



Webinar on

Career Pathways in Engineering & Technology

16th August 2025, Saturday

Organised By
**Directorate of Higher
Secondary Education (DHSE)**

In Collaboration with
UNICEF Odisha

Technical Partner
Identity Foundation Trust





About the Collaboration:

The **Directorate of Higher Secondary Education (DHSE)**, under the Department of School & Mass Education, Government of Odisha, in collaboration with **UNICEF Odisha** and its technical partners, conducts career guidance webinars for students in higher secondary schools and colleges. These sessions are designed to empower students to make informed and confident career decisions. The initiative plays a vital role in strengthening the transition from school to higher education and the world of work through structured and meaningful career guidance.

About the Webinar:

Following this practice, the fifth session of the webinar series Academic Session 2025-2026 was organised by the Directorate of Higher Secondary Education (DHSE), Odisha, on **16th August 2025, Saturday, at 12:00 pm** on the topic of “**Career Pathways in Engineering & Technology**” at the DHSE conference hall. The webinar was attended by **112 higher secondary schools** where the faculties and students of grades 11 & 12 were along with the officials from DHSE, Odisha. The Deputy Director of DHSE, Mr. Jitendra Nayak gave the welcome note by welcoming the resource person, moderator, students, and faculties for joining the webinar after the summer vacation.

No. of higher-secondary schools / colleges attended the webinar session	112
No. of Class XI students who attended the webinar session	5,391
No. of Class XII students who attended the webinar session	5,381
No. of faculties who attended the webinar session	766

About the Resource Person:

Dr. Debabrata Das is a seasoned career coach and HR professional with over 30 years of experience across reputed organisations such as OHPC, NALCO, Jindal, Tata Motors, and Arcelor Mittal. He holds a B. Tech from CET, Bhubaneswar, a post-graduation in HRM from XIM, Bhubaneswar, and a Ph.D. in Human Resource Management (Employee Connect). A certified career counsellor and accomplished coach, he is also the author of the book “Radha Nani”. Dr. Das has mentored and guided professionals throughout his career, focusing on leadership and growth. His core expertise spans change management, digital transformation, employee engagement, talent acquisition, and fostering positive organisational culture, making him a trusted advisor for career development and organisational success.



Welcome Note by the Moderator:

Mr. Jasobant Narayan Singhlal, Founder and Director of Identity Foundation Trust, moderated Session 5 of the Career Webinar Series by warmly welcoming students and faculty members from various institutions. 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 engineering and technology. 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.

Popularity of a Career in Engineering:

The resource person emphasised that engineering continues to be a highly stable career choice, offering individuals a natural trajectory of professional growth. Beyond its inherent stability, the field embodies remarkable versatility, enabling engineers to seamlessly transition into diverse cross-disciplinary domains such as operations management, human



resource administration, research, and development, and, at times, even entrepreneurial leadership. This adaptability equips engineers with the competence to navigate complex organisational ecosystems while broadening their career horizons. Furthermore, the profession enjoys strong social recognition, positioning engineers as valued contributors to both industry and society. In the context of today's dynamic job market, engineering professionals benefit from an abundance of opportunities, as organisations across sectors actively seek their technical expertise, problem-solving acumen, and leadership potential. Consequently, engineering remains a highly rewarding and future-orientated career pathway.

Fitment for Choosing Engineering as a Career:

The resource person advised that every student should undertake a thorough self-assessment to identify their aptitude, personality traits, and areas of interest before making any career decision. Such introspection not only aligns career choices with individual strengths but also fosters long-term satisfaction and growth. He emphasised that a career in engineering demands a specific set of core competencies, including strong problem-solving abilities, an innate curiosity about how things function, and a genuine enthusiasm for building, coding, and designing. Analytical thinking, effective communication skills, extroversion, and a solid comfort level with mathematics and science were also highlighted as essential attributes. Furthermore, he stressed the importance of reinforcing one's knowledge of physics, chemistry, and mathematics, as these subjects serve as the foundational pillars of engineering education. Beyond technical capabilities, he urged students never to compromise on their personal interests and passions, as true career success stems from alignment between one's professional path and inner motivation. Ultimately, he underlined that clarity of career choice is vital, since clarity instils confidence, which in turn becomes a driving force for achievement and excellence.





Emerging Engineering & Technology Fields:

While discussing the various branches of engineering, the resource person encouraged students to conduct thorough secondary research to gain deeper insights into the disciplines offered by leading institutions. He recommended exploring the official websites of premier institutions such as the National Institute of Technology, OUTR, and Central Universities to familiarise themselves with the diverse academic pathways available. Such exploration, he emphasised, would provide students with valuable perspectives on curricula, specialisations, and future opportunities within each branch. In addition to the conventional domains, the resource person drew attention to several emerging and high-demand fields, including Artificial Intelligence, Machine Learning, Electronics and Communication Engineering, Aerospace Engineering, Textile Technology, Mining, Petroleum, Mechatronics, Biomedical, Energy, Robotics & Automation and Agricultural Engineering. These fields, he noted, are rapidly reshaping industries and hold immense potential for future professionals. Furthermore, he advised students to engage in peer-group discussions and seek guidance from mentors or seniors to enrich their understanding of evolving career trends. By combining structured research with informed consultation, students can develop clarity in their choices—clarity that ultimately fosters confidence and enables them to pursue their academic and professional journeys with determination and purpose.

In his discussion on high-demand technologies, the resource person highlighted transformative domains such as Artificial Intelligence, Machine Learning, the Internet of Things, Industry 4.0, Blockchain, and Robotics. He emphasised that these cutting-edge technologies are redefining industries and creating unprecedented opportunities for innovation. With digital transformation accelerating at an extraordinary pace, engineering and technology aspirants are uniquely positioned to spearhead this paradigm shift. By equipping themselves with the right skills and forward-looking mindset, students can play a pivotal role in designing and driving the systems that shape the future of global industries.



Affordable & Free Resources for JEE Mains Preparation:

While discussing affordable and freely accessible resources for JEE Mains preparation, the resource person emphasised the immense value of open-source platforms. He specifically highlighted the Government of India's NPTEL and Swayam portals, which provide comprehensive course materials across diverse subjects. Additionally, he recommended leveraging educational YouTube channels such as Unacademy, Physics Wallah, and Vedantu, which offer high-quality lectures and guidance. He further advised students to utilise the wide range of available mock test series, enabling them to assess their preparedness and strengthen examination strategies. Complementing these resources, the moderator underscored that the Directorate of Higher Secondary Education (DHSE) has been providing virtual coaching sessions for JEE and NEET aspirants, scheduled weekly from 7:30 a.m. to 10:45 a.m. Students may enrol in these sessions through a nomination process coordinated by the principals of their respective institutions.



Types of Institutions in India for Engineering:

Institutions	Numbers
Indian Institutes 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) Ministry of Education funded – 5 & PPP mode – 20	25
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
North Eastern Regional Institute of Science and Technology (NERIST)	1
Total	86

How to prepare for the Engineering Preparation:

While discussing strategies for JEE preparation, the resource person emphasised the importance of cultivating a positive mindset and unwavering determination throughout the journey. He advised students to carefully evaluate whether taking an additional academic year exclusively for JEE preparation would be beneficial, encouraging them to make such decisions with prudence and foresight. Effective time management, he stressed, is a cornerstone of success, and



students should adopt a structured study plan that balances subject-wise preparation with regular revision. Equally critical is the pursuit of conceptual clarity across all subjects, as superficial learning often becomes a major barrier to cracking highly competitive examinations like JEE. By aligning determination with discipline, planning, and a deep understanding of core concepts, students can enhance their confidence and significantly improve their chances of success in the examination.

National Level Entrance Examinations for Engineering:

- JEE Main – For NITs, IIITs, other central govt. institutes
- JEE Advanced – For IITs
- CIPET Admission Test
- CUET UG for Central Universities
- BITSAT – BITS Pilani & campuses
- VITEEE – Vellore Institute of Technology
- SRMJEE – SRM University
- WBJEE, COMEDK, OJEE (Odisha) – State-level exams



Conclusion:

Engineering and technology continue to stand out as highly rewarding career pathways, offering both stability and versatility to aspiring professionals. With a strong foundation in physics, chemistry, and mathematics, complemented by essential skills such as problem-solving, analytical thinking, creativity, and communication, students can position themselves for success in this dynamic field. The wide range of traditional and emerging branches, including Artificial Intelligence, Machine Learning, IoT, Blockchain, Aerospace, and Agricultural Engineering presents limitless opportunities for specialisation and innovation. Moreover, the rapid pace of digital transformation ensures that engineers remain at the forefront of shaping industries and societies worldwide. By leveraging affordable learning resources, adopting effective preparation strategies, and conducting thorough research on career options, students can gain the clarity and confidence needed to pursue their ambitions. Ultimately, aligning personal passion with professional goals empowers future engineers to lead with purpose and contribute meaningfully to global progress.



Attendee Details:

District	No. of Schools	Class XI		Class XII		Faculties		Students Total
		Boys	Girls	Boys	Girls	Male	Female	
Grand Total		5,391		5,381		766		
Total	112	2,223	3,168	2,313	3,068	412	354	
Angul	7	104	152	114	156	21	20	526
Balasore	4	10	98	20	102	5	5	230
Baragarh	3	112	142	104	145	13	11	503
Bhadrak	3	65	79	68	76	7	9	288
Bolangir	10	349	371	385	419	45	16	1524
Cuttack	5	90	194	72	150	21	31	506
Deogarh	3	139	91	164	85	27	12	479
Dhenkanal	3	98	107	81	57	16	9	343
Gajapati	4	53	97	24	29	11	8	203
Ganjam	10	146	188	89	165	39	40	588
Jagatsinghpur	4	80	140	60	133	10	11	413
Jajpur	1	16	12	0	0	3	3	28
Jharsuguda	2	18	46	42	54	4	7	160
Kalahandi	5	115	138	141	158	47	8	552
Kandhamal	2	50	170	50	130	3	6	400
Kendrapara	1	10	20	5	10	4	5	45
Keonjhar	9	104	250	92	240	20	18	686
Khurda	7	167	167	189	167	17	23	690
Koraput	7	139	145	176	197	26	24	657



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Total	112	2,223	3,168	2,313	3,068	412	354	
Malkangiri	1	10	25	11	30	3	0	76
Mayurbhanj	3	58	47	52	67	12	3	224
Nayagarh	2	2	8	36	46	7	6	92
Nuapada	2	10	28	17	30	8	4	85
Puri	2	25	123	14	56	4	20	218
Rayagada	1	22	28	49	51	3	2	150
Sambalpur	5	95	143	115	131	15	20	484
Sonepur	1	34	26	42	29	11	2	131
Sundargarh	5	102	133	101	155	10	31	491
Total	112	2,223	3,168	2,313	3,068	412	354	
Grand Tortal		5,391		5,381		766		

Photos from the Ground:



Bhishmagiri, Odisha, India
9fm7+6pf Ramajee Garden, Ramajee Mahavidyalaya, Bhishmagiri,
Odisha 761055, India
Lat 19.9820623 Long 84.4645208