ADMISSION TO FIRST YEAR (SECOND SEMESTER) OF UG PROGRAMS FOR THE SESSION 2026-27

The Institute shall admit students to the second semester of UG programs in December 2026 subject to vacancies that exist in the first semester of first year. The students admitted in this category shall have to clear all the courses of the first semester as per the scheme of the respective discipline of Thapar Institute of Engineering & Technology (TIET), in which she/he is admitted. Students shall have to schedule such courses in the subsequent summer/regular semesters with the permission of Dean, Academic Affairs.

The eligibility & schedule of the admission will be as under:

A) BE/BTech programmes

Eligibility:

The candidate

1. has passed 10+2 or equivalent examination with at least 60% marks (55% for SC/ST candidates) in aggregate of three subjects, namely, **Physics, Mathematics** and any one subject out of **Chemistry, Biology, Biotechnology and Technical Vocational subject**.
2. has passed 10+2 examination in 2024, 2025 or 2026.
3. **should be a student of BE/BTech programme of a recognized Institute/University**
4. has qualified TIET Entrance Test.
5. should be a citizen of India.
6. should bear a good character and satisfy the prescribed requirements of the Institute.

B) BTech (Biotechnology) and BTech (Biomedical Engineering) programme

In addition to the eligibility mentioned in (A), candidates fulfilling the following eligibility criteria shall also be eligible for admission to BTech (Biotechnology) and BTech (Biomedical Engineering) programme.

Eligibility:

The candidate

1. has passed 10+2 or equivalent examination with at least 70% marks (65% for SC/ST candidates) in aggregate of three subjects, namely, **Physics, Chemistry and, Biology.**
2. has passed 10+2 examination in 2024, 2025 or 2026.
3. **should be a student of BE/BTech programme or B.Sc.(Medical) of a recognized Institute/University**
4. should be a citizen of India.
5. should bear a good character and satisfy the prescribed requirements of the Institute.

Tentative Schedule:

Last date of receipt of application forms	:	December 24, 2026
Issue of Admit Card	:	December 28, 2026
Date of Offline Entrance Test	:	January 03, 2027
Venue for Offline Entrance Test	:	Patiala and New Delhi
Timing for Offline Entrance Test	:	10:30 AM – 01:30 PM
Display of list of qualified candidates	:	January 07, 2027
Counselling for admission & deposit of fee	:	will be announced along with the list of qualified candidates

Note: 1) No separate letter for Counselling shall be issued.
2) Institute reserves the right to make these admissions.

ADMISSION PROCEDURE

1. Only those candidates shall be considered who shall apply on the prescribed application form available online on or before the last date with requisite application fee of Rs. 1,500/- (**Non-refundable**).
2. The application fee can be paid ***online*** or through ***Demand Draft (DD)*** in favour of **Thapar Institute of Engineering & Technology** payable at ***Patiala***.
3. In case, application fee paid through DD then Application Form along with DD should reach "**In-charge Admission Cell, Thapar Institute of Engineering & Technology, Patiala-147004"** on or before last date.
4. Candidate is required to pay tuition fee and other dues at the time of admission.
5. There will be only one counselling.
6. The number of seats available for admission shall be available on our website https://thapar.edu. 17.5% seats shall be reserved for SC, 7.5% seats for ST category and 3% for physically handicapped category. In case, any seat in reserved category remains vacant, the same shall be converted to the General Category.
7. Candidate should bring all the documents in original at the time of Counselling.
8. In case, a student of first year of Thapar Institute of Engineering & Technology gets a seat under this scheme then the seat vacated by such candidate shall be offered to other candidates in the merit list.
9. The candidates who will get admission under International Engineering Program shall be shifted to the partner University/Institute after the completion of their 4th semester at Thapar Institute of Engineering & Technology.
10. The students admitted/upgraded (in case of TIET students) in this category shall have to clear all the courses as per the scheme of the discipline of Thapar Institute of Engineering & Technology (TIET), in which she/he is admitted. They will

be required to pay the requisite fee as prescribed by the Institute as and when they will apply for these courses.

WITHDRAWAL OF SEAT / REFUND OF FEE:

Candidate wishing to withdraw the seat, must submit the withdrawal form by email to admissions@thapar.edu or by post to **IN-CHARGE, ADMISSION CELL, Thapar Institute of Engineering & Technology**. As per the refund policy of the Institute, only the Institute Security will be refunded after adjusting all the outstanding dues (if any). The candidates are advised to mention their Bank Account Number and IFSC code of the bank for the prompt refund.

GENERAL INFORMATION REGARDING BE/BTECH – DECEMBER 2026 ADMISSIONS INCLUDING ENTRANCE TEST SYLLABUS

There shall be a test of 3 Hours duration in which multiple choice questions with one correct answer will be asked. There will be 90 questions in all where in 30 questions will be asked from Physics, Chemistry and Mathematics sections each.

SYLLABUS FOR ENTRANCE TEST

CHEMISTRY

1. **Atomic Structure:** Dual nature of matter and radiation, Heisenberg uncertainty principle, quantum mechanical model of atom (quantum designation of atomic orbitals and electron energy in terms of principal, angular momentum and magnetic quantum numbers), electronic spin and spin quantum numbers, Pauli's exclusion principle, *Aufbau* principle, Hund's rule, atomic orbitals and their pictorial representation, electronic configurations of elements.

2. **Classification of elements and periodicity in properties:** Modern periodic law and present form of periodic table, electronic configurations of elements and periodic table, electronic configuration and types of elements and s, p, d and f blocks, periodic trends in properties of elements (atomic size, ionization enthalpy, electron gain enthalpy, valence/ oxidation states and chemical reactivity).

3. **Chemical bonding:** Kossel -Lewis approach to chemical bond formation, ionic bonds, covalent bonds, polarity of bonds and concept of electronegativity, valence shell electron pair repulsion (VSEPR) theory, shapes of simple molecules, valence bond theory, hybridization involving s, p and d orbitals and shapes of molecules σ and π bonds, Hydrogen-bonding.

4. **Ionic equilibrium and Redox reactions:** Acids, Bases and Salts and their ionization, weak and strong electrolytes degree of ionization and ionization constants, concept of pH, ionic product of water, buffer solution, common ion effect, solubility of sparingly soluble salts and solubility products. Electronic concepts of reduction - oxidation, redox reactions, oxidation number, balancing of redox reactions.

5. **Solutions:** Vapour pressure of solutions and Raoult's Law, Colligative properties, lowering of vapour pressure, depression of freezing point, elevation of boiling points and osmotic pressure, determination of molecular masses using colligative properties, abnormal values of molecular masses, van't Hoff

factor. Simple numerical problems.

6. **Electrochemistry:** Conductance in electrolytic solutions, specific and molar conductivity, variation of conductivity with concentration, electrolysis and laws of electrolysis, electrolytic and galvanic cells, emf. of a cell, standard electrode potential, Nernst equation.

7. **Coordination Compounds:** Basic ideas of Crystal Field Theory, colour and magnetic properties. Elementary ideas of metal - carbon bonds and organometallic compounds.

8. **Some basic principles of Organic Chemistry:** inductive effect, electromeric effect, resonance and hyperconjugation. Common types of organic reactions: substitution, addition, elimination and rearrangement reactions.

9. **Hydrocarbons:** Alkanes, Alkene and Alkynes: classification, nomenclature and important reactions. Aromatic hydrocarbons: structure and chemical reaction of benzene.

10. **Organic compounds with functional groups:** Relative reactivity and properties of Alcohols and phenols; Aldehydes and ketones: Carboxylic acids Amines.

11. **Polymers:** Classification of polymers, general methods of polymerization-addition and condensation: copolymerisation, some commercially important polymers (PVC, teflon, polystyrene, nylon-6 and 66, terylene and bakelite).

PHYSICS

1. **Measurement:** Units and dimensions, least count, significant figures and error analysis.

2. **Mechanics**: Kinematics in one and two dimensions, Circular motion, Relative velocity, projectiles, Newton's laws of motion; Inertial and noninertial frames of reference; Friction, Kinetic and potential energy, Work and power, Conservation of linear momentum and mechanical energy, Centre of mass and its motion, Impulse, Elastic and inelastic collisions, Law of gravitation, Gravitational potential and field, Acceleration due to gravity, Rigid body, moment of inertia, Angular momentum and its conservation law, Torque, Dynamics of rigid bodies.

3. **Properties of Bulk Matter:** Hooke's law, Young's modulus, Pascal's law, Buoyancy, Surface energy and surface tension, Viscosity, Stoke's law, Terminal velocity, Streamline flow, Bernoulli's theorem

4. **Waves and Oscillations:** Wave motion, longitudinal and transverse waves, Superposition of waves, progressive and stationary waves, Resonance, Beats, Speed of sound in gases, Doppler effect, Simple harmonic motions.

5. **Optics**: Reflection and refraction, Total internal reflection; dispersion, mirrors and lenses, Huygen's principle, Young's double-slit experiment.

6. **Heat and Thermodynamics**: Thermal expansion; Calorimetry, latent heat; Heat conduction, Newton's law of cooling; Ideal gas laws, Specific heats, Isothermal and adiabatic processes, Equivalence of heat and work, First law of thermodynamics, Blackbody radiation, Kirchhoff's law, Wien's displacement law, Stefan's law.

7. **Electricity and Magnetism**: Coulomb's law; Electric field and potential, Gauss's law, Ohm's law, Resistors and Capacitors in series and parallel, Energy stored in a capacitor, Kirchhoff's laws, Heating effect of current, Biot-Savart law and Ampere's law, Force on a moving charge and on a current-carrying wire in a uniform magnetic field, Magnetic moment of a current loop, Faraday's law, Lenz's law, Self and mutual inductance, RC, LR and LC circuits, Electromagnetic waves, Displacement current.

8. **Modern Physics**: Atomic nucleus, Alpha and beta particles, gamma radiation; Law of radioactive decay, Binding energy, Fission and fusion processes, Photoelectric effect, Bohr's theory of hydrogen-like atoms, Characteristic and continuous X-rays, Moseley's law, de Broglie wavelength of matter waves.

MATHEMATICS

1. **Complex Numbers:** Solution of the quardratic equations. Algebraic properties of complex numbers. Argand plane and polar representation of complex numbers. Statement of Fundamental Theorem of Algebra, solution of quadratic equations in the complex number system. Square root of a complex number. Demoivre's theorem.

2. **Continuity and Differentiability:** One to one and onto functions, composite functions, inverse of a function, Continuity and differentiability, derivative of composite functions, chain rule, derivatives of inverse trigonometric functions, derivative of implicit functions. Concept of exponential and logarithmic functions. Derivatives of logarithmic and exponential functions. Logarithmic differentiation, derivative of functions expressed in parametric forms. Second order derivatives.

3. **Applications of Derivatives: Rolle's and Lagrange's Mean Value Theorems their geometric interpretation:** Rate of change of bodies, increasing/decreasing functions, tangents and normals, use of derivatives in approximation, maxima and minima.

4. **Integration:** Integration of a variety of functions by substitution, by partial fractions and by parts. Definite integrals as a limit of a sum, Fundamental Theorem of Calculus, Basic properties of definite integrals and evaluation of definite integrals.

5. **Applications of the Integrals**: Applications in finding the area under simple curves.

6. **Differential Equations:** Order and degree. General and particular solutions of a differential equation. Formation of differential equation whose general solution is given. Solution of differential equations of first order and first degree by method of separation of variables of homogeneous differential equations. Solutions of linear differential equation of order one.

7. **Probability:** Conditional probability, multiplication theorem on probability, independent events, total probability, Baye's theorem, Random variable and its probability distribution, mean and variance of a random variable. Repeated independent (Bernoulli) trials and Binomial distribution.

8. **Matrices and Determinants:** Matrix operations (Addition, multiplication and scalar multiplication of matrices), Elementary row and column operations, inverse of a matrix, Adjoint and inverse of a square matrix. Consistency, inconsistency and number of solutions of system of linear equations

9. **Vector Algebra:** Properties and applications of scalar (dot) product of vectors, vector (cross) product of vectors, scalar triple product of vectors projection of a vector on a line.