



दामोदर घाटी निगम/DAMODAR VALLEY CORPORATION
मानव संसाधन विभाग/Human Resource Department
डीवीसी टावर्स, वी.आई.पी रोड, कोलकाता-700054/
DVC Towers, VIP Road, Kolkata – 700054



(Ref: Advt. No. PLR/SCD/2024/5/2)

Dtd. 05/06/2024)



NOTICE FOR RECRUITMENT OF ENGINEERS AS EXECUTIVE TRAINEES (ETs) SOIL CONSERVATION IN DVC THROUGH COMPUTER BASED TEST

Damodar Valley Corporation (DVC), a statutory organization, under the Ministry of Power, Government of India, and one of the premier power utilities in India engaged in Thermal/Hydel Power Generation, Transmission & Distribution, Water Management and foraying into Renewables and Mining area with own mines at Tubed, with its Head Quarter located at Kolkata and field formations spread across West Bengal & Jharkhand invites **ONLINE applications** from bright, result-oriented and promising **Engineers** to join its journey of growth as **Executive Trainee (ET) in the disciplines of Soil Conservation** through computer based test.

DVC having a total Generation capacity (Thermal + Hydel) of 6687.2MW & Solar 13.923MWp, has a massive expansion plan of Renewables (5500MW) and Super Critical and Ultra Critical Thermal Generation of (3720MW). DVC also supplies water to industries, Municipal Corporations etc. For details on Plants/Stations of DVC, please visit the DVC website www.dvc.gov.in

Interested and eligible candidates may apply **ONLINE** only through the DVC website www.dvc.gov.in (**Career → Recruitment → Recruitment Notices**). **No other means/mode of application shall be accepted.** Please read this Advertisement/Notification carefully and ensure eligibility criteria before submitting the **ONLINE** application.

Table-A

Sl. No.	Name of Post & Post No.	Vacancies with Reservation						Scale of Pay (As per 7 th Pay Revision)	Age Limit as on closing date of online application (For UR)
		Total	UR	OBC (NCL)	SC	ST	EWS		
1.	EXECUTIVE TRAINEE (SOIL CONSERVATION), 2024/11	02	02	--	--	--	--	Rs 56,100-1,77,500/- in Pay Matrix Level-10 of 7th CPC (M2 grade)	29 Years

NB: The projected vacancies indicated above may increase/decrease depending upon the future requirements and at the discretion of the DVC Management.

1. ELIGIBILITY CRITERIA

a. Details of Minimum Essential Qualification (QR)

Sl. No.	Post Name & Post No	Essential Qualification Requirement (QR)
1.	ET (SOIL CONSERVATION), 2024/11	Full-time bachelor's degree in Agricultural Engineering from AICTE/appropriate statutory authority approved Indian University/Institution with not less than 65% marks in aggregate of all years/semesters as per conversion formulae of the concerned University/Institution.

- b. **Age Limit:** - Maximum age not more than 29 years of age as on **closing date of online application. No upper age limit for DVC Departmental candidates.**
- c. Selected candidates after Computer based test will have to mandatorily produce Final Marksheet/ Provisional/ Final pass certificate for Degree course at the time of Document verification (DV).

2. SELECTION PROCESS

Eligible candidates will have to undergo a Computer Based Test. Based on the Merit and vacancy requirement, the list of successful candidates for documents verification will be made available at www.dvc.gov.in.

Written Test/CBT shall be of Objective Type (each question shall have four answer options) of two hours' duration consisting of two parts –

- Part-I consists of General Aptitude Test (GAT) on vocabulary, verbal comprehension, quantitative aptitude, reasoning ability, data sufficiency and interpretation, numerical ability etc.
- Part-II consists of Technical Knowledge Test (TKT) having specific questions from respective discipline.

Please refer **Annexure -I** for Brief syllabus, number of questions, CBT question format, negative markings, etc.

Qualifying Criteria in Written Test/CBT: **50% of Total marks in Each part (Part-I & Part-II)**

However, appointment of selected candidate is subject to his/ her being found medically fit, after documents verification, as per the Corporation Norms. Such appointments shall also be subject to the service and conduct rules of the Corporation.

(i) **Verification of Credentials:** - While appearing for Documents Verification at the time of joining, the candidates are required to produce his/her proof of Identity in **Original** such as Aadhaar Card, Voter Card, Pan Card, Driving License, Passport etc. If the identity of the candidate is doubtful, the candidate may not be considered for further selection process.

(ii) The shortlisted candidates will be called for Documents Verification through email only and the details such as **Date, Time and Venue of the same** shall be hosted on the DVC website only. **Please note that NO hard copy of the Call Letters to the shortlisted candidates for Documents Verification will be sent by Post or issued separately.** Hence, candidates are advised to keep track of their application status by visiting the DVC website regularly during the recruitment process. Please note that no other mode of communication, apart from emails, pertaining to the selection process other than that mentioned above will be followed.

(iii) Final selection will be after successful completion of medical test and documents verification.

3. PAYMENT OF APPLICATION FEE:

(i) Candidates belonging to **General/OBC(NCL)/EWS** categories are required to pay a **Non-refundable Application Fee of Rs 300/- (Rupees Three Hundred Only)**.

(ii) Candidates belonging to **SC/ST/PWBD/Ex-SM** categories & **DVC Departmental Candidates** are **exempted from payment of application fees**.

(iii) **Incomplete applications/ applications without application fees shall summarily be rejected.**

(iv) The last date for payment of the application fee is **04/07/2024**.

(v) **Candidates must ensure that payment of Rs 300/- is made at one go and amount less than Rs. 300/- will not be accepted as application fee.**

(vi) **Application Fee once paid will not be refunded under any circumstances.** Candidates are, therefore, requested to verify their eligibility before paying the application fee. The bank charges as applicable have to be borne by the candidates.

4. COMPENSATION PACKAGE:

The Selected candidates will be placed in the Rs 56,100-1,77,500/- in Pay Matrix Level-10 of 7th CPC (M2 grade) after completing the duration of the one-year probation period. On successful completion of the probation period, the candidates will be absorbed on the same afore mentioned scale and pay matrix. The compensation package includes Basic Pay, Central Dearness Allowance (CDA), Medical Reimbursement, Leave Travel Allowance, NPS, Conveyance Allowance, Leave Encashment and HRA etc. admissible as per Corporation Rules in force from time to time.

5. SERVICE AGREEMENT BOND:

The selected candidates will be required to execute a service agreement bond to successfully complete the prescribed probation period of 1(one) year and thereafter serve the organization for at least 3(three) years i.e. overall 4 (Four) years.

The amount of the bond for candidates belonging to **General/OBC(NCL)/EWS** categories is Rs. 5,00,000 (Rupees Five Lakhs Only) & Rs. 2,50,000 (Rupees Two lakhs fifty thousand only) for candidates belonging to SC/ST/PwBD categories, plus applicable interest.

6. HEALTH:

Before joining, candidates will have to undergo Pre-Employment Medical Examination by the DVC Medical Board and the decision of the Board will be final and binding. No relaxation in health standards is allowed.

7. GENERAL INFORMATION AND INSTRUCTIONS:

- (i) Only Indian Nationals are eligible to apply.
- (ii) Before applying online /appearing for document verification, the candidate should ensure that he/she fulfils the eligibility criteria and other norms mentioned in this advertisement hosted on the DVC website www.dvc.gov.in In case, it is detected at any stage of the recruitment process that a candidate does not fulfil the eligibility norms and/or that he/she has furnished any incorrect/false information or has suppressed any material/fact(s), his/her candidature shall stand automatically cancelled. If any of the above shortcomings is/are detected even after the appointment, his/her services are liable to be terminated without notice.
- (iii) The candidature of candidates at all stages of the selection process will be purely provisional subject to satisfying the prescribed eligibility criteria.
- (iv) Essential qualification should be from an **Indian University/Institute** recognized by AICTE/appropriate statutory authority.
- (v) Selected candidates may be posted at any of the DVC establishments.
- (vi) Candidates with Engineering not having approval by the AICTE/appropriate statutory authority are not eligible to apply for the posts. Candidates in this connection are advised to bring **proof of AICTE approval in the form of a print-out of AICTE notification from their website showing the name of the College/Institution** and the course or any other documentary proof issued by the College/University/Institution. **The onus lies on the candidate to prove his/her eligibility in all respects by submitting the required documents.**
- (vii) Whether CGPA/OGPA/DGPA or Letter Grade in engineering is awarded, its equivalent percentage of marks should be indicated in the application form as per norms adopted by the University/Institute.
- (viii) Illustration towards calculating marks obtained and maximum marks for filling in the online application form -“Percentage of marks obtained by the candidate in the Degree shall be calculated based on the practice followed by the University/Institution from where the candidate has obtained the Degree . In case the candidates are awarded grades/CGPA instead of marks, the conversion of grades/CGPA to percentage of marks shall be based on the procedure certified by the University/Institution from where they have obtained the degree “. This has been further illustrated below: Suppose: Number of subjects = 6 (each of maximum marks of 100) CGPA equivalent percentage obtained by the candidate = 94% Therefore, Maximum marks obtained = $6 \times 100 = 600$ Marks obtained = $(94 \times 600) / 100 = 564$

- (ix) In case the University/Institution does not have any scheme for converting CGPA/Grades into equivalent marks, the equivalence would be established by dividing the candidate's CGPA by the maximum possible CGPA and multiplying the result with 100.
- (x) Candidates employed with Government Departments/Public Sector Undertakings/Autonomous Bodies are required to produce a "**No Objection Certificate**" from their present employer at the time of **Documents verification** positively.
- (xi) DVC reserves the right to cancel/ restrict/ enlarge/ modify/ alter the recruitment/selection process, if the need so arises, without issuing any further notice or assigning any reason whatsoever.
- (xii) The decision of DVC in all matters relating to eligibility, acceptance or rejection of online applications, the penalty for false information, mode of selection, selection and allotment of posts and places of postings to the selected candidates shall be final and binding on the candidate. No enquiry/ correspondence or telephonic discussion will be entertained in this regard. If any shortcoming is detected even after the appointment, the services of such candidates are liable to be terminated without notice.
- (xiii) During physical verification, all signatures should be identical. Different styled Signature on various occasions during Recruitment activities may lead to the rejection of the candidature.
- (xiv) Mere being called for Computer based Test shall not vest any right in a candidate to be called for further selection process i.e. Documents Verification.
- (xv) In order to avoid last minute rush, the candidates are advised to apply early enough. DVC will not be responsible for network problems or any other problem in submission of Online Application.
- (xvi) **The eligibility of the candidate for final selection will be confirmed after Document Verification.**
- (xvii) Any subsequent amendment/notice/clarification etc., if any, shall be made available on the DVC website only. As such, candidates are advised to keep visiting the DVC website www.dvc.gov.in regularly for important updates till the completion of the recruitment process for the posts.
- (xviii) No interim correspondence will be entertained on any account during the recruitment process. Canvassing in any form will be treated as disqualification.
- (xix) Only Xerox copies of documents will be retained. However, records of other than selected candidates are not maintained after the completion of the recruitment process.
- (xx) While preparing the final merit list, if two or more candidates secure equal marks, the merit of such group of candidates will be as per their date of birth (**i.e. more senior in age will be placed first before junior in age**).
- xx) If any certificate etc. is issued in a language other than Hindi / English, candidates are advised to submit a certified translation of the same in either Hindi or English language at the time of documents verification or whenever called for.
- xxi) Schedule for Computer Based test will be uploaded in DVC website.
- xxii) In case a candidate submits more than one application for the same post, the application with the latest registration number shall only be considered.

xxiii) For the Un-Reserved (UR) vacancy, SC/ST/EWS/OBC (NCL) candidates can apply subject to meeting with all general standards of eligibility.

xxiv) There is no provision of re-checking / re-evaluation of response Sheets / Answers.

xxv) Management reserves the right to raise or lower the qualifying standards in any stage of the selection process depending on availability of sufficient number of candidates.

xxvi) Complaints attributable to the incompatibility of the Client Systems, ignorance of users, nonavailability of internet connectivity or any other aspects beyond the direct control of DVC employees or systems will not be entertained.

xxvii) All information regarding this recruitment process would be available in the career section of DVC website only <https://www.dvc.gov.in/cms-web/recruitment-notices>. Applicants are advised to check the website periodically for important updates. Once registered for DVC, all correspondences shall be made through their registered email ID / SMS or candidate login only.

xxviii) Legal jurisdiction will be only at any appropriate court in Kolkata in case of any dispute.

8. DOCUMENTS/ TESTIMONIALS TO BE BROUGHT MANDATORILY AT THE TIME OF DOCUMENTS VERIFICATION (AFTER COMPUTER BASED TEST FOR SELECTED CANDIDATES):

Candidates must bring one set of self-attested photocopies along with ORIGINALS of the following documents/testimonials at the time of documents verification.

- i.** Printout of **ONLINE Application Form**.
- ii.** Proof of **Date of Birth** (Class Xth Board Certificate or Class Xth Passing Certificate)
- iii.** Valid **Certificates & Mark sheets** of Class Xth, XIIth, Degree in Engineering (semester-wise/year-wise).
- iv.** Valid Degree in Engineering.
- v.** Valid **SC/ ST/ OBC (NCL)/ EWS/ PwBD certificate (in the prescribed format)**, if applicable, *The minimum degree of Disability for Persons with Benchmark Disability candidates would be 40%.*
- vi.** Valid **Age relaxation cum Domicile Certificate / Discharge Certificate**, etc., if applicable in the prescribed format issued by a competent authority.
- vii.** Valid **Experience Certificate(s)**, if applicable.
- viii.** **No-Objection Certificate (NOC)** from the current employer if working in a PSU/Central Govt./State Govt./Semi-Govt./etc.
- ix.** **Four (4) recent passport size-colored photographs.**
- x.** **Identity Proof** (Aadhaar Card/PAN card/ Passport/ Driving License/ Voter ID card).

09. IMPORATNT INSTRUCTION ON HOW TO APPLY FOR DVC ONLINE - APPLICATION/ REGISTRATION

- **MODE OF APPLICATION:** candidates have to register themselves **ONLINE** at the **DVC website** www.dvc.gov.in → **Career** → **Recruitment** → **Recruitment Notices**.
- Closing date of ONLINE applications :- **04.07.2024 (Till 23:59 hrs)**.
- Closing date of payment of application fees :- **04.07.2024**.

- Before applying ONLINE, candidates are advised to read the Detailed Advertisement/Notification carefully and will ensure that they must fulfil the essential requirements of the Post and other conditions as mentioned in the Notification.
- **No other means/mode of application shall be accepted.**
- Candidate can select any preferred test centre (3 preferences). However, allotment of Test Centres to the candidates is at the discretion of DVC.
- If a candidate is not exempted from payment of application fees (**only SC/ST/PwBD/Departmental candidates are exempted**), he/she [**GEN/OBC(NCL)/EWS** category candidates] will be required to pay a non-refundable application fee of **Rs 300/- (Rupees Three Hundred Only)**.
- **Application fee once paid will not be refunded under any circumstances.** Candidates are, therefore, requested to verify their eligibility before paying the application fee.
- **Application process will be treated as complete only on submission of application fees, wherever applicable.**
- Candidates are advised to upload legible copies of the following documents while submitting online application in the space earmarked in the online application: -
 - a. Scanned copy of recent passport size colour photograph in the format mentioned in the online application. (Photograph should be minimum 200 dpi in JPG format. The size should be between 10kb to 100kb).
 - b. Scanned copy of signature in the format mentioned in the online application. (Signature should be minimum 200 dpi in JPG format. The size should be between 10kb to 50kb).
 - c. Date of Birth Proof: Matric / Birth Certificate (wherein DOB is mentioned) in .pdf format (max. 1MB).
 - d. Qualification Certificate (Degree) along with Mark Sheets of all years / semesters along with Proof of norms adopted by the Technical Board / Institute to convert CGPA / OGPA / DGPA into percentage (if applicable) (all Qualification Certificate & Mark Sheets are required to be scanned in .pdf format) (max. 1MB).
 - e. Candidates working in Govt. / PSU are required to apply through the proper channel and need to upload "No-Objection Certificate" from the present employer in .pdf format. (max. 1MB).
 - f. Caste Certificate in the prescribed Govt. of India format issued by Competent Authority (if applicable) in .pdf format . (max. 1MB).
 - g. Persons with Benchmark Disability (PwBD) Certificate in the prescribed Govt. of India format issued by Competent Authority (if applicable) in .pdf format (max. 1MB)
 - h. In case of requirement of scribe, Certificate in prescribed format issued by Competent Authority as per Govt. of India guidelines regarding physical limitation by the candidate to write should be produced.
 - i. Domicile cum Age relaxation certificates for Candidates from J&K State / Riots Victim in the prescribed Govt. of India format issued by Competent Authority (if applicable) (max. 1MB) in .pdf format (max. 1MB).

Applicants are advised to take a printout of the submitted online application and note down the application number and password generated at the time of online registration. The candidates called for Document Verification are required to produce the above uploaded documents in original for verification. Candidates are not required to forward the hard copies of applications to DVC.

10. FOLLOWING INFORMATION / DOCUMENTS TO BE KEPT READY BEFORE APPLYING ONLINE- IMPORATNT INSTRUCTION ON HOW TO APPLY FOR DVC ONLINE

- i) **One recent scanned photograph of size 3.5cm X 3.5 cm (Between 10 KB to 100 KB) and signature of size between 10 KB & 50 KB to be uploaded while applying.** The photograph should be with a clear front view of the candidate without a cap or sunglasses. Identical photos shall be used throughout the selection process.
- ii) Candidates will also have to upload their Class Xth /XIth Certificate or marksheet, essential qualification certificate, etc. along with photograph and signature.
- iii) **Certificates/Mark sheets relating to Academic & Professional qualifications**, etc. to be kept ready for entering marks.
- iv) The **E-mail ID & Contact No.** entered in the online application form must remain valid for at least one year from the date of the Notification for all future correspondences. Please enter email correctly since all important communications shall be through emails only.
- v) After having arranged all information/documents, candidates should visit the DVC website: www.dvc.gov.in and follow the instructions given in this detailed Notification/Advertisement. **Step 1** is to fill in all the particulars in the Online Application Form. **Step 2** is to upload the photograph, signature and other relevant documents/certificates. **Step 3** is to Preview the application form and the data can be edited if required and updated, **Step 4** is to pay the application fee (if applicable) and then final **Step 5** is to **SUBMIT** the application with the payment receipt number. Application once submitted cannot be edited. Only Submitted applications will be accepted.
- vi) No request with respect to the change in any data entered by the candidate will be entertained once the application is submitted successfully.
- vii) After successful submission of the online application including uploading of scanned photograph and signature, a **Unique Application Number** will be generated and thereafter candidates need to take a printout of the application so made. Printout without a system-generated number will not be accepted in any case.
- viii) **Incomplete applications/ applications without application fees (if applicable) will summarily be rejected.**
- ix) Candidates are required to keep the printout of the **Online Application Form** and keep it with him/her safely for future reference.
- x) Candidates are also required to **bring the ORIGINALS** of all the documents as mentioned at **SL. No. 10 of this Notification/Advertisement** pertaining to Proof of DOB, Academic & Professional Qualification, Caste & Disability Certificate (if applicable) etc. **at the time of Documents verification. The self-attested documents submitted in hard copy along with the online application will be verified with originals at the time of documents verification.** If any candidate is found ineligible while verifying the documents, he/she shall not be considered for selection process.
- xi) **No hard copy of the Online Application Form or Certificates/Testimonials, etc. is required to be sent to DVC HQ before appearing for the Document Verification.**
- xii) Management reserves the right to cancel / restrict / enlarge / modify / alter the recruitment / selection process, if need so arises, without issuing any further notice or assigning any reason.

11. IMPORATANT INFORMATION

Before appearing for the **Documents Verification** candidates are required to apply **ONLINE** only (which is mandatory) by clicking the “**APPLY ONLINE**” link available at the DVC website www.dvc.gov.in→ **Career**→ **Recruitment**→**Recruitment Notices**. The online registrations will remain activated from **05.06.2024 till 23:59 hrs of 04.07.2024** .

Candidates are also required to bring the printout of the **Online Application Form** enclosing all supporting documents in **ORIGINAL** along with one set of **self-attested photocopies of supporting documents** (mentioned at Sl. No. 08 of this Advertisement/Notice) at the time of document verification.

Before applying, candidates should keep mark sheets of Xth, XIIth, Degree, etc. as applicable for entering marks & a scanned copy of coloured photograph& signature ready to be uploaded while applying ONLINE.

12. IMPORATANT DATES:

Commencement of ONLINE Submission of Application to DVC	05.06.2024
Closing Date for ONLINE Submission of Application to DVC	04.07.2024 (Till 23:59 hrs)
List of Provisionally Shortlisted Candidates, Date for Documents verification	Shall be notified later the DVC website only www.dvc.gov.in (Under Careers→Recruitment→Recruitment Notices)
Helpline No:- For Technical Queries: +91-9289484657/ +91-9717434395 (During Official working hours only) For Eligibility Queries: 033-6607/2532/2539 Email-ID: helpdesk@dvcruitment.co.in / recruitment@dvc.gov.in	

Note: 1) Any corrigendum and subsequent changes in the date of Computer Based Test, Documents verification, Venue, etc. will be notified on the DVC website only. Therefore, all applicants are requested to visit the DVC website www.dvc.gov.in (Careers→Recruitment→Recruitment Notices) regularly for important updates.

2) Test date to be notified later in DVC website.

**Executive Director (HR)
For & on behalf of DVC**

**Indicative Syllabus for Computer Based Test (CBT) for Soil Conservation
Discipline**

I. Salient Points

- a. **Pattern of question paper:** The question paper will be bilingual i.e. both in **English and Hindi, except the test of English knowledge(objective)**. All the questions will be objective type and shall have 4 options of which one option will be correct.
- b. **Duration of the computer-based test** – Total duration would be **2 hours** comprising of the General Aptitude Test (GAT) and Technical Knowledge Test (TKT)
- c. **No. of questions in each part i.e. in General Aptitude Test (GAT) and Technical Knowledge Test (TKT)** - There will be 30 numbers of General Aptitude Test (GAT) and 70 numbers of questions in Technical Knowledge Test (TKT) and. Thus, there will be **100 numbers** of questions.
- d. **Marks of each question and total marks of the question paper** – Each question would carry **1 mark** and the total marks of the paper (General Aptitude and Technical Knowledge) would be **100**.
- e. **Negative marking** - There will be a negative marking of **0.25 mark** for each wrong answer. However, no mark will be deducted for not attempting the question by candidate.

II. Indicative Syllabus for Computer Based Test (CBT) for Soil Conservation Discipline.

Syllabus for General Aptitude Test (GAT)

A. General Intelligence & Reasoning: The Syllabus for General Intelligence would include questions of both verbal and non-verbal type. The test may include questions on analogies, similarities, differences, space visualization, problem solving, analysis, judgment, decision making, visual memory, discrimination, observation, relationship concepts, arithmetical reasoning, verbal and figure classification, arithmetical number series, etc. The test will also include questions designed to test the candidate's abilities to deal with abstract ideas and symbols and their relationships, arithmetical computations, and other analytical functions.

B. General Awareness: Questions will be aimed at testing the candidate's general awareness of the environment around him/ her and its application to society. Questions will also be designed to test knowledge of current events and of such matters of everyday observations and experience in their scientific aspect as may be expected of any educated person. The test will also include questions relating to India and its neighboring countries especially pertaining to History, Culture, Geography, Economic Scene, General Polity and Scientific Research, etc. These questions will be such that they do not require a special study of any discipline.

C. General English: English Language & English Grammar. Narration, Voice, Basic Sentence Patterns. Transformation of Sentences, Determiners and Preposition, Tenses, Prefix, Suffix, Parts Of Speech-Common errors (Noun, Pronoun, Articles, Adverb, Punctuation, Preposition etc.) , Modals, Phrases, Idioms, Vocabulary

Syllabus for Technical Knowledge Test (TKT) Soil Conservation Discipline

Sl. no	Subtopic	Detail Description
1	Soil and Water Conservation Engineering	Hydrologic cycle, precipitation and its forms, rainfall measurement and estimation of mean rainfall, frequency analysis of point rainfall. Mass curve, hyetograph, depth- area-duration curves and intensity-duration-frequency relationship. Hydrologic processes- interception, infiltration -factors influencing, measurement and indices. Evaporation - estimation and measurement. Runoff - factors affecting, measurement, stage - discharge rating curve, estimation of peak runoff rate and volume, rational method, Cook's method and SCS curve number method.
2	Soil and water erosion	Introduction, causes and types, factors affecting and effects of erosion; Soil loss estimation – universal soil loss equation (USLE) and determination of their various parameters; application and limitations of USLE; Modified soil loss equation (MUSLE) and RUSLE; Rainfall erosivity – estimation of erosivity from rainfall data by KE _{>25} and EI ₃₀ methods; Soil erodibility - topography, crop management and conservation practice factors; Measurement of soil erosion by runoff plots and by soil samples; Water erosion – mechanics and factors affecting erosion; forms of water erosion, Gullies and their classification, stages of gully development; Water erosion control measures– agronomical measures, tillage practices and conservation tillage; Mulching; Engineering measures and their planning and layout, Contour stonewall and trenching and their suitability for use, flow measuring structures.
3	Gully and ravine reclamation	Principles of gully control - vegetative measures, brush wood dams, loose rock fill dams; Temporary structures of gully control, permanent gully control structures; Grassed waterway Wind erosion and control measures, Land use capability classification objectives of classification, capability, limitation, land capability unit, land capability sub-classes; Land use capability classification by United States Department of Soil Conservation Service, limitations of different LUC;
4	Sedimentation in tanks and reservoirs	Sedimentation, sources of sedimentation, factors responsible for sedimentation; effects of sedimentation, types of sediment load, sediment transportation, sediment delivery ratio, trap efficiency; Estimation of sedimentation, bed load estimation, suspended load sampling; Measurement of sedimentation - can type, bottle type, bed load sampling, box type, pan type, pit type; Sedimentation in reservoirs - factors affecting sedimentation, rate of reservoir sedimentation, silt monitoring and storage loss in tanks and reservoirs, reservoir sedimentation control.
5	Water Harvesting and Soil conservation Structures	Water harvesting - principles, importance, and issues. Water harvesting techniques – classification based on source, storage, and use. Runoff harvesting – short-term and long - terracing techniques. Short - term harvesting techniques – terracing and bunding, rock and ground catchments. Long-term harvesting techniques – purpose and design criteria. Structures – farm ponds – dug out and embankment reservoir types, tanks and subsurface dykes. Farm pond – components, site selection, design criteria, capacity, embankment, mechanical and emergency spillways, cost estimation and construction. Percolation pond – site selection, design and construction details. Design considerations of nala bunds. Soil erosion control structures – introduction, classification, and functional requirements. Permanent structures for soil conservation and gully control – check dams, drop, chute and drop inlet spillways – design requirements, planning for design, design procedures – hydrologic, hydraulic and structural design and stability analysis. Hydraulic jump and its application. Drop spillway – applicability, types – straight drop, box – type inlet spillways – description, functional use, advantages and disadvantages, straight apron and stilling basin outlet, structural components, and functions. Chute spillway – description, components, energy dissipaters, design criteria of Saint Antony Falls (SAF) stilling basin and its limitations. Drop inlet spillway – description, functional use and design criteria.