TERMS OF REFERENCES (TORs) FOR INVITATION OF EoIs FOR

Empanelment of service Provider/Consultancy Agency/Institutes for Providing "GATE Training" to students in the TEQIP-III Institutions

The purpose of this EoI is to identify an agency preparing 3ʳᵈ & 4ᵗʰ year students (under graduate engineering courses) by imparting required training for preparing them for GATE. The focus of providing this shall be to polish their conceptual skills, help them qualify in single exit examination i.e. GATE and enhance the employability of technical graduates.

The service provider/consultancy agency has to impart necessary top up teaching on GATE covering basic courses, core courses and advanced courses related to each of the disciplines as per the curriculum and format for the GATE examination announced for that particular year. The performance of the student in GATE examination in terms of achieving qualifying score is expected to improve. The training/ teaching shall consist of different courses which may be given in one go to all third-year and final year interested undergraduate engineering students in the semester breaks or may be given in parts. The broad objectives of the training shall be as given below:

a) Enhance conceptual knowledge of students in particular course/ disciplines through instructions particularly for solving novel problems in the respective area.

b) Enable to apply the knowledge in different applications and expand their toolbox (of methods) to solve real life problems by becoming more skilled (technical) at explicitly thinking and applying processes.

c) Improve thinking skills to generalize as well as standardize the methods and concepts to other applications.

d) Develop systematic methods for learning from problem sets, including: how to apply and transfer conceptual knowledge; identify common obstacles and errors; and contextualize individual problems within the themes and concepts of the course.

e) The course work shall cover all the subjects as per the curriculum declared for GATE of that particular year.

f) To provide proper resources to the students to enable them for better preparation for GATE and increase the number of GATE qualifiers.

GATE is considered to be the standard examination conducted not only for post-graduation admissions but also to open the gates for lucrative opportunities in several public sector enterprises and research organizations/PSUs (IOCL, NTPC, BHEL, PGCIL, BARC etc.). Based on the score achieved in GATE, PG admissions are offered in IITs, IISc, NITs, and state engineering colleges and abundant opportunities for campus placements with handsome salary packages. Candidates on qualifying GATE, get a financial aid in the form of UGC/ AICTE scholarship.

2. **An outline of the tasks to be carried out:** The participating institutes are from focus states i.e. North East (15), J & K (4), HP (4), UP (16), Bihar (7), Chhattisgarh (4), MP (7), Uttarakhand (7), Jharkhand (4), Odisha (5), Rajasthan (11), and Andaman & Nicobar (1). The service provider has to provide training/ teaching to the pre-final / final year undergraduate students studying in Government and Government aided institutions (numbers indicated in brackets) from participating States in the project on the subject details given in this document. The list of institutes is given in **Annex-1**.

The course contents for GATE training shall be based on the curriculum declared for GATE every year. The service provider/consultancy agency has to cover following premium learning tools while delivering the contents:

a. Providing learning (study) material online/ offline before commencement of training.

b. Powerful learning opportunities from subject experts (Guest lecture) who are not available locally in towns & cities where institutions are located.

c. Interactive technology enabled online tutorials/ tests.

d. The opportunity to work and learn at a custom, personalized pace - regardless of whether or not the student is a "challenged" or "accelerated" learner in the classroom.
e. The environment (for eg. MOODLE) to ask whatever questions he/she wants in order to accomplish his/her learning goals.
f. Track achievements and progress with easy-to-use measurement tools.
g. Face to face training in the selected institutes as per the schedule to be furnished by institutions.

3. **Schedule of task**
   Schedule for the training shall be mutually decided by the institute (client) and service provider based on academic calendar/ activity of participating students. The agency is expected to cover complete GATE syllabus for following disciplines of engineering under graduate programs.

   1. Electronics & Communication Engineering,
   2. Electrical Engineering,
   3. Instrumentation Engineering
   4. Mechanical Engineering
   5. Computer Sc. and Information Technology
   6. Civil Engineering
   7. Production and Industrial Engineering
   8. Mining Engineering
   9. Chemical Engineering/ Petroleum Engineering
   10. Biotechnology

The tentative topics to be covered under each of the disciplines depend on the curriculum of GATE for that examination,

The service provider/ consultancy firms have to provide appropriate faculty corresponding to each one of the subjects so as to make students understand the concepts and also enable him/her to apply the tool/ method for the given problem.

GATE 2018 Exam consists of Multiple Choice Questions and Numerical Type Questions in all papers & sections. The following are type of Questions:

a. Recall: These are based on facts, principles, formulae or laws of the discipline. The candidate is expected to be able to obtain the answer either from his/her memory directly or at most from a one-line computation.

b. Comprehension: These questions will test the candidate's understanding of the basics of his/her field, by requiring him/her to draw simple conclusions from fundamental ideas.

c. Application: In these questions, the candidate is expected to apply his/her knowledge either through computation or by logical reasoning.

d. Analysis and Synthesis: These can be linked questions, where the answer to the first question of the pair is required in order to answer its successor. Or these can be common data questions, in which two questions share the same data but can be solved independently of one another.

e. Common Data Questions: Multiple questions may be linked to a common data problem, passage and the like. Two or three questions can be formed from the given common data problem. Each question is independent and its solution obtainable from the above problem data/passage directly.

f. Linked Answer Questions: These questions are of problem solving type. A problem statement is followed by two questions based on the problem statement. The two questions are designed such that the solution to the second question depends upon the answer to the first one. In other words, the first answer is an intermediate step in working out the second answer.

4. **Support and input provided by the client:**

   a. **Client (participating college) responsibility**:

      1. Shall provide number of batches and the list of students of participating in the training.

      2. Shall provide infrastructure like auditorium, seminar halls, internet facility, photocopy machine, attendant and team of faculty for coordination.

      3. Coordination shall include making students attending program, monitoring of attendance, collecting feedback of students, arranging weekly review meeting with head of institution, facilitating for getting accommodation, transport, working lunch to resource person etc.

   b. **Service Provider's responsibility**:

      1. The empanelled agencies shall be responsible for catering to the institutions included in Annex-1. The denial shall invite action to the extent of withdrawal from panel.

      2. Service provider has to provide detailed schedule of breakup for each of the appropriate modules covering the different skills mentioned in this document.

      3. Batch size shall be 60 students.

      4. Multiple subject experts shall be provided by mapping their specialization with the modules to be delivered for each batch.

      5. Each module must be supported by online tutorials which must be available for every registered student on 24x7 basis till the end of his graduation.

      6. Benchmarking test shall be conducted for the students enrolled for the training program before commencement of training. Every such student shall be evaluated periodically for the modules completed.

      7. Each module must be supported by online assessment module.

      8. Inviting student feedback, taking corrective actions for further improvement.

      9. The training shall be conducted preferably during Summer/ Winter vacation or as agreed mutually with the institution for pre-final year students.

5. Final output required of the consultancy organization: To train all the aspirant on proper preparation for GATE and provide them various resources like study material, access to the online videos, access to the all India Test Series, etc. and increase the number of GATE qualifiers with the help of coordinators from college.

The final output must match with the course objectives mentioned in para 1 & 2 above.

1. The Payment to the service provider will be as per the success rate in GATE 2020. The modality shall be discussed and finalized in the Pre Bid Meeting.

2. The technical graduates to whom the training shall be imparted will become more employable (increase in placements) and synchronize themselves for various needs of the industry.

3. The final assessment shall be done by service provider using the same assessment tool which was used for benchmarking (0th test).

4. The final assessment shall result into at least 30 % improvement in case of every individual student after training. It is possible only after periodic assessment and timely corrections in the methodology/ mechanism.

5. At least 30 % of the students taking GATE training qualify GATE from the respective institute.

6. Composition of review committee

1. The institute shall constitute Review Committee which will consist of at least three members. The Review Committee may contain 1 faculty from each department whose students are participating in program**.**

2. Review Committee may have representative of service provider and student representatives.

3. Review Committee shall meet on weekly basis and discuss coverage of content, student feedback and take corrective action appropriately.

4. The final settlement of training fee shall depend on the basis of satisfactory performance in view of student feedback and student performance.