It is a proud moment to interact with the readers on the start of HSBTE Newsletter. In India, Industries recruit three categories of engineers for three distinct purposes. The first category is IIT Engineer, second is Graduate Engineer from other Engineering Colleges and the third is Diploma Engineer. On an average 2-3 IIT Engineers per 100 are recruited, nearly 48-60 Graduate Engineers per 100 and rest is Diploma. So there is job opportunity always for good Diploma Holder Engineers. Initial salary will not be so high but bright students get promotions fast and come to a respectable position within 8-10 years of first job. So Diploma qualification from a good polytechnic is a good step towards entering the world of work and to get on the path of progress in life.

In the early days, there was lack of awareness about education due to which only people from developed locality could access the quality education and new opportunities; but in the present scenario due to availability of wide resources in any field, the availability of opportunities are more which have to be harnessed in the rightful and fruitful manner.

The Newsletter for HSBTE has been aptly and quintessentially initiated for our student fraternity as well as other stakeholders.

Best Wishes!

Sh. Anil Kumar, IAS
Additional Chief Secretary Technical, Education-cum-Chairman, HSBTE

The role of education as an instrument of social change is widely recognized today. A lot of trust is placed by the Society on the Government for quality education, quite rightly, because of the power to influence and shape young minds. Technical education, be it Degree or Diploma, gives students the academic, technical and employability skills needed to become lifelong earners and learners. Technical education is not confined to text book based education for enabling the students to crack various exams by cramming the information, rather, it gives conceptual understanding, technical skills, knowledge and training among students necessary to succeed at the workplace.

Looking at HSBTE, many new initiatives have been undertaken to make the Diploma education in the State ready for Industry 4.0. Continuous efforts are being made to inculcate best practices in our polytechnics for the benefit of the students. I congratulate the team at HSBTE for initiating periodical Newsletter for our student fraternity as well as other stakeholders.

Best Wishes!

Sh. A. Sreenivas, IAS
Director General Technical Education

It gives me immense pleasure to introduce HSBTE Newsletter. It is an initiative taken by HSBTE to publish valuable information and news that will be helpful to improve teaching-learning-living activities. Best practices adopted by HSBTE to improve the development of student, faculty and institute shall be included in the Newsletter periodically.

Parents and teachers play a vital role during the teenage years of an individual. They have to be watchful, while dealing with teenagers, as they are most susceptible to succumb to peer pressure during these years of their life. The teenagers need to be taught to differentiate between the good and the bad, the right and the wrong, making sure that they are well-informed. The students need to be encouraged in developing and implementing their career plan, which will result in harnessing their energies and preserving the youth in right direction. Diploma qualification of HSBTE has many advantages such as affordable fee, easy accessibility, curriculum aligned to the needs of industry, orientation towards developing practical skills, ample job opportunities, equivalent to 10+2, ease of higher studies etc.

It is hoped that the 'HSBTE newsletter' will be of tremendous use to all the stakeholders.

Best Wishes!

Sh. K.K. Kataria
Director Technical Education-cum-Secretary, HSBTE
Haryana State Board of Technical Education (HSBTE) controls and monitors all matters pertaining to affiliation, academics and examination of diploma level technical education along with student training and placement in the State. Determined to constantly update and upgrade curriculum and train teachers as well as polytechnic trainers to turn out ready-to-walk-into-industry workforce, HSBTE has undertaken a slew of reforms spanning various segments. These include curriculum updation, promoting interaction between faculty and students, evolution of a continuous evaluation system, mentor scheme, customized learning opportunities, examination and evaluation systems and digital initiatives.

Every year, polytechnics/institutions are granted provisional affiliation by the Board for a period of one year subject to submission of approvals by such statutory bodies as AICTE/PCI, affiliation proforma, deposition of requisite affiliation fee as applicable, and fulfilment of all norms and conditions prescribed in the affiliation bye-laws.

<table>
<thead>
<tr>
<th>Type of Technical Institution</th>
<th>Number</th>
<th>Intake</th>
</tr>
</thead>
<tbody>
<tr>
<td>Government polytechnics</td>
<td>37</td>
<td>12,885</td>
</tr>
<tr>
<td>Government aided polytechnics</td>
<td>04</td>
<td>1,870</td>
</tr>
<tr>
<td>Self-financing polytechnics</td>
<td>144</td>
<td>3,1631</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>185</strong></td>
<td><strong>46,386</strong></td>
</tr>
</tbody>
</table>

The status of provisional affiliation for Diploma in Vocational Courses for the session 2018-19:

<table>
<thead>
<tr>
<th>Type of Technical Institution</th>
<th>Number</th>
<th>Intake</th>
</tr>
</thead>
<tbody>
<tr>
<td>Government polytechnics</td>
<td>05</td>
<td>125</td>
</tr>
<tr>
<td>Self-financing polytechnics</td>
<td>21</td>
<td>1,175</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>26</strong></td>
<td><strong>1300</strong></td>
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</table>
NSQF ALIGNED CURRICULUM, NEW COURSES AND ACADEMIC INITIATIVES

- NSQF-aligned competency-based curriculum has been implemented w.e.f. session 2017-18 in core diploma engineering branches namely, Electronics Engineering, Electrical Engineering, Mechanical Engineering, Computer Engineering, Civil Engineering and Automobile Engineering.

- D-Voc courses have also been introduced.

- Revision of the curriculum is undertaken at regular intervals.

- Annual pattern curriculum for 1st year in respect of 33 diploma courses has been started w.e.f 2018-19.

- Continuous evaluation system adopted for annual pattern curriculum for the 1st year in which the student shall be evaluated for 20% of the syllabus in the 1st Assessment, for next 20% of the syllabus in the 2nd Assessment and for remaining 60% syllabus in the final exam.

- The fundamentals/basics of each branch have been introduced in the 1st year as a subject.

- The awareness/basics on Internet of Things (IoT) & Artificial Intelligence (AI) in all Diploma courses has been introduced as a separate subject to enhance the employment opportunities of students.

- Two-week Induction Training Programme has been made mandatory for diploma students from academic session 2018-19 for fresh students as per AICTE guidelines.

- Industrial training for students of Diploma in Engineering, from 4th semester onwards has been made mandatory.

- The practical component for all diploma courses has been increased up to 60% with an aim to impart more practical skills to the students.

- Mentor scheme started to facilitate close dialogue between teachers (mentors) and students (mentees). Each faculty member acts as a mentor for 15-20 students throughout their stay at the institute.

- Learning material and lab manuals have been developed in collaboration with NITTTR, Chandigarh.

- Yoga Day and English Speaking Day are being observed on 2nd and 4th Saturday of every month in all polytechnics for making the students aware of the importance of Yoga and overall wellness as well as to improve their communication skills through quiz and extempore motivational lectures.
The Board is committed to promoting an environment of structured and systematic training, learning and continuing professional development of the polytechnic faculty to enable them to perform their duties effectively and efficiently. This is essential to provide high quality service which meets the needs and expectations of industry, stakeholders and members of the public.

Training for teachers is carried out through short-term programs and workshops at regular intervals conducted by the various institutes/ training partners/ industry on their own campuses as well as at zonal level in the State like

1. NITTTR, Sector-26, Chandigarh.
2. NIELIT, Phase-VIII, Mohali.

- Customized learning opportunities are provided to officers at the headquarters and faculty in the polytechnics to help them learn new management concept, explore new perspectives, master management skills, and learn the art of leading effective teams for preparing future human resource as per industry needs.

- Board has entered into an MoU with MSIL for imparting training to polytechnic trainers. This year, the training was carried out in six schedules starting January, 2018 to October 26, 2018, and 120 faculty members were imparted training.

- More than 20 customized workshops / training programs organized in/by the NITTTR, Chandigarh in 2018-19.

- Polytechnic faculty imparted training in various curriculum-specific areas, soft skills, NBA Accreditation and quality improvement. Apart from this, the faculty also attended need-based STCs at NITTTR Chandigarh as per NITTTR O-Plan.

- Workshop organized at NIELIT Mohali where training was given to trainers on newly introduced subject on Internet of Things and Artificial Intelligence.

- Quality Council of India, New Delhi, conducted training program on Adoption of ISO standards in Polytechnic Education, Skills Training and Skills recognition in the regulatory framework at GP Hisar. It was attended by 36 faculty members from nearby polytechnics.

- Workshops on subjects like Digital Learning, Quality Management Tools, ISO Standards, Curriculum Implementation and other industry based subjects have also been organized for Training of Teachers at Zonal level by NITTTR, QCI and Industry.
Technology Enabled Learning For Polytechnics

- The current applications for digital technologies in teaching and learning offer a wide range of new opportunities. Digital teaching and learning has two objectives; to develop the digital competencies of students and teachers, and to promote professional and social competence through the active use of digital technologies.
- The goal is to support teaching through modern methods and tools. The quality digital tools not only enhances the learning of the students but also make it easier for the teachers to enable the students to learn at their pace.
- HSBTE understands e-learning as an important building block in teaching with the aim of supporting students in the learning process, thereby increasing the quality of study.
- Centralized awareness workshop in collaboration with IIT Delhi organized at Government Polytechnic, Sonipat on 18.01.2019 for acquainting the polytechnic faculty of the State about Virtual Labs digital platform.
- Workshop organized in collaboration with NITTTR Chandigarh on 19.03.2019 with an aim to train the teachers to integrate the digital resources and open sources software’s with teaching learning process.
- Teachers are encouraged to include multi-medial content in their lectures, prepare teaching and learning material for digital systems, use computers/mobile devices and thereby increase the interactivity and motivation of the students.
- Students are encouraged to use the available possibilities to explore new forms of learning and communication, to participate directly in teaching, and to make the study more flexible through location and time-independent content availabilities.
- Integration of digital content in teaching learning process will help adequately to raise the standards of teaching, facilitate better understanding of students and can effectively improve the academic performance of the students.
- A web portal has been developed in-house with domain name as www.hsbtetutor.org.in for providing the access of the digital learning material curated by the subject experts as per the curriculum in the form of video lectured, practical demonstrations, presentations, E-books for improvement in the teaching learning process.

Digital learning contents for polytechnic students

- Video lectures delivered by polytechnic faculty / subject and e-Contents are available on the respective institute website.
- Swayam Prabha dishes facilitating live telecast of lectures by the experts of the reputed technical institutions in Polytechnics.
- Branch-subject wise digital learning e-Contents curated by subject experts are available on HSBTE portal. These contents are curated from various platforms such as NPTEL, NCTEL, NROER, Swayam, e-GyanKosh, National Digital Library, e-Pathshala, YouTube, Spoken Tutorials etc.
- A dedicated web portal www.hsbtetutor.org.in for providing the access of the digital learning in the form of video lectures, practical demonstrations, presentations, e-Books etc.
1) **Rationalization Committees**
   - About 35 district-wise Rationalization Committees are constituted with senior faculty from govt. / govt-aided polytechnics to ensure that teachers are awarded marks every session in co-relation with performance of the candidate in a fair and transparent manner.

2) **Conduct of examinations**
   - Online submission of examination form for which technical support and guidance is provided for about a month to students / institutions besides offering solutions to their problems.
   - Online payment of examination fee through payment gateway.
   - Region-wise nodal centres are established for various examination-related activities (about 20 Nodal Centres).
   - Establishment of examination centres (about 125 examination centres are set up in the State).
   - Examination duties:
     - About 800 Invigilators are appointed
     - 250 are appointed for approximately
     - 125 examination centres
     - 20 Flying Squads (2-3 members each) are set up to monitor the examinations throughout the State
   - Surprise checking and monitoring of examinations by the Board through special Flying Squads involving officers of Board/Directorate/HSTES.
   - Duties of Invigilators, Supdt., Dy. Supdt. are fixed through software application by randomly picking up the faculty from the staffing data of institutes to prevent any malpractices/collusion during the exams
   - Daily analysis of reports of each Centre Supdt. and Flying Squads is made and appropriate action, if required, taken.

3) **Evaluation work**
   - 12 Table Marking Centres (TMC)
   - Monitoring of TMC’s during evaluation by involving head examiners and officers of Headquarter.
   - Processing of UMC cases reported by Examination Centres as well as TMCs, decision on UMCs in the meetings of Regional UMC Committees. Resolution of Appeals against the decision of Regional UMC Committees through the Appellate Committee.
   - Online declaration of result on the website (hsbte.org.in)

4) **Declaration of result**
   - Online declaration of result in a record period of one month after evaluation of approximately 4 lakh answer sheets at 12 Table Marking Centres across Haryana

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**CERTIFICATION**

- DMCs of all semesters are issued online to the respective institutes immediately after the declaration of result.
- HSBTE has entered into MoU with Central Depository Services (India) Limited (CDSL) for utilizing the services of National Academic Depository (NAD).
- The digital depository will keep the academic awards in digital format and ensure data integrity. Only the concerned student is authorized to access academic awards in the digital mode, which could be DMC, Diploma Certificate through the NAD online. It will also eliminate the need to physically approach the Board for issuance of duplicate certificates in case of lost/theft/misplaced, as is the current practice. To log-in for accessing an academic award, a student should have either the Aadhar number as the user identity or the NAD id.
- DMCs of students of all Polytechnics affiliated with HSBTE and enrolled w.e.f. 2017 batch have been uploaded initially. The creation of a digital database will negate the possibility of fake/forged certificates and recruiters/Verifying agencies who want to get the credentials of applicants verified from the Board will be able to utilize NAD services for verification. HSBTE has uploaded 6162 DMC’s of students of 2017 batch.
CONSCIOUS and concerted efforts have been successfully made by the Board to reach out to institutions and industries and organize drives to boost training and placement of the students.

- **Soft skills training to students**
  
  Soft skill training for overall personality development is being provided by professional trainers from the Energy Efficiency Services Limited (EESL), New Delhi, and Naandi Foundation (Mahindra Pride Class Room), New Delhi, to the final year students of Govt. Polytechnics under CSR initiative as part of MoU with HSBTE.

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**INDUSTRIAL TRAINING & PLACEMENT DRIVES**

- All Govt./Govt. aided institutes in the State have been divided into six clusters where a three-layered approach for facilitating placements to students is being followed; at institute level, cluster level and at State level.

- The Board and institutes under its ambit have signed 285 MoUs with different MNCs or companies of repute for training and placement, industrial visits and expert lectures.

- Placement drives organized at each cluster in February and March 2019 wherein activities like seminars on career guidance, students project displays, expert lectures and display of students’ remarkable achievements and innovations, networking with industrialists, MSMEs and other supporting organizations as well as prestigious alumni along with job placements for the students take place.

- So far, 806 selections have been made and more than 1000 students shortlisted with an average salary package of Rs.15,000 per month.

<table>
<thead>
<tr>
<th>S.No</th>
<th>Cluster</th>
<th>Schedule</th>
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<tbody>
<tr>
<td>1</td>
<td>Sonepat cluster</td>
<td>25th to 28th Feb, 19</td>
</tr>
<tr>
<td>2</td>
<td>Manesar cluster</td>
<td>25th Feb to 1st March, 19</td>
</tr>
<tr>
<td>3</td>
<td>Hisar cluster</td>
<td>5th to 8th March, 19</td>
</tr>
<tr>
<td>4</td>
<td>Loharu cluster</td>
<td>5th to 8th March, 19</td>
</tr>
<tr>
<td>5</td>
<td>Ambala cluster</td>
<td>15th to 17th March, 19</td>
</tr>
<tr>
<td>6</td>
<td>Nilokheri cluster</td>
<td>18th to 20th March, 19</td>
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</tbody>
</table>
The event was an initiative to strengthen the bond between industry and technical institutions in the State by setting up Centres of Excellence in collaboration with industry along with placements and training by having MoUs. Hon’ble Chief Minister, Haryana, and Technical Education Minister graced the occasion.

Besides students from technical education, there were many participants from industry, technical institutions, universities and Govt. of India organizations.

On this occasion, 17 MoUs were signed with industry, including Escorts India Limited, I.S.G.E.C Heavy Engg. Limited, Subros Limited, Compaq International and others.

Centre of Excellence:

The Board has signed agreements for setting up six Centres of Excellence (CoE) with reputed companies like Power Grid Corporation India, Maruti Suzuki, Hero Motocorp, NTPC, Daffodil, Voltac et al in their respective area of expertise at different Polytechnics for training of students with an investment of approximately Rs 10.00 Cr under the CSR scheme by different industries.

CoE at Government Polytechnic Manesar by Maruti Suzuki India Ltd. and at Government Polytechnic Sonipat by Hero Motocorp shall be ready shortly.

IT Initiatives to boost efficiency

With a view to injecting efficiency in the working of different wings, the Board has taken various initiatives in the field of Information Technology. These are:

1. Online Payments and disbursements: All payments by the Board such as salary, disbursements related to honorarium / duties, procurement payments etc. are made through e-payment directly into the accounts of the beneficiary.

2. Functional portals for various exam related activities:
   i. hsbte.org.in - Website of the Board to provide information related to all the activities of Board.
   ii. www.hsbte.com - Portal for institution-level login for exam related activities:
      a) Uploading of Examination PCA forms / Affiliation forms
      b) Online calculations of institute-wise due amount of Examination Fee/ Rechecking Fee/ Affiliation Fee
      c) Online deposit of examination fee, rechecking fee, fee for extension of affiliation by the institutes through payment gateway. All other petty fees such as for migration, verification, duplicate DMC/ diploma, transcripts etc. are received through SBI POS
      d) Downloading of certificates such as DMC, result sheet etc. after declaration of result.
   iv. www.result.hsbte.com - Online exam results for information of students/institutes.
   v. www.staffinfo.hsbte.com - Updation of staff status by each polytechnic to randomly generate duties of supdt./ dy. supdt. exams and invigilators.
PREPARATION TOWARDS CHALLENGES OF INDUSTRY 4.0

The breakthroughs in science and technology are having a profound effect on business, labour markets, and ultimately on education systems. A recent report by the ILO estimates that automation will replace the jobs of 137 million people in Southeast Asia within the next 20 years. Therefore, it is essential to re-work the present education system to create an adaptable and flexible system that promotes educating and learning for the 4th Industrial Revolution and beyond. It is important to focus on ICT and future technologies, Teacher Education and lifelong learning for an adaptable and flexible education system. In addition to this, advancements in the digital economy and biotechnology coupled with globalization and population ageing are shifting how people learn, live and work.

With conversations about the challenges brought about by the 4th industrial revolution being under way, HSBTE has already started an imperative conversation and debate about how to reshape our education system into an adaptable, flexible and relevant environment wherein our students can learn and gain the necessary skills and competencies needed to succeed in a fast-changing world. The concept of “Educating for the 4th Industrial Revolution” is characterized by the fusion and amplification of emerging technology, breakthroughs in artificial intelligence, automation and robotics, multiplied by the far-reaching connectivity between people with mobile devices having unprecedented access to data and knowledge.

Though HSBTE has started doing a bit in this direction by educating the students about concepts of Machine learning and Artificial Intelligence in first year of Diploma itself, establishing Centres of excellence with reputed industries, strengthening industry institute interaction, providing new job opportunities, starting entrepreneurial clubs promoting Innovation and Incubation, however a lot more has to be done by the delivery mechanism i.e. polytechnics of the State and they will have to play a lead role in it as there will be following larger issues which need to be addressed and prepared:

- Implementation of continued and improved training in Science, Technology, Engineering and Mathematics (STEM) subjects, as well as investment in Information and Communications Technologies (ICTs).
- Continued efforts to expand existing facilities, as well as to improve human resource capacity.
- To boost Creative problem-solving, Human Resource Management, and social intelligence as they remain significant bottlenecks to machine learning and artificial intelligence.
- To augment 21st century skills i.e Soft Skills or Transversal Competencies.
- To teach Problem solving skill in Industrial and social life in an entrepreneurial manner as it will be one of the Key Performance Indicators.
**ACHIEVERS**

Outstanding Projects: The Department of Plastic Engg, Government Polytechnic, Ambala under the guidance of Sh. Pankaj Garg, HOD and Sh. Virender Nehra, Project Guide, has been engaging its students in designing innovative projects so as to train them to get prepared for the real world of work and entrepreneurship.

<table>
<thead>
<tr>
<th>TRACKLESS TOY TRAIN</th>
<th>BATTERY OPERATED HOVER BOARD</th>
<th>PREPARATION OF FRP COOLERS</th>
<th>PVC FILE RACK</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Final Year students of Plastic Technology designed a Trackless Toy Train having two bogies which was sponsored by MPM Public School, Ismailabad. The project was made up of complete fibre sheets, designed by students and an old Activa scooter engine was used to run the train and cost of project was 75000/-.</td>
<td>Another group of Final Year students have designed a battery operated and 360° rotatable Hover Board. The project was taken up by the students by getting inspiration from a youtube video. In-house made PVC board was used for the body of the Hover Board.</td>
<td>Fibre Reinforced Plastic coolers made up of complete plastic for various labs of Plastic Engg. department. The uniqueness of the coolers is these being rust and shock proof.</td>
<td>Complete cabinet is made up of PVC board (19mm) and is termite proof, corrosion resistant, light weight and fire resistant. Nowadays these boards are widely used in furniture, wall panelling, modular kitchens and decoration purpose as a replacement of wood, being environment friendly.</td>
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</table>

Mr. Vijay Wardhan Saraswat scores AllR 104 in Civil Services Exam 2018 (UPSC). He has done Diploma in Electronics and Communication Engineering from Government Polytechnic, Sirsa and B.Tech in ECE from CDLMGEC, Panniwala Mota, Sirsa.

- A team of four faculty members namely Sh. Jagmale Singh Lect. Computer Engg, Sh. Sunil Saharan Lecturer Electrical Engg., Sh. Abhinit Bajaj Lecture ECE and Sh. Pardeep Kumar Lecturer ECE of Government Polytechnic Nathusari Chopra brought laurels for their outstanding performance in task based training conducted by e-Yantra, IIT Bombay for establishment of Robotics lab in the institute. The team stood 2nd in accomplishing the assigned task among the participating institutes at All India Level. IIT Bombay conferred special recognition and showcased their achievement on its e-Yantra webportal.

- A team of two students namely Sh. Akash & Sh. Vipul, ECE Final year GP Manesar secured 1st rank in State level quiz contest organized on the topic “Energy Conservation & Renewable Energy” by Ministry of New & Renewable Energy at NIT Kurukshetra on Nov 3, 2018. They also received a cash reward of Rs. 21,000.

Obituary

Sh. Ashok Kumar joined the Department of Technical Education Haryana as Lecturer in Mechanical Engineering at GP Sonipat on 26.07.2004. He was born on 26.01.1971 at Chandigarh and departed for heaven on 06.11.2018. He was honest, dedicated, sincere and devoted towards performing his duties. He helped economically poor students by giving them books free of cost. He authored several engineering books which are very common among the students. An avid nature lover, he turned campus of Government Polytechnic, Sonipat into Green ECO friendly and developed a new Nursery having different variety of flowers, plants and trees. He was also a good sportsman and trained students for Inter-Polytechnic Badminton and the team bagged the Bronze Medal. The faculties deeply mourn his untimely passing as his was a life of service, love, compassion and excellence. May his soul rest in peace.