



Government of India  
**DEPARTMENT OF ATOMIC ENERGY (DAE)**  
Bhabha Atomic Research Centre  
(BARC) Training Schools



## Invite Engineering Graduates and Science Postgraduates

- Who would relish challenges in frontier areas of Science and Technology,
- Who would like to be part of an expanding program of Nuclear Reactors, Accelerators and Fuel Cycle Technologies,
- Who would enjoy pursuing innovative research in Engineering, Physics, Chemistry, Biosciences or Geology.

to apply for recruitment as  
**Scientific Officers (Group-A post of Government of India)**  
through its academic programs  
**OCES-2021 and DGFS-2021**

### TRAINING SCHEMES AND EMPLOYMENT DESCRIPTION

**1. One-Year Orientation Course for Engineering Graduates and Science Postgraduates for the year 2021-2022(OCES-2021)** conducted at the BARC Training Schools. Table-1 lists Eligible Disciplines. Table-2 lists the Eligible Disciplines and orientation of the Training Program at each of the Training Schools. A Trainee Scientific Officer (TSO), who scores a minimum of 50% aggregate marks on completion of the Training Program, is declared to have completed the course successfully. Successful TSOs will be posted as Scientific Officers in one of the following DAE units:

a) Bhabha Atomic Research Centre (BARC), Mumbai\*, b) Indira Gandhi Centre for Atomic Research (IGCAR), Kalpakkam, c) Raja Ramanna Centre for Advanced Technology (RRCAT), Indore, d) Variable Energy Cyclotron Centre (VECC), Kolkata, e) Heavy Water Board (HWB), Mumbai\*, f) Nuclear Fuel Complex (NFC), Hyderabad\*, g) Board of Radiation and Isotope Technology (BRIT), Mumbai\*, h) Nuclear Power Corporation of India Ltd (NPCIL), Mumbai\*, i) Bharatiya Nabhikiya Vidyut Nigam Ltd (BHAVINI), Kalpakkam\*, j) Atomic Minerals Directorate for Exploration & Research (AMD), Hyderabad\*, k) Uranium Corporation of India Ltd (UCIL), Jaduguda\*, l) Directorate of Construction, Services and Estate Management (DCS&EM), Mumbai\*

\*These units have their Head Office at the indicated locations. Placement can be at the Head Office or at other facilities of these units located in different parts of India.

**Allocation of a successful OCES TSO to a DAE unit is carried out based on the needs of DAE's programs and the TSO's performance in the OCES program. DAE reserves the right to place TSOs in any of its other units also or the Atomic Energy Regulatory Board (AERB).**

Performance above a specified threshold in course work at the Training School will entitle TSOs to a Post-Graduate Diploma or could earn them credits towards M.Tech./M.Phil./Ph.D. programs of Homi Bhabha National Institute (HBNI), a Deemed to be University.

**2. Two-Year DAE Graduate Fellowship Scheme for Engineering Graduates and Physics Postgraduates for the years**

**2021-2023 (DGFS-2021).** Under this scheme, Engineering Graduates and Physics Postgraduates who have excelled in the Selection Interviews for the BARC Training Schools' program and who have independently secured admission for M.Tech./M.Chem. Engg. in select Institutes and specializations as listed in Table-3, are paid stipend and tuition fee to pursue a M.Tech./M.Chem.Engg. degree while retaining their employment in DAE. After successful completion of one-year course work at the Institute, Fellows undertake project work, which is assigned by DAE and supervised jointly by a DAE guide and an Institute guide. On successful completion of M.Tech./M.Chem.Engg., they are posted as Scientific Officers in DAE. On joining, they are required to first undertake a four-month **Orientation Course for DGFS Fellows(OCDF)** at the BARC Training School, Mumbai. The DGFS Fellows are enrolled and posted in one of the following units of DAE:

a) BARC, Mumbai\*\*, b) IGCAR, Kalpakkam. Allocation of a DGFS Fellow to a DAE unit is done at the beginning of the M.Tech./M.Chem.Engg. program.

\*\*Placement can be at any of the BARC facilities located in different parts of India.

Selected candidates are required to execute an agreement and a personal Indemnity Bond to serve DAE for at least three years after completion of Training. Indemnity Bond is for Rs.6,78,000 for OCES TSOs and Rs. 13,58,000 for DGFS Fellows#. No third party surety is required.

#The Bond Amount for DGFS Fellows pursuing M.Tech./M.Chem.Engg. at certain DGFS Institutes may be different, depending on the tuition fee at the concerned Institute.

During Training: (i) Stipend and Allowances: OCES TSOs and DGFS Fellows are paid a stipend of Rs. 55,000 per month during the period of their Training. Additionally, they are paid a one-time book allowance of Rs. 18,000.(ii) DGFS Fellows are reimbursed the tuition fee for M.Tech. / M.Chem.Engg.and are additionally paid a one-time Contingency Grant of Rs. 25,000 to meet M.Tech. / M.Chem.Engg. project related expenses.(iii) Boarding and Lodging in DAE or DGFS Institute Hostel respectively, during Training, is mandatory.

**Grade and Pay Scale On Appointment:** Appointment in all the units shall be as a Scientific Officer(C) in the Level 10 –Rs. 56,100 of 7th CPC Pay Matrix. Appointment will be at the beginning of the pay scale with OCES TSOs getting two or three increments depending on their performance during the OCES program and the DGFS Fellows getting three or four increments\*\*\*depending on their performance in M.Tech./M.Chem.Engg. and the four-month OCDF. Total Monthly Emoluments (with three increments) at the time of joining including Dearness Allowance, House Rent Allowance and Transport Allowance at the present Mumbai rate will be approximately Rs.95,000. In addition, other Allowances such as Leave Travel Concession by air, every year up to first eight years (subject to conditions) and once in two years thereafter, Children's Education Allowance and an annual Professional Update Allowance are also payable. A comprehensive Contributory Health Service Scheme for employees and their dependent family members is also available.

\*\*\*DGFS Candidates whose performance in the M.Tech./M.Chem.Engg. and OCDF programs is below a specified threshold will get zero increments.

### SELECTION PROCESS

Selection to OCES/DGFS-2021 is a two-step process: **Screening** to short-list candidates followed by **Selection Interviews** of the short-listed candidates. There is a separate selection process for each of the disciplines listed in Table-1 except for FRT-M (code 30), FRT-E (code 31), QA&QC (code 32) and RSES (code 44).

**OCES-2021 : One-Year Orientation Course for Engineering Graduates & Science Postgraduates starting in December, 2021 will be conducted at BARC Training Schools** situated at: BARC, Mumbai; IGCAR, Kalpakkam; NFC, Hyderabad; RRCAT, Indore; AMD, Hyderabad.

**DGFS-2021 : Two-Year DAE Graduate Fellowship Scheme for Engineering Graduates and Physics Postgraduates for joining M.Tech. / M.Chem.Engg. in select specializations starting in July 2021 at :** Indian Institute of Technology(IIT)–Bombay, Delhi, Guwahati, Kanpur, Kharagpur, Madras, Roorkee and BHU-Varanasi; National Institute of Technology (NIT) - Rourkela; Institute of Chemical Technology (ICT) – Mumbai.

**On successful completion of the OCES or DGFS programs, Trainee Scientific Officers (TSOs)and DGFS Fellows will be appointed as Scientific Officers in one of the DAE units or Atomic Energy Regulatory Board with attractive career progression opportunities up to the highest echelons.**

Performance of OCES TSOs above a certain threshold at the BARC Training School will entitle them to a Post-Graduate Diploma of Homi Bhabha National Institute (HBNI), a Deemed to be University and could also earn them credits towards M.Tech. / M.Phil. / Ph.D. programs of HBNI. DGFS Fellows will get opportunities some time in their career for pursuing Ph.D. through HBNI after joining DAE.

**DAE strives to have a workforce which reflects gender balance and women candidates are encouraged to apply.**

**FRT-M is an additional Training Scheme option available to applicants belonging to Mechanical Engineering or Chemical Engineering (codes 21 and 22). FRT-E is an additional Training Scheme option available to applicants belonging to Electrical Engineering or Electronics Engineering (codes 24 and 25). QA&QC is an additional Training Scheme option available to applicants belonging to Mechanical Engineering or Metallurgical Engineering (codes 21 and 23). RSES is an additional Training Scheme option to applicants belonging to Nuclear Engineering, Physics and Chemistry disciplines (codes 29, 41 and 42). There is no separate Training Scheme called 'Nuclear Engineering' and selected candidates belonging to Nuclear Engineering (code 29) will be allotted RSES or Mechanical or Chemical as their Training Schemes. Screening for Selection Interview is through two alternative channels :**

**(a) Online Screening Examination:** It will be conducted in nine Engineering disciplines (codes 21-29) and in four Science disciplines (codes 41-43 and 45) at more than forty cities spread across India. The Online Screening Test for OCES/ DGFS-2021 will be held in September, 2021. Travel Allowance is not paid for appearing in it.

**(b) GATE Score :** Candidates will be screened in for Selection Interview on the basis of a valid GATE-2020 or GATE-2021 Score.

**Cut-off GATE scores for screening into Selection Interviews will be decided only after the Online Test has concluded and candidates are therefore advised to maximize their chances of being screened into the Selection Interview stage by availing both of the screening avenues detailed above. Screening in of applicants in Nuclear Engineering (code 29) will be only through the Online Test.**

Students graduated/ graduating with a Masters Degree from University of Mumbai – Department of Atomic Energy Centre for Excellence in Basic Sciences (UM-DAE CBS) and National Institute of Science Education and Research (NISER), Bhubaneswar in the academic year 2019-2020 / 2020-2021, and whose Cumulative Grade Performance Average (CGPA) is greater than or equal to 7.5 on a scale of 10 will directly be screened into the Selection Interview stage, provided they meet all other eligibility requirements of the OCES/DGFS-2021 program. It is to be noted that this option of being screened in based on CGPA can be exercised only once. Such candidates should first submit their application for the OCES/DGFS-2021 program on the Online Application Portal and subsequently forward their details through the Directors of their institutes.

**Selection Interviews** of short-listed candidates in all disciplines except Geology will be conducted at the BARC Training School, Mumbai. Interviews in Geology will be held in Hyderabad. Outstation applicants travelling for Interview will be paid to-and-fro AC-III tier normal train fare by shortest route or actual fare, whichever is less. Selection Interviews are tentatively scheduled to be held in October, 2021. The list of candidates short-listed for Selection Interview will be posted on the Online Application Portal in September, 2021. Short-listed candidates will be able to choose an Interview slot, based on availability, on the Online Application Portal, in September, 2021. **Final Selection is solely on the basis of performance in Selection Interview, subject to medical fitness.**

**Other Opportunities :** Candidates applying for OCES/DGFS-2021 may be considered for direct recruitment in ECIL and IPR. Such candidates will be governed by stipendiary norms of ECIL and IPR and terms and service conditions of ECIL and IPR respectively on absorption. A merit list created out of the Selection Interview Marks may also be used to offer admission to M.Sc.(Engg.) / Ph.D. or Diploma in Radiological Physics programs of BARC under the aegis of HBNI in the academic year 2021-22. Students admitted to the M.Sc.(Engg.)/ Ph.D. program will be paid a Fellowship / Stipend for the duration of their academic program. No permanent employment with DAE is assured to such Research Fellows.

### ELIGIBILITY CRITERIA –

**A. Qualifying Degrees and Other Academic Requirements for OCES/DGFS-2021**

**a) For Engineering Disciplines (codes 21-29):** B.E./B.Tech./B.Sc.(Engineering) / 5-year Integrated M.Tech. with a minimum of 60%\* aggregate marks in one of the 9 engineering disciplines (codes 21-29) mentioned in Table-1. Applicants opting to be considered on the basis of a GATE score must have a valid GATE-2020 or GATE-2021 Score in the same engineering discipline as the qualifying degree discipline. **Those having qualifying degree in branches like Aerospace, Automobile, Automotive, Aeronautical Engineering, Industrial Production, Reliability, Ceramics, Architecture, Geology, Mining, Bio-Medical Electronics/ Instruments, Communication, Information Technology, Master of Computer Applications, Dyes & Dye Intermediates, Electrochemical, Energy Systems, Oils & Fats, Paints & Varnishes, Petrochemicals, Plastics, Paper, Sugar Technology, Textiles, Mechatronics, Power Engineering, Power Plant Engineering, Software Engineering, Electronics & Computer Engineering, Biomedical Electronics, Biomedical Instrumentation etc. are NOT eligible.**

**b) For Fast Reactor Technology-M (FRT-M, code 30):** B.E. / B.Tech. / B.Sc. (Engineering) / 5-year Integrated M.Tech. in Mechanical Engineering or Chemical Engineering with minimum of 60%\* aggregate marks in qualifying degree. **FRT-M is an additional Training Scheme option available to applicants belonging to Mechanical Engineering or Chemical Engineering (codes 21 and 22) and hence there will not be separate screening test or Selection interview.**

**c) For Fast Reactor Technology-E (FRT-E, code 31):** B.E. / B.Tech. / B.Sc.(Engineering) / 5-year Integrated M.Tech.in Electrical Engineering or Electronics Engineering with minimum of 60%\* aggregate marks in qualifying degree. **FRT-E is an additional Training Scheme option available to applicants belonging to Electrical Engineering or Electronics Engineering (codes 24 and 25) and hence there will not be separate**

screening test or Selection interview.

**d) For Quality Assurance & Quality Control (QA&QC, code 32):** B.E. / B.Tech. / B.Sc. (Engineering) / 5-year Integrated M.Tech. in Mechanical Engineering or Metallurgical Engineering with minimum of 60%\* aggregate marks in qualifying degree. **QA&QC is an additional Training Scheme option available to applicants belonging to Mechanical Engineering or Metallurgical Engineering (codes 21 and 23) and hence there will not be separate screening test or Selection interview.**

**e) For Physics Discipline (code 41) :** M.Sc. in Physics/Applied Physics with Physics and Mathematics at B.Sc. or at subsidiary and/or ancillary level in case of 5-year integrated M.Sc. or B.E. /B.Tech. in Engineering Physics with a minimum of 60%\* aggregate marks in the qualifying degree. M. Sc. candidates (other than those applying with a 5-year integrated M.Sc. degree) must additionally have a minimum of 60%\* aggregate marks in B.Sc. Physics postgraduate applicants opting to be considered on the basis of a GATE Score should have a valid GATE-2020 or GATE-2021 Score in 'Physics'. Applicants having B.E./B.Tech. (Engineering Physics) as qualifying degree can apply on the basis of a valid GATE-2020 or GATE-2021 Score either in 'Physics' or in 'Engineering Sciences'.

**f) For Chemistry Discipline (code 42):** M.Sc. in Chemistry with Physics up to B.Sc. or at subsidiary and/or ancillary level in case of 5-year integrated M.Sc. and Mathematics at Std. XII or at B.Sc. or at subsidiary and/or ancillary level in case of 5-year integrated M.Sc. with a minimum of 60%\* aggregate marks in M.Sc. All candidates (other than those applying with a 5-year integrated M.Sc. degree) must additionally have a minimum of 60%\* aggregate marks in B.Sc. Applicants opting to be considered on the basis of a GATE Score should have a valid GATE-2020 or GATE-2021 Score in 'Chemistry'.

**g) For Biosciences Discipline (code 43):** M.Sc. in Agriculture, Biochemistry, Microbiology, Molecular Biology, Biotechnology, Genetics, Botany, Zoology, Plant Science, Plant Breeding, Plant Pathology, Entomology, Food Technology, Animal Science, Life Sciences, Biomedical Sciences and Biosciences with a minimum of 60%\* aggregate marks in M.Sc. as well as in B.Sc.; or B.E. / B.Tech. / B.Sc.(Tech.) only in Food Technology with minimum of 60%\* aggregate marks. M.Sc. applicants should have at least one out of Physics or Chemistry or Biochemistry or Agriculture Chemistry as a subject at the B.Sc. stage or at subsidiary and / or ancillary level in case of 5-year integrated M.Sc. Applicants opting to be considered on the basis of a GATE Score should have a valid GATE-2020 or GATE-2021 Score in 'Life Sciences' or in 'Biotechnology'. **Those having M.Sc. with specialization in subjects like Fisheries, Horticulture, Forestry, Agronomy, Animal Husbandry, Marine Biology, Bio-analytical Sciences, Bioinformatics, and Home Science etc. and B.E. / B.Tech. / M.Tech. in Biotechnology / Genetic Engineering / Biomedical Engineering are NOT eligible.**

**h) For Radiological Safety & Environmental Science (RSES, code 44):** B.E. / B.Tech. in Nuclear Engineering / Nuclear Technology / Nuclear Science & Technology with minimum of 60%\* aggregate marks or M.Sc. in Physics or Chemistry with Physics and Chemistry up to B.Sc. or at subsidiary and/or ancillary level in case of integrated M.Sc., and Mathematics at Std. XII or at B.Sc. or at subsidiary and / or ancillary level in case of 5-year integrated M.Sc., with minimum of 60%\* aggregate marks in M. Sc. All science candidates (other than those applying with a 5-year integrated M.Sc. degree) must additionally have a minimum of 60%\* aggregate marks in B. Sc. **RSES is an additional Training Scheme option to applicants belonging to Nuclear Engineering, Physics and Chemistry disciplines (codes 29, 41 and 42) and hence there will not be separate screening test or Selection interview.**

**i) For Geology Discipline (Code 45):** M.Sc. or equivalent M.Tech. in Geology/ Applied Geology/ Applied Geochemistry with Geology at B.Sc. or 5-year integrated M.Tech. in Geological Technology. Eligible candidates must have two subjects out of Mathematics, Physics and Chemistry up to B.Sc. or at subsidiary and / or ancillary level in case of 5-year integrated M.Sc./ 5-year integrated M.Tech., with minimum of 60%\* aggregate marks in M.Sc./M.Tech. All eligible candidates (other than those applying with a 5-year integrated M.Sc. /M.Tech. degree) must have a minimum of 60%\* aggregate marks in B. Sc. Additionally, eligible candidates must have passed Mathematics in Std. XII. All applicants opting to be considered on the basis of a GATE Score should have a valid GATE-2020 or GATE-2021 Score in 'Geology and Geophysics'. **Those having B.Tech. in Geology, Mining are not eligible.**

**j) Those having M.Sc. (by research) or Ph.D. are not eligible.**

**\*A minimum of 60% marks means the marks as per the ordinances of the respective university.**

**B. Admission to DGFS :** Candidates having a qualifying degree in disciplines 21-28 or 41 and who meet the corresponding eligibility criteria listed above are eligible to apply for DGFS provided they secure admission for M.Tech./M.Chem.Engg. starting in the academic year 2021 in select Institutes and in specializations listed in Table-3. Confirmation of M.Tech./M.Chem.Engg. admission should be communicated **after announcement of the OCES-2021 Selection List. Securing admission in one of the valid M. Tech. specializations at one of the DGFS Institutes along with Selection for OCES, does not guarantee the award of a DGFS Fellowship as DGFS is offered as per the needs of DAE programs and only to the most meritorious candidates as per Selection Interview performance.**

**C. Age Limit (Age as on August 1, 2021)** a) General Category - 26 years, b) OBC - 29 years, c) SC/ST - 31 years, d) Dependents of those who died in the riots of 1984 (Dep1984) - 31 years, e) Persons domiciled in Kashmir Division of erstwhile Jammu & Kashmir State from 01/01/1980 to 31/12/1989 (Dom Kashmir) - 31 years. Physically Challenged persons of all categories are eligible for age relaxation of 10 years.

**D. Nationality :** Applicant must be a citizen of India.

**E. Applicants working in Central/ State Government Units/ PSUs / Aided Institutes should produce a No Objection Certificate (NOC) from their organization at the time of Selection Interview, failing which they may not be interviewed.**

**F. Application Fee:** A non-refundable Application Fee of Rs. 500 is chargeable from the male applicants belonging to General and OBC categories. **Women candidates, candidates belonging to SC/ST, Dependents of Defense Personnel Killed in Action (DODPKIA) and Physically Challenged candidates are exempted from payment of Application Fee.** Candidates awaiting final results may also apply. If selected, candidates who are eligible in all other respects but are awaiting final results will be allowed to commence course work. However, retention of these candidates in the OCES or DGFS programs is subject to the mark-sheet of their final result, which meets the eligibility requirements of the OCES/ DGFS programs, being submitted by December 31, 2021 in case of OCES TSOs and as per the requirement of the concerned DGFS Institutes in the case of DGFS Fellows.

**HOW TO APPLY- Only Online Applications will be accepted.**

**Candidates are required to visit the website 'http://www.barconlineexam.in' in the period July 12, 2021 to August 7, 2021 and submit an Online Application by following the instructions therein. Candidates are advised to read the 'Information Brochure' before applying.**

**Table-1: Eligible Disciplines at the BARC Training Schools**

Mechanical	21	Computer Sc / Computer Engg / Computer Sc & Engg	26	Fast Reactor Technology-E\$\$	31	Radiological Safety & Environmental Science(RSES) ##	44
Chemical	22	Instrumentation** #	27	Quality Assurance & Quality Control\$\$\$ Physics†	32	Geology	45
Metallurgy §	23	Civil	28		41		
Electrical #	24	Nuclear Engg\$\$	29	Chemistry‡	42		
Electronics *#	25	Fast Reactor Technology-M§	30	Biosciences	43		

\*Related degree disciplines viz. 'Electrical', 'Electronics & Communication', 'Electronics and Controls' are also eligible to apply under Electronics. However, such candidates must qualify on the basis of a valid GATE score or Online Test in Electronics (25). \*\* Related degree disciplines viz. 'Instrumentation & Controls' are also eligible to apply under Instrumentation. However such candidates must qualify on the basis of valid GATE score or Online Test in Instrumentation. #Candidates with degree discipline 'Electrical & Electronics' can apply under either of the disciplines Electrical (24) or Electronics (25) and candidates with degree discipline 'Electronics & Instrumentation' can apply under either of the disciplines Instrumentation (27) or Electronics (25). However, such candidates must qualify on the basis of a valid GATE score or Online Test in the discipline in which they wish to be considered. †The candidates belonging to 'Physics' discipline selected for the BARC Training School at Mumbai will be allotted either Physics or RSES as their Training Schemes and those selected for the BARC Training school at IGCAR will be allotted Reactor Physics as their Training Scheme. ‡The candidates belonging to 'Chemistry' discipline selected for the BARC Training School at Mumbai will be allotted either Chemistry or RSES as their Training Schemes and those selected for the Training school at IGCAR will pursue Nuclear Fuel Cycle Chemistry in the Training School. ##Radiological Safety & Environmental Science (RSES) is not a separate discipline but an additional Training Scheme option for candidates in 'Physics', 'Chemistry' & 'Nuclear Engineering'. §Candidates with B.E. / B.Tech. / B.Sc.(Engg.) / 5-year Integrated M.Tech. in 'Metallurgy & Materials Engineering', 'Metallurgy & Materials Science', 'Metallurgical Engineering', 'Metallurgical & Materials Engineering', 'Metallurgical Engineering & Materials Science' and 'Materials Science & Engineering' are eligible to apply under Metallurgy. §§Candidates with B.E. / B.Tech. / B.Sc.(Engg.) / 5-year Integrated M.Tech. in 'Nuclear Engineering' / 'Nuclear Technology' / 'Nuclear Science & Technology' would be considered for RSES Training Scheme at the BARC Training School, Mumbai and for 'Mechanical' and 'Chemical' Training Schemes at the BARC Training Schools in Mumbai, Kalpakkam and NFC- Hyderabad. \$FRT-M is not a separate discipline but an additional Training Scheme option for candidates in Mechanical(21) and Chemical Engg(22). \$\$ FRT-E is not a separate discipline but an additional Training Scheme option for candidates in Electrical(24) and Electronics Engg(25). \$\$\$QA&QC is not a separate discipline but an additional Training Scheme option for candidates in Mechanical(21) and Metallurgy(23).

**Table-2: Training Schools, Eligible Disciplines, Orientation of Training**

Training School	Disciplines (refer Table-1)	Orientation of Training
BARC, Mumbai (Since 1957)	21 to 28 & 41 to 44	• Engineering Design, Development, Operation and Maintenance of Nuclear Reactors • Research in frontier areas of Basic and Engineering Sciences
IGCAR, Kalpakkam (Since 2006)	21, 22, 25, 30, 31, 41 & 42	• R&D and Engineering related to Fast Breeder Reactors • Research in frontier areas of Basic and Engineering Sciences
RRCAT, Indore (Since 2000)	24, 25 & 41	• R&D and Engineering related to Lasers, Accelerators, Plasma Physics, Cryogenics and Superconductivity
NFC-HWB, Hyderabad (Since 2001)	21, 22, 24, 25, & 32	• Operation & Maintenance and Engineering related to Nuclear Fuel Facilities and production plants for production of Heavy Water to support the Nuclear Power Program
AMD, Hyderabad (Since 2010)	45	• Exploration Techniques for Uranium and other Atomic Minerals and related R&D activities

**Table-3: M.Tech./M.Chem.Engg.Specializations and Admissible Pre-M.Tech./M.Chem.Engg. Degree-Disciplines for DGFS**

Relevant M.Tech./M.Chem. Engg. Program or Name of Dept/ Centre at the M.Tech./ M.Chem.Engg. Institute	Pre-M.Tech./M.Chem. Engg. Degree (Disciplines)	Institutes**
Mechanical Engineering	B.E./B.Tech./B.Sc. (Engg) (Mechanical)	All except ICT
Cryogenic	B.E./B.Tech./B.Sc. (Engg) (Mechanical)	Kh
Chemical Engineering	B.E./B.Tech./B.Sc. (Engg) (Chemical)	All except Rkl
Applied Mechanics	B.E./B.Tech./B.Sc. (Engg) (Civil/ Mechanical)	M
Civil Engineering	B.E./B.Tech./B.Sc. (Engg) (Civil)	All exceptRkl, ICT
Earthquake Engineering	B.E./B.Tech./B.Sc. (Engg) (Civil)	K, R
Nuclear Hydrology	B.E./B.Tech./B.Sc. (Engg) (Civil/ Chemical)	R
Metallurgical Engineering, Materials Science, Materials Engineering	B.E./B.Tech./B.Sc. (Engg) (Metallurgy/ Chemical)	All except G, ICT
Electrical Engineering	B.E./B.Tech./B.Sc. (Engg) (Electrical/ Electronics)	All exceptG, ICT
Reliability Engineering, Systems & Control Engineering, Energy Systems	B.E./B.Tech./B.Sc. (Engg) (Mechanical/ Electrical/ Chemical)	B, D, Kh, R

<b>Relevant M.Tech./M.Chem.Engg. Program or Name of Dept/ Centre at the M.Tech./ M.Chem. Engg. Institute</b>	<b>Pre-M.Tech./M.Chem. Engg. Degree (Disciplines)</b>	<b>Institutes **</b>
Power/ Communication/ Control Engg, Integrated Electronics & Circuits	B.E./B.Tech./B.Sc. (Engg) (Electrical/ Electronics)	D, G, R
Instrumentation	B.E./B.Tech./B.Sc. (Engg) (Electrical/ Electronics/ Instrumentation)	Kh,M,R
Computer Science, Engineering & Technology	B.E./B.Tech./B.Sc. (Engg) (Computer/ Electrical/ Electronics)	All except Rkl, Var,ICT
Applied Optics, Lasers & Optoelectronics	B.E./B.Tech./B.Sc. (Engg) (Electronics) M.Sc. (Physics / Applied Physics)	D
Nuclear Engineering & Technology	B.E./B.Tech./BSc (Engg) (Mechanical/ Chemical/ Electrical/ Electronics)	K
Solid State Materials/ Electronic Materials	B.E./B.Tech./B.Sc. (Engg) (Electrical/ Electronics) M.Sc. (Phy/ AppPhy)	D, R
Electronics Engg, Electronics and Communication Engg	B.E./B.Tech./B.Sc. (Engg) (Electrical/Electronics)	Rkl& Var

**\*\* Institutes where specified M.Tech./ M.Chem.Engg. courses are offered under this scheme: B = IIT Bombay; D = IIT Delhi; G=IIT Guwahati; K = IIT Kanpur; Kh = IIT**

Kharagpur; M = IIT Madras; R = IIT Roorkee; Rkl = NIT Rourkela; Var = IIT-(BHU)-Varanasi; ICT = Institute of Chemical Technology, ICT, Mumbai. Number of DGFS Fellows selected in each approved M.Tech. /M.Chem.Engg. specialization at the Institutes under the DGFS scheme will depend upon the requirements of DAE.

**Important Dates ( All Dates are Tentative and Applicants must visit Online Application Portal regularly for updates )**

Commencement of Online Application Process for OCES/DGFS-2021	12 <sup>th</sup> July, 2021
Last date for Registration for Online Application	7 <sup>th</sup> August, 2021
Last date for Submission of Online Application	9 <sup>th</sup> August, 2021
Online Examination Slot Booking	20 <sup>th</sup> August, 2021 to 25 <sup>th</sup> August, 2021
Online Examination	5 <sup>th</sup> September, 2021 to 12 <sup>th</sup> September, 2021
Display of List of candidates short-listed for Interview on Online Application Portal	21 <sup>st</sup> September, 2021
Availability based option on Online Application Portal to select Interview Slot for qualified candidates	24 <sup>th</sup> September - 28 <sup>th</sup> September, 2021
Selection Interviews	4 <sup>th</sup> October, 2021- 29 <sup>th</sup> October, 2021
Display of List of Candidates finally selected for OCES-2021 on Online Application Portal	Second week of November, 2021
Last Date for Selected OCES-2021 Candidates desirous of DGFS to give details of M.Tech I M.Chem.Engg. admission in a DGFS institute	3 <sup>rd</sup> Week of November, 2021
Declaration of List of Applicants Selected for DGFS-2021 on Online Application Portal	30 <sup>th</sup> November, 2021

**Persons desiring to apply for the OCES / DGFS – 2021 programs may visit the website <http://www.barconlineexam.in> after July 12, 2021 and follow the instructions therein.**



**Recruitment of Scientific Officers in the  
Department of Atomic Energy  
(Group-A Post of Government of India)  
through the Bhabha Atomic Research Centre  
Training Schools**



**Information Brochure for Candidates from  
Engineering & Science Disciplines: OCES/DGFS**

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# 1. Training Schemes and Employment Description

BARC Training Schools provide two Training Schemes to deserving candidates ambitious of pursuing a rewarding career in **Nuclear Science, Engineering and Technology** and

- a. who would relish challenges in **frontier areas of Science & Technology**,
- b. who would like to be part of an expanding program of **Nuclear Power / Research Reactors, Accelerators and Nuclear Fuel Cycle Technologies**, and
- c. who would enjoy pursuing innovative research in frontier areas of **Engineering, Physics, Chemistry, Bioscience and Geology**.

They are respectively called **Orientation Course for Engineering Graduates and Science Postgraduates (OCES)** and **DAE Graduate Fellowship Scheme for Engineering Graduates and Physics Postgraduates (DGFS)**.

**Successful completion of the Training Schemes guarantees employment as Scientific Officer "C" in one of the DAE units or Atomic Energy Regulatory Board with attractive career progression opportunities up to the highest echelons.**

**DAE strives to have a workforce which reflects gender balance and women candidates are encouraged to apply.**

**A. One-year Orientation Course for Engineering Graduates and Science Postgraduates (OCES)** will be conducted at the **five BARC Training Schools** situated at **Mumbai, Kalpakkam, Indore and Hyderabad**. Tables-1a & 1b list Eligible Disciplines for the OCES program. Table-2 lists the Eligible Disciplines and orientation of the Training Program at each of the Training Schools. A Trainee Scientific Officer (TSO), who scores a minimum of 50% aggregate marks on completion of the Training Program, is declared to have passed the course successfully. Successful TSOs will be posted as Scientific Officers in one of the following DAE units:

- a. **Bhabha Atomic Research Centre (BARC), Mumbai\***
- b. **Indira Gandhi Centre for Atomic Research (IGCAR), Kalpakkam**
- c. **Raja Ramanna Centre for Advanced Technology (RRCAT), Indore**
- d. **Variable Energy Cyclotron Centre (VECC), Kolkata**
- e. **Heavy Water Board (HWB), Mumbai\***
- f. **Nuclear Fuel Complex (NFC), Hyderabad\***

- g. Board of Radiation and Isotope Technology (BRIT), Mumbai\*
- h. Nuclear Power Corporation of India Ltd (NPCIL), Mumbai\*
- i. Bharatiya Nabhikiya Vidyut Nigam Ltd (BHAVINI), Kalpakkam\*
- j. Uranium Corporation of India Ltd (UCIL), Jaduguda\*
- k. Atomic Minerals Directorate for Exploration & Research (AMD), Hyderabad\*
- l. Directorate of Construction, Services & Estate Management (DCSEM),  
Mumbai\*.

\*These units have their Head Office at the indicated locations. Placement can be at the Head Office or at other facilities of these units located in different parts of India.

**Allocation of a successful OCES TSO to a DAE unit is carried out based on the needs of DAE's programs and the TSO's performance in the OCES program. DAE reserves the right to place TSOs in any of its other units and the Atomic Energy Regulatory Board (AERB) also.**

**Appointment in DAE units shall be as a "Group A" Gazetted Officer of the Government of India except in BHAVINI, NPCIL and UCIL which are governed by the service rules of Corporations.**

Trainee Scientific Officers who successfully complete the Training Program and whose performance meets a minimum eligibility criterion are allowed to enroll for **M.Tech. / M.Phil.** in **Homi Bhabha National Institute (HBNI)**, a Deemed to be University. Those not desirous of pursuing M.Tech. / M.Phil. are entitled to a **Post-Graduate Diploma of HBNI** provided their academic performance is above a specified threshold.

**B. Two-year DAE Graduate Fellowship Scheme for Engineering Graduates and Physics Postgraduates for the academic session beginning in July/August (DGFS).** Under this scheme, **Engineering Graduates and Physics Postgraduates** who have **excelled in the Selection Interviews** for the BARC Training Schools' programs and who **have also independently secured admission for M. Tech. / M. Chem. Engg. in select Institutes and specializations** as listed in **Table-3**, are paid stipend and tuition fee to pursue a **M. Tech. / M. Chem. Engg. degree** while retaining their employment in DAE.

After successful completion of one-year course work at the Institute, DGFS Fellows undertake project work, which is assigned by DAE and supervised jointly by a DAE and an Institute guide.

On successful completion of M. Tech. / M. Chem. Engg. DGFS Fellows are posted as Scientific Officers in DAE. Appointment in DAE units shall be as a

**Group "A" Gazetted Officer of the Government of India.**

On joining, they are required to first undertake a four-month Orientation Course for DGFS Fellows (OCDF) at the BARC Training School, Mumbai.

The DGFS fellows are enrolled and posted in one of the following units of DAE:

- a) BARC, Mumbai\*\*
- b) IGCAR, Kalpakkam

\*\*Placement can be at any of the BARC facilities located in different parts of India.

Allocation of a DGFS Fellow to a DAE unit is done at the beginning of the M. Tech. / M. Chem. Engg. program based on the needs of DAE's programs and their Selection Interview merit.



**C. Stipend and Allowances during Training:** OCES TSOs and DGFS Fellows are paid a stipend of ₹ 55,000 per month during the period of their Training and a one- time book allowance of ₹ 18,000. DGFS Fellows are reimbursed the tuition fee for M.Tech. / M.Chem.Engg. and are additionally paid a **one-time Contingency Grant of ₹ 25,000** to meet M.Tech. / M.Chem.Engg. project related expenses.

Boarding and Lodging in DAE Hostel is mandatory for OCES TSOs during the Training period. **Boarding and lodging in DGFS Institute hostel is mandatory for DGFS Fellows during M. Tech. / M. Chem. Engg. program.**

**Selected candidates** are required to execute an agreement and a **Personal Indemnity Bond** to serve DAE for at least three years after completion of Training. Indemnity Bond is for ₹ 6,78,000 for OCES TSOs and ₹ 13,58,000 for DGFS Fellows<sup>\*\*\*</sup>. **No third party surety is required.**

<sup>\*\*\*</sup>The Bond amount for DGFS Fellows pursuing M. Tech. / M. Chem. Engg. at certain DGFS Institutes may be different, depending on the tuition fee at the concerned Institute.

## 2. Grade and Pay Scale

Appointment in all the units shall be as a Scientific Officer "C" (SO/C) **in the Level 10**  
- ₹ 56,100 of the 7<sup>th</sup> Central Pay Commission Pay Matrix.

Appointment will be at the beginning of the pay scale with OCES TSOs getting **two or three increments** depending on their performance during the OCES program and the DGFS Fellows# getting **three or four increments** depending on their performance in M. Tech. / M. Chem. Engg. and four-month Orientation Course for DGFS Fellows (OCDF).

#DGFS Fellows whose performance in the M.Tech. / M.Chem.Engg. and OCDF programs is below a specified threshold will get zero increments.

**Monthly emoluments (with three increments) at the time of joining** including Dearness Allowance, House Rent Allowance and Transport Allowance at the present Mumbai rate, will be approximately ₹ 95,000.

In addition, other Allowances such as **Leave Travel Concession by air**, every year up to first eight years (subject to conditions) and once in two years thereafter, **Children's Education Allowance** and **Professional Update Allowance** are also payable.

A comprehensive **Contributory Health Service Scheme** or equivalent for employees and their dependent family members is also available at all DAE Units.

### 3. Selection Process

Selection to OCES/DGFS is a two-step process: Screening to short-list candidates followed by Selection Interviews of the short-listed candidates.

There is a separate selection process for each of the disciplines listed in Tables-1a and 1b except for FRT-M (code 30), FRT-E (code 31), QA&QC (code 32) and RSES (code 44).

- FRT-M (code 30) is an additional Training Scheme option available to applicants belonging to Mechanical Engineering or Chemical Engineering (codes 21 and 22).
- FRT-E (code 31) is an additional Training Scheme option available to applicants belonging to Electrical Engineering or Electronics Engineering (codes 24 and 25).
- QA&QC (code 32) is an additional Training Scheme option available to applicants belonging to Mechanical Engineering or Metallurgical Engineering (codes 21 and 23).
- RSES (code 44) is an additional Training Scheme option to applicants belonging to Nuclear Engineering, Physics and Chemistry disciplines (codes 29, 41 and 42). There is no separate Training Scheme called 'Nuclear Engineering (code 29)' and selected candidates belonging to Nuclear Engineering (code 29) will be allotted RSES (code 44) or Mechanical (code 21) or Chemical (Code 22) as their Training Schemes.

**A. Screening for Selection Interviews** is based on two alternative methods:

**1) On the basis of Online Examination:**

- i. Online Examination will be conducted in each of the nine Engineering disciplines (codes 21 - 29) and four Science disciplines (Codes 41 – 43 and 45) in more than forty cities spread across India.
- ii. Travel Allowance is not paid for appearing in it.
- iii. Candidates who register for the Online Examination will be permitted to book an examination slot and examination centre based on availability. The allotment will be done on first come first served basis.
- iv. All candidates appearing for the BARC Online Examination will be awarded a BARC Online Examination Score. Shortlisting of these candidates for Selection Interview will be based on this Online Examination Score.

## 2. On the basis of GATE score:

Candidates will be screened in for Selection Interview on the basis of a valid **GATE score in the applicable GATE subject. Applicants with a degree in “Nuclear Engineering” will be screened in only on the basis of Online Examination.**

Candidates may note the following:

1. At the time of application, candidates can choose **any one or both** of the above screening options. As the cutoff GATE scores for screening in to Selection Interviews will be finalized only after the conclusion of the Online Examination, candidates are advised to maximize their chance of being screened in to the Selection Interview by **availing both the Screening Channels (GATE score as well as Online Examination)** detailed above.
2. Candidates who opt for screening through **Online Examination** will be permitted to book an examination slot at a centre of their choice, subject to availability. Alerts by **email as well as SMS** will be sent to all candidates who have opted for the Online Examination on their registered email addresses and mobile numbers as well as announced on this website, after allotment of examination slots. Examination slots will be allocated on first come, first served basis, subject to availability. **Candidates are advised to visit this website regularly for updates regarding this.**
3. The candidates who have opted for screening **only on the basis of a GATE Score will not be allotted an examination slot** for the Online Examination.
4. **Students graduated/graduating with a Masters Degree from University of Mumbai – Department of Atomic Energy Centre for Excellence in Basic Sciences (UM-DAE CBS) and National Institute of Science Education and Research (NISER), Bhubaneswar, and whose Cumulative Grade Performance Average (CGPA) is greater than or equal to 7.5 on a scale of 10 will directly be screened into the Selection Interview stage, provided they meet all other eligibility requirements of the OCES/DGFS program. It is to be noted that this option of being screened in based on CGPA can be exercised only once. Such candidates should first submit their application for the OCES/DGFS program on the Online Application Portal and subsequently forward their details through the Directors of their institutes.**

**Other Opportunities:**

Candidates applying for OCES/DGFS may be considered for direct recruitment in Electronics Corporation of India Ltd. (ECIL) and Institute for Plasma Research (IPR). Such candidates will be governed by stipendiary norms of ECIL and IPR and terms and service conditions of ECIL and IPR respectively on absorption. A merit list created out of the Selection Interview Marks may also be used to offer admission to M.Sc. (Engg.)/Ph.D. or Diploma in Radiological Physics programs of BARC under the aegis of HBNI. Students admitted to the M.Sc. (Engg.)/Ph.D. program will be paid a Fellowship/Stipend for the duration of their academic program. No permanent employment with DAE is assured to such Research Fellows.

## **B. Selection Interviews:**

**Selection Interviews** of short-listed candidates will be conducted in Mumbai (in all disciplines except Geology) and Hyderabad (in Geology). Outstation applicants will be paid **two-way normal AC-III tier train fare to attend Selection Interview**, from their registered residential address, by shortest route or actual fare whichever is less.

Short-listed candidates will be able to choose an Interview slot based on **availability**. Alerts by email as well as SMS will be sent to all candidates who have been short-listed for Selection Interview on their registered email addresses and mobile numbers as well as announced on this website, prior to commencement of the Interview slot booking process. **Candidates are advised to visit this website regularly for updates regarding this.**

**Final Selection for the OCES/DGFS programs will be based solely on performance in Selection Interview, subject to medical fitness.** A list of provisionally (subject to medical fitness) selected candidates will be displayed on this website. The selected candidates will also be informed about their Selection by email and SMS.

**Candidates selected for OCES who have obtained admission for applicable M. Tech. / M. Chem. Engg. programs in DGFS Institutes and who wish to be considered for DGFS, must provide details of their M. Tech. / M. Chem. Engg. admission.**

## 4. Eligibility Criteria

### **A. Qualifying Degrees and Other Academic Requirements for OCES/DGFS**

#### **a) For Engineering Disciplines (codes ME (21), CH (22), MT(23), EE(24), EC(25), CS(26), IN(27), CE(28), NE(29) as per Table-1a ):**

- i.** B.E. / B.Tech. / B.Sc. (Engineering) / 5-year Integrated M.Tech. with a minimum of 60%\* aggregate marks in one of the above mentioned eight engineering disciplines mentioned in **Table-1a**.
- ii.** It is to be noted that there is no Training discipline called "Nuclear Engineering" and applicants with a degree in "Nuclear Engineering" will be allotted RSES at the BARC Training School, Mumbai or Mechanical (ME - code 21) or Chemical (CH – Code 22) at the BARC Training Schools at Mumbai, Kalpakkam or NFC-Hyderabad, as their Training Scheme.
- iii.** Applicants opting to be considered on the basis of a GATE Score must have a valid **GATE-Score in the same engineering discipline as the qualifying degree discipline. The applicable GATE subjects are listed in Table-1a.**
- iv.** Those having qualifying degree in branches like Aerospace, Automobile, Automotive, Aeronautical Engineering, Industrial Production, Reliability, Ceramics, Architecture, Geology, Mining, Bio-Medical Electronics/ Instruments, Communication, Information Technology, Master of Computer Applications, Dyes & Dye Intermediates, Electrochemical, Energy Systems, Oils & Fats, Paints & Varnishes, Petrochemicals, Plastics, Paper, Sugar Technology, Textiles, Mechatronics, Power Engineering, Power Plant Engineering, Control Engineering, Software Engineering, Electronics and Computer Engineering etc. are **NOT** eligible.

#### **b) For Fast Reactor Technology-M (FRT-M, code 30):**

B.E. / B.Tech. / B.Sc.(Engineering) / 5-year Integrated M.Tech. in Mechanical Engineering or Chemical Engineering with minimum of 60%\* aggregate marks in qualifying degree. FRT-M is an additional Training Scheme option available to applicants belonging to Mechanical Engineering or Chemical Engineering (codes 21 and 22)and hence there will not be separate screening test or Selection interview.

#### **c) For Fast Reactor Technology-E (FRT-E, code 31):**

B.E. / B.Tech. / B.Sc.(Engineering) / 5-year Integrated M.Tech.in Electrical Engg. / Electronics Engg. / Electronics & Communication Engg. /

Electronics & Controls Engg. / Electrical & Electronics Engg. / Electronics & Instrumentation Engg. with minimum of 60%\* aggregate marks in qualifying degree. FRT-E is an additional Training Scheme option available to applicants belonging to Electrical Engineering or Electronics Engineering (codes 24 and 25) and hence there will not be separate screening test or Selection interview.

**d) For Quality Assurance & Quality Control (QA&QC, code 32):**

B.E. / B.Tech. / B.Sc.(Engineering) / 5-year Integrated M.Tech. in Mechanical Engineering or Metallurgy / Metallurgy & Materials Engineering / Metallurgy & Materials Science / Metallurgical Engineering / Metallurgical & Materials Engineering / Metallurgical Engineering & Materials Science / Materials Science & Engineering with minimum of 60%\* aggregate marks in qualifying degree. QA&QC is an additional Training Scheme option available to applicants belonging to Mechanical Engineering or Metallurgical Engineering (codes 21 and 23) and hence there will not be separate screening test or Selection interview.

**e) For Physics Discipline (code PH (41)) (Table-1b):**

- i. M.Sc. in Physics / Applied Physics with Physics and Mathematics at B.Sc. or at subsidiary and/or ancillary level in case of 5-year integrated M.Sc. or B.E./ B.Tech. in Engineering Physics with a minimum of 60%\* aggregate marks in the qualifying degree.
- ii. M. Sc. candidates (other than those applying with a 5-year integrated M.Sc. degree) must additionally have a minimum of 60%\* aggregate marks in B.Sc.
- iii. Physics postgraduate applicants opting to be considered on the basis of a GATE Score should have a valid **GATE**-Score in "Physics".
- iv. Applicants having B.E./ B.Tech. in "Engineering Physics" as qualifying degree can apply on the basis of a valid **GATE** Score either in "Physics" or in "Engineering Sciences".

**f) For Chemistry Discipline (code CY(42)) (Table-1b):**

- i. M.Sc. in Chemistry with Physics up to B.Sc. or at subsidiary and / or ancillary level in case of 5-year integrated M.Sc. and Mathematics at Std. XII or at B.Sc. or at subsidiary and / or ancillary level in case of 5-year integrated M.Sc., with a minimum of 60%\* aggregate marks in M.Sc.
- ii. All candidates (other than those applying with a 5-year integrated M.Sc. degree)

must additionally have a minimum of 60%\* aggregate marks in B.Sc.

- iii. Applicants opting to be considered on the basis of a GATE Score should have a valid GATE-Score in "Chemistry".

**g) For Biosciences Discipline (code BS(43)) (Table-1b):**

- i. M.Sc. in Agriculture, Biochemistry, Microbiology, Molecular Biology, Biotechnology, Genetics, Botany, Zoology, Plant Science, Plant Breeding, Plant Pathology, Entomology, Food Technology, Animal Science, Life Sciences, Biomedical Sciences and Biosciences with a minimum of 60%\* aggregate marks in M.Sc. as well as in B.Sc. (except for 5-year integrated M.Sc.); or B.E. / B.Tech. / B.Sc. (Tech) only in Food Technology with minimum of 60%\* aggregate marks.
- ii. M.Sc. applicants should have studied one out of Physics or Chemistry or Biochemistry or Agriculture Chemistry as a subject at the B.Sc. stage or at subsidiary and / or ancillary level in case of 5- year integrated M.Sc.
- iii. Applicants opting to be considered on the basis of a GATE Score should have a valid **GATE**-Score in "Life Sciences" or in "Biotechnology".
- IV. **Those having M.Sc. with specialization in subjects like Fisheries, Horticulture, Forestry, Agronomy, Animal Husbandry, Marine Biology, Bioanalytical Sciences, Bioinformatics and Home Science etc and B.E / B.Tech./ M.Tech. in Biotechnology/ Genetic Engineering/ Biomedical Engineering are Not eligible.**

**h) For Radiological Safety & Environmental Science (code RSES(44)):**

- i. B.E. / B.Tech. / B.Sc.(Engg.) / 5-year Integrated M.Tech. in Nuclear Engineering / Nuclear Technology / Nuclear Science & Technology with minimum of 60%\* aggregate marks or M.Sc. in Physics /Applied Physics or Chemistry with a minimum of 60%\* aggregate marks with Physics and Chemistry up to B.Sc. or at subsidiary and/or ancillary level in case of 5-year integrated M.Sc.
- ii. Eligible M.Sc. candidates must have passed in Mathematics at Std. XII or at B.Sc. or at subsidiary and / or ancillary level in case of 5-year integrated M.Sc.
- iii. All science postgraduate candidates (other than those applying with a five-year integrated M.Sc. degree) must additionally have a minimum of 60%\* aggregate marks in B.Sc. RSES is an additional Training Scheme



option to applicants belonging to Nuclear Engineering, Physics and Chemistry disciplines (codes 29, 41 and 42) and hence there will not be separate screening test or Selection interview

**i) For Geology Discipline (Code GE(45)) (Table-1b):**

- i. M.Sc or equivalent M.Tech in Geology / Applied Geology / Applied Geochemistry with Geology at B. Sc. or at subsidiary and / or ancillary level in case of 5-year integrated M.Sc., or 5-year integrated M.Tech. in Geological Technology.
- ii. Eligible candidates must have two subjects out of Mathematics, Physics and Chemistry up to B.Sc. or at subsidiary and/or ancillary level in case of 5-year integrated M.Sc./5-year integrated M.Tech., with a minimum of 60%\* aggregate marks in M.Sc./M.Tech.
- iii. All eligible candidates (other than those applying with a 5-year integrated M.Sc. / M.Tech. degree) must have a minimum of 60%\* aggregate marks in B. Sc. also.
- iv. Additionally, eligible candidates must have passed Mathematics in Std. XII.
- v. All applicants opting to be considered on the basis of a GATE Score should have a valid **GATE**-Score in "Geology and Geophysics".

**j) Those having M.Sc. (by research) or Ph.D. are not eligible.**

**\*A minimum of 60% aggregate marks means the marks as per the ordinances of the respective university.**

**B. Admission to DGFS:**

- i. Candidates having a qualifying degree in the Engineering disciplines (ME(21), CH(22), MT(23), EE(24), EC(25), CS(26), IN(27) & CE(28)) or in Physics (PH(41)) and who meet the corresponding eligibility criteria listed above are eligible to apply for DGFS provided they are selected for **OCES** and additionally secure admission for M.Tech./ M.Chem. Engg. starting in the current academic year in select Institutes and in specializations listed in Table-3.
- ii. Confirmation of M.Tech. / M.Chem.Engg. admission should be communicated by the specified date on the website.
- iii. **Securing admission in one of the valid M. Tech. specializations at one of the DGFS Institutes along with Selection for OCES, does not guarantee the award of a DGFS Fellowship as DGFS is offered as per the needs of DAE's programs and only to the most meritorious candidates as per Selection Interview performance.**

**C. Age Limit (Age as on August 1):**

- i. **General Category - 26 years,**
- ii. **OBC - 29 years,**
- iii. **SC/ST – 31 years,**
- iv. **Dependents of those who died in the riots of 1984 (Dep1984) - 31 years,**
- v. **Persons domiciled in Kashmir Division of Jammu & Kashmir State from 01/01/1980 to 31/12/1989 (Dom Kashmir) – 31 years**

**Physically Challenged persons of all categories are eligible for age relaxation of 10 years.**

**D. Nationality:** Applicant must be a citizen of India.

**E. Applicants working in Central or State Governments or their Units / PSUs / Aided Institutes should produce a No Objection Certificate (NOC) from their organization at the time of Selection Interview, failing which they may not be interviewed.**

**F. Application Fee:**

- i. A non-refundable Application Fee of ₹ 500 is chargeable from the male applicants belonging to General and OBC categories.
- ii. **Woman candidates, candidates belonging to SC/ST, Dependents of**

**Defence Personnel Killed in Action (DODPKIA) and Physically Challenged candidates are exempted from payment of Application Fee.**

**Candidates awaiting final results, may also apply.**

**If selected, candidates who are eligible in all other respects but are awaiting final results will be allowed to commence course work. However, retention of these candidates in the OCES or DGFS programs is subject to the mark-sheet of their final result, which meets the eligibility requirements of the OCES/ DGFS program, being submitted by the given date in case of OCES TSOs and as per the requirement of the concerned DGFS Institutes in the case of DGFS Fellows.**

## 5. How to Apply

### ONLY ONLINE APPLICATIONS WILL BE ACCEPTED.

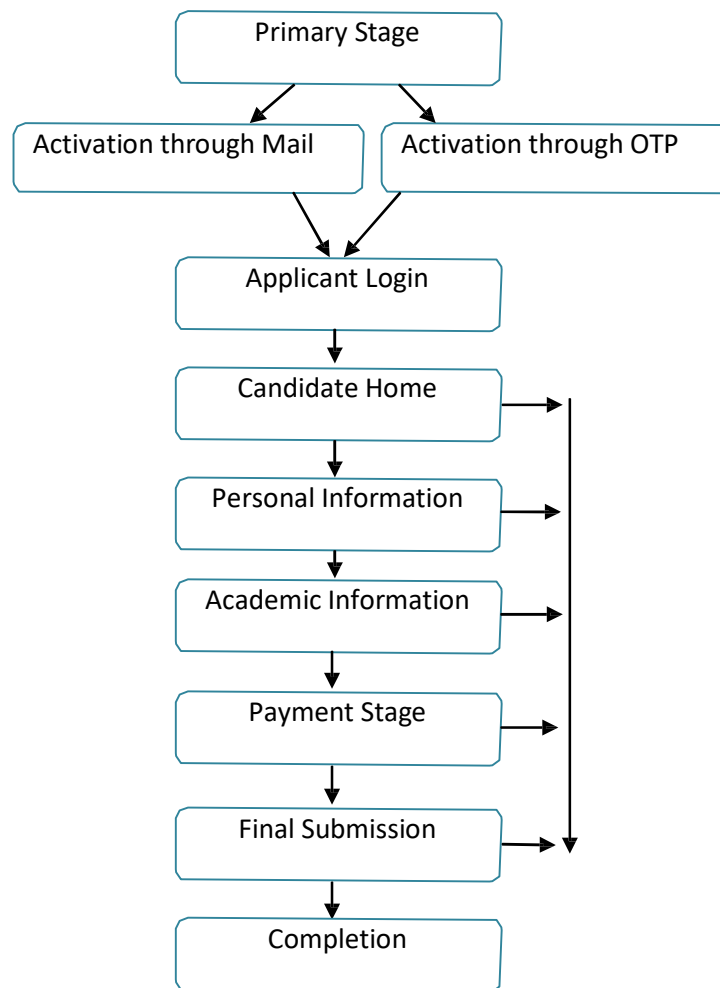
- Candidates have to fill up the Online Application form provided on this website.
- Candidates need to register through “**Apply Online**” link by providing essential information like name, mother’s name, date of birth, e-mail id and a preferred login id. ***It may be noted that the details provided at this stage cannot be modified later on, and hence the candidates are advised to be careful in entering the details.***
- Upon successful registration, the candidates can activate their account either through the OTP sent to their registered mobile number or through the Activation link sent to the candidates’ registered email id.
- Once the candidate’s account is activated, he/she can subsequently log in multiple times through “**Candidate's Login**” link to fill in the Online Application form.
- While filling the form, the candidates are required to upload their recent passport sized photograph (4.5x3.5cm) in JPG format (of size not more than 50 kb) and a scanned copy of their signature (2x4.5cm, in JPG format with size not exceeding 20 kb).
- After filling in all the required details, the candidates who are required to pay the Application Fee (₹ 500 plus applicable bank charges) may make Online payment using net banking / debit card / credit card. On clicking on the "Make Payment" button in the payment page, the candidate is taken to the SBI Payment Gateway through which they can pay the application fee using any of the payment modes listed above. If the payment is successful, the candidates can proceed to final submission stage and complete their application. **The candidates must make the payment of Application Fee only once and no requests for refund of Application Fee will be entertained from any candidate.**
- **Finally, the candidates need to submit the filled form. Please note that no modifications / alterations would be permitted in the application form after final submission. Hence the candidates are advised to verify the correctness and adequacy of the information filled by them before the final submission. It is to be noted that only applications where 'Final Submission' process has been completed before the last date will be considered valid applications.**

Candidates have the following options available:

- i. "Final Submission"- On clicking this button, the details of the candidate are submitted and a Registration Number is generated for the candidate.
  - ii. If the candidate wishes to do some modification before final submission, he / she is advised to click the "Home" link provided on the top of the page. **However, it must be noted that the candidate must click the "Final Submission" button after the modification.**
- A unique Registration Number will be generated for every candidate **who has completed the Final Submission process**, which must be used for all future correspondence.
  - The candidates who wish to apply for screening on the basis of GATE Score must upload their GATE Score during the Application Process. **Candidates must enter their GATE score and GATE marks carefully.**

**Note: Candidates need not send any documents such as proof of age, proof of category, proof of application fee payment etc. or hard copy application.**

## **BARC – OCES/DGFS Flow chart & Instructions for Registration**



**Note: From Candidate Home, candidate can proceed to each successive stage of registration. After completion of each stage, he can also switch over and edit the previous stages, till the final submission is made.**

**Once Final Submission stage is completed, no further modification is possible.**

## Process & Instructions:

**Application Procedure: 7 Simple Steps (Primary Stage, Activation, Personal Information, Academic Information, Screening information, Payment Stage, Final Submission) to be followed to apply online**

<b>Step 1:</b>	<b>Primary stage:</b> In this first stage of registration, the candidates need to choose the Applied Discipline (i.e. Examination Discipline) and Qualifying Degree. The candidate also must enter other primary details like: Name, Mother's Name, DOB, Email ID, Mobile number <b>etc.</b> The candidate should create a Unique Login Id and Password (These credentials will be used to proceed to the next stage).
<b>Step 2:</b>	<b>Activation:</b> After completion of Primary stage, an OTP will be sent to candidate's registered mobile number and an Activation link will be sent to the registered E-mail id. Candidate can activate his application either by clicking that link or by using the "Activate through OTP" option in the portal. The candidate can proceed further after the activation of application.
<b>Step 3:</b>	<b>Personal Information:</b> After activation of application, the candidate can login through 'Application Login' with the registered User id and password. After logging in, the candidate should fill his Personal details like: Category, Address, etc and also do Photo & Signature Upload.
<b>Step 4:</b>	<b>Academic Information:</b> In this section, the candidate has to enter his Academic details like: 10 <sup>th</sup> , 12 <sup>th</sup> , relevant degree details and Additional Qualifications (if applicable).
<b>Step 5:</b>	<b>Screening Information:</b> After completion of Academic Information, the candidate can proceed to the next stage where he/she can choose the channel through which he/she would prefer to be considered, i.e. Online examination or GATE. A candidate can opt for both channels also.  In this stage, the candidate also can furnish his Examination centre choices. If the candidate has chosen GATE as the screening channel, he has to enter the GATE score and upload his Score card while applying.  <b>Note: If the candidate enters his GATE score wrongly, he may not be shortlisted based on GATE screening channel. In GATE score column, the candidate has to enter his score out of 1000.</b>
<b>Step 6:</b>	<b>Payment:</b> Candidates who are required to make an Application Fee Payment can pay the fees through the URL given in the Payment Stage. Payment can be done only through SBI Payment Gateway. There is no refund for candidates who make multiple payment. Candidates, who are exempted from paying fees can directly proceed to the Final Submission.
<b>Step 7:</b>	<b>Final Submission:</b> Once all the other stages are completed, the candidate should make the Final Submission to complete the Registration. The candidate should make sure that all the information entered in the previous stages are correct, as no modification in application can be made after making Final Submission. After this stage, a Registration Number will be generated for the candidate. Candidates will be able to view and print their application also.

## 6. Eligible Disciplines

( Table 1a)

CODE	Discipline to be Selected in Online Application Form under which candidate wishes to apply	Eligible Subject/Discipline in B.E./B.Tech./B.Sc. (Engg.)/5-Year Integrated M. Tech. as awarded by University / Institute	GATE Subject
ME(21)	Mechanical	Mechanical Engineering	Mechanical Engineering
CH(22)	Chemical	Chemical Engineering	Chemical Engineering
MT(23)	Metallurgical§	Metallurgy / Metallurgy & Materials Engineering / Metallurgy & Materials Science / Metallurgical Engineering / Metallurgical & Materials Engineering / Metallurgical Engineering & Materials Science / Materials Science & Engineering	Metallurgical Engineering
EE(24)	Electrical#	Electrical Engineering / Electrical & Electronics Engineering	Electrical Engineering
EC(25)	Electronics*#	Electrical Engg. / Electronics Engg. / Electronics & Communication Engg. / Electronics & Controls Engg. / Electrical & Electronics Engg. / Electronics & Instrumentation Engg./	Electronics & Communication Engg.
CS(26)	Computer Science	Computer Science / Computer Engineering/ Computer Science & Engineering	Computer Science & Information Technology
IN(27)	Instrumentation**#	Instrumentation Engg. / Electronics & Instrumentation Engg./ Instrumentation & Controls	Instrumentation Engineering
CE(28)	Civil	Civil Engineering	Civil Engineering
NE(29)	Nuclear Engineering§§	Nuclear Engineering / Nuclear Technology / Nuclear Science & Technology	NOT ELIGIBLE through GATE
FRT-M (30)	Fast Reactor Technology-M§	B.E./B.Tech./B.Sc. (Engg.)/5-year integrated M. Tech. in Mechanical or Chemical Engineering	Same as qualifying degree discipline i.e. Mechanical or Chemical Engineering
FRT-E(31)	Fast Reactor Technology-E§§	B.E./B.Tech./B.Sc. (Engg.)/5-year integrated M. Tech. in Electrical Engg. / Electronics Engg. / Electronics & Communication Engg. / Electronics & Controls Engg. / Electrical & Electronics Engg. / Electronics & Instrumentation Engg.	Same as qualifying degree discipline i.e. Electrical or Electronics Engineering
QA&QC(32)	Quality Assurance & Quality Control§§§	B.E./B.Tech./B.Sc. (Engg.)/5-year integrated M. Tech. in Mechanical or Metallurgy / Metallurgy & Materials Engineering / Metallurgy & Materials Science / Metallurgical Engineering / Metallurgical & Materials Engineering / Metallurgical Engineering & Materials Science / Materials Science & Engineering	Same as qualifying degree discipline i.e. Mechanical or Metallurgical Engineering



\*Related degree disciplines such as 'Electrical', 'Electronics & Communication', 'Electronics and Controls' are also eligible to apply under Electronics (**Code-25**). However, such candidates must qualify on the basis of a valid GATE score or Online Test in Electronics (**25**).

\*\* Related degree discipline viz. 'Instrumentation & Controls' are also eligible to apply under Instrumentation (**code-27**) . However such candidates must qualify on the basis of valid GATE score or Online Test in Instrumentation.

#Candidates with degree disciplines 'Electrical & Electronics' **can apply under either of the disciplines Electrical (24) or Electronics(25) and candidates with degree disciplines 'Electronics & Instrumentation' can apply under either of the disciplines Instrumentation (27) or Electronics(25)**. However, such candidates must qualify on the basis of a valid GATE score or Online Test in the discipline in which they wish to be considered.

§Candidates with B.E. / B.Tech. / B.Sc.(Engg.) / 5-year Integrated M.Tech. in 'Metallurgy & Materials Engineering', 'Metallurgy & Materials Science', 'Metallurgical Engineering', 'Metallurgical & Materials Engineering', 'Metallurgical Engineering & Materials Science' and 'Materials Science & Engineering' are eligible to apply under Metallurgy (code 23).

§§Candidates with B.E. / B.Tech. / B.Sc.(Engg.) / 5-year Integrated M.Tech in 'Nuclear Engineering' / 'Nuclear Technology' / 'Nuclear Science & Technology' would be considered for RSES (code 44) Training Scheme at the BARC Training School, Mumbai and for 'Mechanical (code 21)' and 'Chemical (code 22)' Training Schemes at the BARC Training Schools in Mumbai, Kalpakkam and NFC-Hyderabad.

\$ FRT-M (code 30) is not a separate discipline but an additional Training Scheme option for candidates in Mechanical (code 21) and Chemical (code 22)Engg.

\$\$ FRT-E (code 31) is not a separate discipline but an additional Training Scheme option for candidates in Electrical (**code-24**) and Electronics Engg (**code-25**).

\$\$\$QA&QC (code 32) is not a separate discipline but an additional Training Scheme option for candidates in Mechanical(**code-21**) and Metallurgy(**code-23**).

**( Table 1b )**

CODE	Discipline to be Selected in Online Application Form under which candidate wishes to apply	Eligible Degree Subject/Discipline as awarded by University / Institute	GATE Subject
PH(41)	Physics†	M. Sc. In Physics / Applied Physics	Physics
		B.E./B.Tech. In Engineering Physics	Physics / Engineering Sciences
CY(42))	Chemistry‡	M. Sc. In Chemistry	Chemistry
BS(43)	Bioscience	M.Sc. in Agriculture, Biochemistry, Microbiology, Molecular Biology, Biotechnology, Genetics, Botany, Zoology, Plant Science, Plant Breeding, Plant Pathology, Entomology, Food Technology, Animal Science, Life Sciences, Biomedical Sciences and	Life Sciences / Biotechnology
		B.E./B.Tech./B.Sc.(Tech.) in Food Technology	
RSES(44)	Radiological Safety & Environmental Science#	B.E./B.Tech./B.Sc. (Engg.)/5-year integrated M. Tech. in Nuclear Engg./ Nuclear Technology/ Nuclear Science & Technology	NOT ELIGIBLE through GATE
		M.Sc. In Physics / Applied Physics	Physics
		M.Sc. In Chemistry	Chemistry
GE(45)	Geology	M.Sc. or equivalent M.Tech. in Geology / Applied Geology / Applied Geochemistry or 5-year integrated M.Tech. in Geological Technology.	Geology & Geophysics

†The candidates belonging to 'Physics (Code 41)' discipline selected for the BARC Training School at Mumbai will be allotted either Physics (code 41) or RSES (Code 44) as their Training Schemes and those selected for the BARC Training school at IGCAR will be allotted Reactor Physics (**RP**) as their Training Scheme.

‡The candidates belonging to 'Chemistry (code 42)' discipline selected for the BARC Training School at Mumbai will be allotted either Chemistry (code 42) or RSES (code 44) as their Training Schemes and those selected for the Training school at IGCAR will pursue Nuclear Fuel Cycle Chemistry (**NFCC**) in the Training School.

##Radiological Safety & Environmental Science (RSES-code 44) is not a separate discipline but an additional Training Scheme option for candidates in 'Physics (Code 41)', 'Chemistry (code 42)' & 'Nuclear Engineering (code 29)'.

## 7. Training School and Training Scheme Options-

Training School	Degree Disciplines Eligible to Apply	Training Schemes	Orientation of Training
BARC, Mumbai (Since 1957)	ME, CH, MT, EE, EC, CS, IN, CE, NE, PH, CY, BS	ME, CH, MT, EE, EC, CS, IN, CE, PH, CY, BS, RSES	<ul style="list-style-type: none"> <li>• Engineering Design, Development, Operation and Maintenance of Nuclear Reactors</li> <li>• Research in frontier areas of Basic and Engineering Sciences</li> </ul>
IGCAR, Kalpakkam (Since 2006)	ME, CH, EE, EC, NE, PH, CY	ME, CH, EC, FRT- M, FRT-E, RP, NFCC	<ul style="list-style-type: none"> <li>• R&amp;D and Engineering related to Fast Breeder Reactors</li> <li>• Research in frontier areas of Basic and Engineering Sciences</li> </ul>
RRCAT, Indore (Since 2000)	EE, EC, PH	EE, EC, PH	<ul style="list-style-type: none"> <li>• R&amp;D and Engineering related to lasers, accelerators, plasma physics, cryogenics and superconductivity</li> </ul>
NFC-HWB, Hyderabad (Since 2001)	ME, CH, MT, EE, EC, NE	ME, CH, EE, EC, QA&QC	<ul style="list-style-type: none"> <li>• Operation &amp; Maintenance and Engineering related to Nuclear Fuel Facilities and production plants for production of Heavy Water to support the Nuclear Power Program</li> </ul>
AMD, Hyderabad (Since 2010)	GE	GE	<ul style="list-style-type: none"> <li>• Exploration Techniques for Uranium and other Atomic Minerals and related R&amp;D activities</li> </ul>

## 8. DGFS: Admissible Disciplines, M. Tech. / M. Chem.Engg. Specializations and DGFS Institutes (Table-3)

Relevant M.Tech./M.Chem.Engg. Program or Name of Dept/ Centre at the M.Tech./ M.Chem.Engg. Institute	Pre-M.Tech./M.Chem.Engg. Degree (Disciplines)	Institutes**
Mechanical Engineering	B.E./B.Tech./B.Sc. (Engg) (Mechanical)	All except ICT
Cryogenic	B.E./B.Tech./B.Sc. (Engg) (Mechanical)	Kh
Chemical Engineering	B.E./B.Tech./B.Sc. (Engg) (Chemical)	All except Rkl
Applied Mechanics	B.E./B.Tech./B.Sc. (Engg) (Civil/ Mechanical)	M
Civil Engineering	B.E./B.Tech./B.Sc. (Engg) (Civil)	All except Rkl, ICT
Earthquake Engineering	B.E./B.Tech./B.Sc. (Engg) (Civil)	K, R
Nuclear Hydrology	B.E./B.Tech./B.Sc. (Engg) (Civil/ Chemical)	R
Metallurgical Engineering, Materials Science, Materials Engineering	B.E./B.Tech./B.Sc. (Engg) (Metallurgy/Metallurgical Engg. / Materials Engg./ Metallurgical & Materials Engg./ Materials Science & Engg./ Metallurgy & Materials Engg./ Metallurgy & Materials Science/ Metallurgical Engineering & Materials Science/Chemical)	All except G, ICT
Electrical Engineering	B.E./B.Tech./B.Sc. (Engg) (Electrical/ Electronics/ Electrical & Electronics Engineering / Electronics & Control Engg./Electronics & Communication Engg./ Electronics & Instrumentation Engg.)	All except G, ICT
Reliability Engineering, Systems & Control Engineering, Energy Systems	B.E./B.Tech./B.Sc. (Engg) (Mechanical/ .Chemical / Electrical/ Electrical & Electronics Engineering / Electronics & Control Engg./Electronics & Communication Engg./ Electronics & Instrumentation Engg)	B, D, Kh, R
Power/ Communication/ Control Engg, Integrated Electronics & Circuits	B.E./B.Tech./B.Sc. (Engg) (Electrical/ Electronics / Electrical & Electronics Engineering / Electronics & Control Engg./Electronics & Communication Engg./ Electronics & Instrumentation Engg.)	D, G, R
Instrumentation	B.E./B.Tech./B.Sc. (Engg) (Electrical/ Electronics/ Instrumentation / Electrical & Electronics Engineering / Electronics & Control Engg. / Electronics & Communication Engg./ Electronics & Instrumentation Engg.)	Kh,M,R
Computer Science, Engineering & Technology	B.E./B.Tech./B.Sc. (Engg) (Computer/Computer Science /Computer Engineering/ Computer Science & Engineering / Electrical/ Electronics/ Electrical & Electronics Engineering / Electronics & Control Engg./Electronics & Communication Engg./ Electronics & Instrumentation Engg.)	All except Rkl, Var,ICT
Applied Optics, Lasers & Optoelectronics	B.E./B.Tech./B.Sc. (Engg) (Electronics) / Electrical & Electronics Engineering / Electronics & Control Engg./Electronics & Communication Engg./ Electronics & Instrumentation Engg./M.Sc. (Physics / Applied Physics)	D
Nuclear Engineering & Technology	B.E./B.Tech./B.Sc. (Engg) (Mechanical/ Chemical/ Electrical/ Electronics / / Electrical & Electronics Engineering / Electronics & Control Engg./Electronics & Communication Engg./ Electronics & Instrumentation Engg.)	K
Solid State Materials/ Electronic Materials	B.E./B.Tech./B.Sc. (Engg) (Electrical/ Electronics)/ Electrical & Electronics Engineering / Electronics & Control Engg./Electronics & Communication Engg./ Electronics & Instrumentation Engg./ M.Sc. (Phy/ App. Phy)	D, R
Electronics Engg, Electronics and Communication Engg	B.E./B.Tech./B.Sc. (Engg) (Electrical/Electronics / / Electrical & Electronics Engineering / Electronics & Control Engg./Electronics & Communication Engg./ Electronics & Instrumentation Engg.)	Rkl&Var

**\*\* Institutes where specified M.Tech./ M.Chem.Engg. courses are offered under this scheme: B = IIT Bombay; D = IIT Delhi; G=IIT Guwahati; K = IIT Kanpur; Kh = IIT Kharagpur; M = IIT Madras; R = IIT Roorkee; Rkl = NIT Rourkela; Var = IIT-(BHU)- Varanasi; ICT = Institute of Chemical Technology, ICT, Mumbai. Number of DGFS Fellows selected in each approved M.Tech. / M.Chem.Engg. Specialization at the Institutes under the DGFS scheme will depend upon the requirements of DAE**