

8. POST GRADUATE DIPLOMA IN PLANT TRANSGENIC TECHNOLOGIES :

This program shall be offered by the Department of Biotechnology.

8.1 DURATION OF THE PROGRAMME: One year (two semesters)

8.2 MODE OF SELECTION : Admission will be made on the Merit of the Entrance Test only. Duration of test shall be 80 minutes (75 Questions). 1/4th marks shall be deducted for every wrong answer.

8.3 NO. OF SEATS: 20(Gen-14, SC/ST-5, PH-1)+ 3 FN/NRI seats. Refer section 11 for eligibility & other conditions.

8.4 Eligibility criterion:

MSc Degree in Biology/ Botany/ Biochemistry/ Biotechnology/ Microbiology/ Zoology/ Genetics.

8.5 Syllabus for Entrance Examination:

Microbiology: Prokaryotic and eukaryotic cell structure; Microbial nutrition, growth and control; Microbial metabolism (aerobic and anaerobic respiration, photosynthesis); Nitrogen fixation; Chemical basis of mutations and mutagens; Microbial genetics (plasmids, transformation, transduction, conjugation); Microbial diversity and characteristic features; Viruses.

Biochemistry: Biomolecules and their conformation; Ramachandran map; Weak inter-molecular interactions in biomacromolecules; Chemical and functional nature of enzymes; Kinetics of single substrate and bi-substrate enzyme catalyzed reactions; Bioenergetics; Metabolism (Glycolysis, TCA and Oxidative phosphorylation); Membrane transport and pumps; Cell cycle and cell growth control; Cell signaling and signal transduction; Biochemical and biophysical techniques for macromolecular analysis

Molecular Biology and Genetics: Molecular structure of genes and chromosomes; DNA replication and control; Transcription and its control; Translational processes; Regulatory controls in prokaryotes and eukaryotes; Mendelian inheritance; Gene interaction; Complementation; Linkage, recombination and chromosome mapping; Extrachromosomal inheritance; Chromosomal variation; Population genetics; Transposable elements, Molecular basis of genetic diseases and applications

Plant and Animal Biotechnology: Special features and organization of plant cells; Totipotency; Regeneration of plants; Plant products of industrial importance; Biochemistry of major metabolic pathways and products; Autotrophic and heterotrophic growth; Plant growth regulators and elicitors; Cell suspension culture development: methodology, kinetics of growth and production formation, nutrient optimization; Production of secondary metabolites by plant suspension cultures; Hairy root cultures and their cultivation. Techniques in raising transgenics.

Immunology: The origin of immunology; Inherent immunity; Humoral and cell mediated immunity; Primary and secondary lymphoid organ; Antigen; B and T cells and Macrophages; Major histocompatibility complex (MHC); Antigen processing and

presentation; Synthesis of antibody and secretion; Molecular basis of antibody diversity; Polyclonal and monoclonal antibody; Complement; Antigen-antibody reaction; Regulation of immune response; Immune tolerance; Hyper sensitivity; Autoimmunity; Graft versus host reaction.

Recombinant DNA Technology: Restriction and modification enzymes; Vectors: plasmid, bacteriophage and other viral vectors, cosmids, Ti plasmid, yeast artificial chromosome;

cDNA and genomic DNA library; Gene isolation; Gene cloning; Expression of cloned gene; Transposons and gene targeting; DNA labeling; DNA sequencing; Polymerase

chain reactions; DNA fingerprinting; Southern and northern blotting; In-situ hybridization; RAPD; RFLP; Site directed mutagenesis; Gene transfer technologies; Gene therapy.

Plant Sciences: Plant cell structure, organization, organelles, cytoskeleton, cell wall and

membranes; anatomy of root, stem and leaves, meristems, vascular system, their ontogeny, structure and functions, secondary growth in plants and stellar organization; Plant water relations, transport of minerals and solutes, stress physiology, stomatal physiology, signal transduction, N₂ metabolism, photosynthesis, photorespiration; respiration ; Flowering: photoperiodism and vernalization, biochemical mechanisms involved in flowering; molecular mechanism of senescence and aging, biosynthesis, mechanism of action and physiological effects of plant growth regulators, Principles of Mendelian inheritance and linkage. Principles, methods - selection, hybridization, heterosis; male sterility, genetic maps and molecular markers, sporophytic and gametophytic self incompatibility, haploidy, triploidy, somatic cell hybridization, A general account of economically and medicinally important plants; Nature and classification of plant diseases; plant-microbe beneficial interactions diseases of important crops caused by fungi, bacteria and viruses, and their control measures, mechanism(s) of pathogenesis and resistance, molecular detection of pathogens; Ecosystems - types, dynamics, degradation, ecological succession; food chains and energy flow.

Animal Sciences: Broad classification of Animals, Origin and history of life on earth, theories of evolution, natural selection, adaptation, Speciation, Comparative

physiology, the respiratory system, circulatory system, digestive system, the nervous system, the excretory system, the endocrine system, the reproductive system, the

skeletal system, osmoregulation Nature of parasite, host-parasite relation Embryonic development, cellular differentiation, organogenesis, metamorphosis, genetic basis of

development, stem cells. Metabolism, regulation and nutritional requirements for masscultivation of animal cell cultures; Kinetics of cell growth and product formation and effect of shear force; Product and substrate transport; Micro & macro-carrier culture; Hybridoma technology; Live stock improvement; Cloning in animals; Genetic engineering in animal cell culture; Animal cell preservation.

IMPORTANT DATES AND INFORMATION:

The online application form is available on www.thapar.edu. Fill the complete details and then take the **print out** of the form. Paste a recent passport size photograph on it. Please keep one copy of the printout of completely filled form as it will be required at the time of document checking during counselling. You can pay the the required amount online or attach DD (in favour of Thapar University and payable at Patiala) and send it to "Incharge Admission Cell' Thapar University, Patiala (Punjab)-147004.

Application fee:

Amount to be deposited with print out of application forms taken from website.	Rs 1500
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IMPORTANT DATES

	PGDPTT
Last date for receipt of completed application forms.	June 04, 2014
Date of Entrance test to be conducted by TU	ONLINE Entrance test (June 24 – 29, 2014) Browse www.thapar.edu for details
Display of result of Entrance Test	For others: July 07,2014

Admission schedule:

PGDPTT admission schedule

Counselling including deposit of fee : July 17, 2014
Last round of counselling for vacant seats if any : July 29, 2014

Venue for counseling/document checking: University Auditorium

FOR ANY OTHER DETAILS INCLUDING ELIGIBILITY CRITERIA, FEE ETC

CONTACT (0 8288008120, 8288008121) Email: admissions@thapar.edu Website: www.thapar.edu

IMPORTANT NOTE: Candidates are advised to regularly browse www.thapar.edu for information/instructions regarding admissions. No separate letters shall be sent.

All applications must be sent to "Incharge Admission Cell' Thapar University, Patiala (Punjab)-147004.

Documents required at the time of counselling:

Candidates must bring with them following original certificates and **a set of attested copies of all the certificates** at the dates specified hereunder for various programmes.

- **Copy of the Application form**
- 10+2 /diploma/graduation/post graduation DMC
- Matriculation/Higher Secondary Certificate showing Date of Birth
- Result Card of Entrance Exam
- Admit Card of Entrance Exam
- Character Certificate
- Medical Fitness Certificate
- Reserved Category Certificate on the prescribed proforma and signed from the competent authority (if applicable)
- Affidavit required in case of discontinuity of studies
- Undertaking by candidates not having result of qualifying exam as per prescribed format.
- Migration Certificate
- Income Certificate
- **Check list proforma**

Commencement of session: July 21, 2014

HOW TO APPLY

- 1 Candidates seeking admission in TU shall fill up the online form available on our website www.thapar.edu. Kindly fill the complete details and then take two print outs of the form and paste a recent passport size colored photograph.

Application fee paid Online: Please send one of the printouts of form to the Incharge Admission Cell. The hardcopy of application form alongwith required documents should reach the University within 7 days after the last date of submission of online applications.

Application fee paid through DD: Please send one of the printouts by attaching the required amount of DD (in favour of Thapar University and payable at Patiala).

Retain second copy of the printout of the form to be produced at the time of document checking of original documents during counseling.

Important Note: A candidate cannot claim admission merely by filling the application form and paying the application fee. If he/she fulfils the eligibility criteria as per the prospectus, only then he/she shall be considered for admission during counseling. So, candidates are advised to read eligibility and other conditions before filling the form.

- 2 The original certificates and set of attested copies of the certificates are required to be produced at the time of document checking.
- 3 Every candidate must indicate in his/her application the category of seat for which he/she wants to apply. **A copy of the certificate of the reserved category (if applicable) shall be attached.**
- 4 Application completed in all respects should reach the INCHARGE ADMISSION CELL, THAPAR UNIVERSITY, PATIALA -147004, on or before the last prescribed date of the respective programmes.
- 5 Incomplete application in any manner and received after the due date/time will be rejected. The University does not take any responsibility for postal delay or loss in transit of the application form, demand draft, withdrawal form or any other communication in this regard.
- 6 The specimens of the format of the required certificates are available on our website for the guidance of candidates. Each certificate must be submitted on the prescribed format and must be issued by the competent authority as mentioned, under proper seal/stamp of their office on a date prior to or on the last date for submission of application form.
- 7 **PENALTY FOR WRONG INFORMATION/SUPPRESSION OF INFORMATION.**

If at any stage it is found that a candidate has concealed, suppressed or distorted any information/fact, in the application form, his/her admission to the University, if granted, shall stand cancelled. He/she will have no claim, whatsoever, against the University.

- 8 The provisions of Prospectus 2014-15 may be changed by the competent authority without any notice.
- 9 In case of any dispute, the decision of the Director, TU, Patiala shall be final and binding on the candidates.

10 **For candidates other than BE/BTech**

Candidates who are appearing in the final exam of the qualifying degree/diploma (for LEET) are eligible to apply. Such candidates have to furnish following undertaking at the time of counselling.

"I am applying on my own risk and responsibility as my final result of the Qualifying exam has not been declared.

I do hereby declare that I do not have any backlog paper in any of the previous semesters (Years) of study of the qualifying exam and also I do not expect any backlog in my final exam.

I assure you that I will produce the proof of passing of my Qualifying examination with the minimum percentage of marks required on or before December 31, 2014, failing which my admission shall stand cancelled and I shall not claim any right on any count whatsoever."

INSTRUCTIONS FOR ONLINE ENTRANCE TEST

- 1 Entrance test shall be conducted ONLINE.
- 2 Candidates will be able to generate 'Admit Card' from April 16-June 17, 2014 provided their DD alongwith print out of application form reaches Thapar University in time. The login id and password created by candidate at the time of filling the application form shall be used to register for generation of Admit card.

Note: The Admit card shall be issued provisionally to the candidate subject to his/her satisfying the eligibility condition.

- 3 After registering, the candidate shall take out two print outs of 'Admit Card', paste latest photograph on each and then come to the entrance test centre. Alongwith admit cards, the candidate will also carry any one of the identity proof (Original) with him/her like Passport/Voter I Card/ PAN Card/ Driving License. One copy of the admit card shall be retained by the entrance test centre. The candidate shall keep the other copy (duly acknowledged by the examiner at test centre) to be shown at the time of document checking.
- 4 **The entrance test shall contain objective type questions. Other details are as under:**

SNo	Name of the programme	Duration of Entrance Test	Number of questions in the entrance test
1	PGDPTT	1.5 hours	75

- 5 While registering for ONLINE entrance test on our website, the candidate shall choose entrance test centre of his/her choice from the available list and any one slot available in the test period given above i.e. (**June 24 – 29, 2014**). Once slot is chosen, it cannot be changed thereafter.
- 6 Filling of valid mobile number is mandatory.

Instructions for counseling

Admission shall be made on the basis of the merit of prescribed Entrance Test of respective programmes and fulfillment of other conditions as per procedure detailed in the Prospectus.

General Instructions:

- 1 In case of a tie among candidates securing equal marks in the merit list, the same will be broken in accordance with the following criteria:
- (a) Candidate senior in age shall rank higher in order of merit.
- (b) In the case of a tie in age also, a candidate getting higher percentage of marks in the qualifying examination shall be ranked higher in order of merit.
- (c) In the case of a tie in percentage of marks in the qualifying examination also, a candidate securing higher percentage of marks in matriculation/secondary or equivalent examination shall rank higher in order of merit.

2 Withdrawal of Seat / Refund of fee:

Candidate wishes to withdraw the seat, must submit the application to IN-CHARGE, ADMISSION CELL, Thapar University. The fee will be refunded after adjusting all the outstanding dues, if any. The candidates are advised to mention their Account Number and IFSC code of the bank for the prompt refund.

	Date of Receipt of Application	Amount to be refunded
(i)	One day before the final counseling or before the start of the session	: After deducting Rs. 1000/- of the total fee deposited.
(ii)	From the date of final counselling and up to September 30, 2014	: 50% Tuition Fee + 50% Development Fee + University Security and Alumni Fee + 50% of all Hostel dues (if applicable)
(iii)	After September 30, 2014	: University Security + Alumni Fee

- 3 Seats, if any in the reserve categories remained unfilled, such vacant seats shall be filled by General category candidates on the basis of merit. In case a SC seat

remains vacant, it will be first offered to ST candidate or a vice versa before converting into General Category.

- 4** **Candidates from physically handicapped category are required to produce the Medical Certificate from the Chief Medical Officer of the District concerned, which should indicate the extent of permanent disability in support of their claim. Minimum 40% permanent disability is required to be eligible under this category.** Further, the above provisions will be subject to the decision of the Admission Committee of the University whether such a candidate would be able to pursue the studies at the University with the specific disability. The decision of the Admission Committee in this regard shall be final.
- 5 No separate letters for counseling/document checking/deposit of fee shall be issued for any programme.
- 6 Admitted candidates will have to submit the migration certificate from the earlier University/Board within a month of their admission.**
- 7 Electronic gadgets such as Mobile Phones, Pagers, etc. are not permitted in the Examination Centre.
- 8 The statements made in this Prospectus and all other information, contained herein are believed to be correct at the time of publication. However, the University reserves the right to make at any time, without notice, changes in and/or additions to the regulations of University and conditions governing the conduct of students, requirements for degree, fee and any other information, or statements contained in this Prospectus either on its own or under any rules or regulations imposed by UGC/MHRD. No responsibility will be accepted by the University for hardship or expense encountered by its students or any other person for such changes, additions, omissions or errors, no matter how they are caused.
- 9 All disputes will be subject to jurisdiction of the Courts at Patiala only. The person in whose name the University can sue or be sued shall be the Registrar, Thapar University, Patiala.
- 10 The students of all the regular programmes are not allowed to join any job till they complete all the requirements for the award of degree. Only part-time students are allowed to join job.
- 11 In case,
a selected candidate submits false information about fee, eligibility, rank of entrance test
or
a candidate who is not offered any seat but deposits the full fee

then seat allotted to him/her shall stand cancelled.
- 12 Candidates must be medically fit and must bring along with them a medical fitness certificate signed by a Gazetted Medical Officer at the time of admission on the prescribed proforma as per Annexure-IV.

13 MODES OF PAYMENT OF APPLICATION FEE AND OTHER DUES:

13.1 APPLICATION FEE : In the form of DD or through Online payment.

13.2 TOTAL FEE:

- i) **Receipts in any Axis Bank/Kotak Mahindra Bank account-to-account transfer):** It is available in all the branches of **Axis Bank/Kotak Mahindra Bank**. A sample payment pay-in-slip is enclosed at Annexure-IX. The system generates **Journal Number** which is to be used for linking the payment. The students are instructed to get the 6-10 digit **journal number** from the branch where they have made the payment and feed the same in the web site where the details are captured along with date of payment. The deposit of amount in the below mentioned account of the University will not give any right to the depositor for jurisdiction of the station where it has been deposited in any manner what so ever it may be.

For depositing money through AXIS/KOTAK MAHINDRA BANK, a candidate can deposit money in favour of the following account:

AXIS Bank	KOTAK MAHINDRA BANK LTD
910010028666757	02630020000237

- ii) In the form of Demand Draft (DD), the DD of requisite amount should be made in favour of Thapar University, Patiala and payable at Patiala. The DD must reach the University on or before the prescribed date otherwise the candidature shall be cancelled.
- iii) **Candidates depositing total fee through AXIS/KOTAK MAHINDRA BANK must enter complete details in 'Fee Confirmation Slip' (FCS) available at www.thapar.edu on or before the respective last prescribed date. In case, a candidate fails to enter the details, his/her candidature will not be processed further.**