	574	633
Kandhamal	5	272	262
Keonjhar	8	435	474
Khordha	5	254	259
Koraput	43	2179	1744
Malkangiri	2	32	51
Mayurbhanj	135	5204	4635
Nabarangapur	4	188	177
Nayagarh	8	340	286
Nuapada	2	103	38
Rayagada	16	905	887
Sambalpur	20	887	805
Sundargarh	49	2396	2279



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TOTAL	448	20,352	18,981
Grand Total		39,333	

Photos from Ground:

