

गोंय विद्यापीठ

ताळगांव पठार,

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(Accredited by NAAC)

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Ref. No.: GU/Acad-Admissions/CAC/2024-25/56

Date: 14/08/2024

NOTIFICATION**GOA UNIVERSITY – QUALIFYING ENTRANCE TEST (GU-QET) 2024-25
ADMISSIONS TO MASTER OF ENGINEERING PROGRAMMES**

Applications for admission to the Masters of Engineering Programmes offered at the Affiliated Engineering Colleges for the academic year 2024-25 shall be accepted by the respective Engineering Colleges. Interested candidates are informed to visit the respective College website for details.

Sr.No.	MASTER OF ENGINEERING PROGRAMMES	COLLEGE
1	1) M.E. Geotechnical Engineering 2) M.E. Structural Engineering 3) M.E. Industrial Engineering 4) M.E. Power & Energy Engineering 5) M.E. Industrial Automation & Robotics 6) M.E. Electronics Communication & Instrumentation Engineering 7) M.E. Computer Science & Engineering (Artificial Intelligence & Machine Learning) 8) M.E. Information Technology & Engineering	GOA COLLEGE OF ENGINEERING, FARMAGUDI, PONDA
2	1) M.E. Computer Aided Structural Engineering 2) M.E. Data Science	DON BOSCO COLLEGE OF ENGINEERING, FATODA, MARGAO
3	(1) M.E. Artificial Intelligence and Data Science	PADRE CONCEICAO, COLLEGE OF ENGINEERING, VERNA

Application schedule (At respective Engineering Colleges)	20 th August 2024 to 26 th August 2024
Admission Date (At respective Engineering Colleges)	28 th August 2024 (Without GU-QET)
Goa University - Qualifying Entrance Test (GU-QET) Schedule	02 nd September 2024 & 03 rd September 2024
Admission Date (At respective Engineering Colleges)	10 th September 2024 (for candidates with qualifying marks at GU-QET)
Last date for Cancellation of Seats with Full Refund as per AICTE	11 September 2024.
Last date for commencement of classes for First year students as per AICTE	15 September 2024

(A) ELIGIBILITY

Students with the Bachelor of Engineering (BE) Degrees (as per **Annexure I**) are eligible to seek admission to above mentioned ME programmes, provided they have 50% marks in Bachelor's Degree (45% marks in case of candidates belonging to SC/ST/OBC-NCL) or equivalent CGPA (as per AICTE Handbook 2024-27) **WITHOUT** the Goa University - Qualifying Entrance Test (GU-QET). The merit list will be based on candidates with GATE score followed by candidates with total marks from Sem V to VIII or equivalent CGPA. Candidates who have qualified GATE (valid score) shall be given preference. The merit list for non-GATE candidates shall be prepared based on Sem V to VIII marks or equivalent CGPA. Seats remaining vacant shall be offered to candidates from other Disciplines.

(B) ELIGIBILITY FOR GOA UNIVERSITY-QUALIFYING ENTRANCE TEST

- (1) Candidates who have completed 4 year UG Programme in Engineering or 3 year UG and 2 year PG programme or 5 year Integrated programme (UG+PG) in Science-Technology-Engineering-Mathematics (STEM) Programmes shall be eligible for admission to Master of Engineering Programmes in other discipline provided the candidate qualifies in the Goa University - Qualifying Entrance Test (GU-QET), as per the Curriculum & Credit Framework for Postgraduate Programme of University Grants Commission.
- (2) Eligibility of 50% marks in Bachelor's degree or Master's degree (45% marks in case of candidates belonging to SC/ST OBC (NCL) category) or equivalent CGPA are eligible to take the GU-QET.
- (3) Merit list for such candidates shall be prepared based on marks obtained in the GU-QET. If more than one candidate has the same score in GU-QET, then candidate having higher total marks/CGPA in Master's Degree (MSc (Sem I-IV)) /BE (Sem V to VIII) will be considered **for admission against the vacant seats available, if any, after students from the merit lists of programmes mentioned in Sl. No. (A) are given admission.**

(C) ADMISSION

- (i) Candidates shall refer to the respective college website or contact college administration. Application fees for admission, if any to be paid to the respective college.
- (ii) The GU-QET fees for candidates eligible under Sl.No. (B) is as follows, and to be paid to the respective colleges at the time of submission of applications:
 - INR 700 in case Un-reserved/ EWS/OBC * per subject/specialization.
 - INR 350 in case of SC/ST of Goa. * per subject/specialization.
 - No fees shall be charged from Persons with Disability.

*Candidates applying for admission under these categories shall be required to submit a valid certificate to that effect issued by the Officer of the rank of the Deputy Collector or any other authorized Officer as notified by the Government of Goa.

- (iii) Candidates shall be permitted to apply for a maximum of TWO programmes for GU- QET.
- (iv) The GU-QET shall be for a duration of TWO hours. The question paper shall be of 100 marks. The question paper pattern shall be Multiple Choice Question (MCQ) type. There shall be no NEGATIVE marking. The minimum qualifying marks is 40 marks. The syllabus for GU-QET is given at **Annexure-II**.

(D) SEAT MATRIX

Sr. No	Name of Programme	Intake
1)	M.E. in Geotechnical Engineering	18
2)	M.E. in Structural Engineering	24
3)	M.E. in Industrial Engineering	18
4)	M.E. in Power & Energy Engineering	18
5)	M.E. in Electronics Communication & Instrumentation Engineering	15
6)	M.E. Industrial Automation & Robotics	18
7)	M.E. Computer Science & Engineering (Artificial Intelligence & Machine Learning)	18
8)	M.E. Information Technology & Engineering	18
9)	M.E. Data Science	18
10)	M.E. Computer Aided Structural Engineering	18
11)	M.E. Artificial Intelligence and Data Science	18
	TOTAL NUMBER OF SEATS	201

Reservation of seats for admission to the various Programmes of study shall be on the basis of the Reservation Policy of the Goa State Government.

(E) DURATION OF THE PROGRAMME

The duration of the above programmes shall be for TWO years. However, students registered as per University curriculum (either for all the courses of that semester or part of them and hence take longer time to complete the programme) it is a regular Programme with a duration of THREE years. The college authorities reserve the right to provide either or both options depending on the faculty and infrastructure availability.

In case of queries, the candidates may contact the respective Colleges.

Sd/-
(Prof. V. S. Nadkarni)
REGISTRAR

Copy: to

1. Principal of all Affiliated Colleges
2. Director, DTE
3. AR to VC's Secretariat
4. AR to Registrar

ANNEXURE-I

(A) Candidates with the following Bachelor of Engineering degree are permitted to take admission without GU-QET for M.E. in Structural Engineering, M.E. in Computer Aided Structural Engineering and M.E. in Geotechnical Engineering.

1. Building and Construction Technology
2. Civil and Rural Engineering
3. Civil Engineering
4. Civil Engineering with Computer Application
5. Civil Engineering and Planning
6. Structural Engineering
7. Civil Environmental Engineering
8. Civil Engineering (Construction Technology)
9. Civil and Infrastructure Engineering
10. Civil Technology
11. Civil Engineering (Public Health Engineering)
12. Environmental Planning
13. Construction Automation
14. Construction Engineering
15. Construction Engineering and Management
16. Construction Technology
17. Construction Technology and Management
18. Geospatial Technology and Geoinformatics
19. Geo Informatics
20. Environment Engineering
21. Civil and Environmental Engineering
22. Civil Engineering (Environmental Engineering)
23. Civil Engineering Environment and Pollution Control
24. Environment Engineering
25. Environmental Engineering
26. Energy and Environmental Management
27. Environmental Science and Engineering
28. Environmental Science and Technology
29. Civil Engineering (Environmental Engineering)
30. Civil and Water Management Engineering

(B) Candidates with the following Bachelor of Engineering degree are permitted to take admission without GU-QET for M.E. Computer Science and Engineering (Artificial Intelligence and Machine Learning); M.E. in Data Science; M.E. in Artificial Intelligence and Data Science; M.E. in Information Technology and Engineering.

1. Artificial Intelligence (AI) and Data Science
2. Artificial Intelligence and Machine Learning
3. Computer and Communication Engineering
4. Computer Science and Applied Mathematics
5. Computer Engineering
6. Computer Engineering (Software Engineering)
7. Computer Engineering and Application
8. Computer Science and Biosciences
9. Computer Science and Design

10. Computer Networking
11. Computer Science and Engineering
12. Computer Science and Social Sciences
13. Cyber Physical Systems
14. Computer Science
15. Computer Science and Business Systems
16. Computer Science and Engineering (Internet of Things and Cyber Security Including Block Chain Technology)
17. Computer Science and Medical Engineering
18. Computer Science and Technology
19. Robotics and Artificial Intelligence
20. Computer Science and Systems Engineering
21. 3-D Animation and Graphics
22. Advanced Computer Application
23. Computer Science and Engineering (Internet of Things)
24. Computer Science and Engineering and Business Systems
25. Computer Science and Information Technology
26. Computer Science and Engineering (Artificial Intelligence and Machine Learning)
27. Computer Science and Engineering (Cyber Security)
28. Computer Science and Engineering (Networks)
29. Computer Science and Engineering (Data Science)
30. Computer Science and Engineering (Artificial Intelligence)
31. Computer Technology
32. Computing in Computing
33. Computing in Multimedia
34. Computing in Software
35. Electrical and Computer Engineering
36. Electronics and Computer Science
37. Electronics and Computer Engineering
38. Mathematics and Computing
39. Software Engineering
40. Information and Communication Technology
41. Information Engineering
42. Information Science and Engineering
43. Information Science and Technology
44. Information Technology
45. Information Technology and Engineering

(C) Candidates with the following Bachelor of Engineering degree are permitted to take admission without GU-QET for M.E.in Power and Energy Engineering

1. Electrical and Electronics (Power System)
2. Electrical and Electronics Engineering
3. Electrical and instrumentation Engineering
4. Electrical and Power Engineering

5. Electrical Engineering
6. Electrical Engineering (Electronics and Power)
7. Electrical instrumentation and Control Engineering
8. Electrical Power Engineering
9. Electrical, Electronics and Power Engineering
10. Electronics Engineering
11. Electronic Instrumentation and Control Engineering
12. Electronic Science and Engineering
13. Electronics and Computer Science
14. Electronics and Control Systems
15. Electronics and Electrical Engineering
16. Electronics and Instrumentation Engineering
17. Electronics Engineering (VLSI Design and Technology)
18. Electronics Instrument and Control
19. Electronics Instrumentation and Control Engineering
20. Electronics System Engineering
21. Electronics Technology

(D) Candidates with the following Bachelor of Engineering degree are permitted to take admission without GU-QET to M.E.in Industrial Automation and Robotics; M.E.in Electronics Communication and Instrumentation

1. Electrical and Computer Engineering
2. Electrical and Electronics (Power System)
3. Electrical and Electronics Engineering
4. Electrical and instrumentation Engineering
5. Electrical and Power Engineering
6. Electrical Engineering
7. Electrical Engineering (Electronics and Power)
8. Electrical instrumentation and Control Engineering
9. Electrical Power Engineering
10. Electrical, Electronics and Power Engineering
11. Electronic Engineering
12. Electronic Instrumentation and Control Engineering
13. Electronic Science and Engineering
14. Electronics and Biomedical Engineering
15. Electronics and Communication (Communication System Engineering)
16. Electronics and Communication Engineering (Advanced Communication Technology)
17. Electronics and Communication Engineering (VLSI Design & Technology)
18. Electronics and Communication Engineering
19. Electronics and Communication Engineering (Bio-Medical Engineering)
- Electronics and Communication Engineering (Microwaves)

(D) Candidates with the following Bachelor of Engineering degree are permitted to take admission without GU-QET to M.E.in Industrial Engineering

1. Industrial and Production Engineering
2. Industrial Engineering
3. Industrial Engineering and Management
4. Industrial Production Engineering
5. Logistics & Supply Chain Management

6. Manufacturing Engineering
7. Manufacturing Engineering and Technology
8. Manufacturing Process and Automation Engineering
9. Manufacturing Science and Engineering
10. Manufacturing Technology
11. Mechanical and Automation Engineering
12. Mechanical and Mechatronics Engineering (Additive Manufacturing)
13. Mechanical and Rail Engineering
14. Mechanical and Smart Manufacturing
15. Mechanical Engineering
16. Mechanical Engineering (Automobile)
17. Mechanical Engineering (Manufacturing Engineering)
18. Mechanical Engineering (Production)
19. Mechanical Engineering (Welding Technology)
20. Mechanical Engineering Design
21. Production and industrial Engineering
22. Production Engineering

ANNEXURE-II
SYLLABUS FOR GU-QET

(A) Syllabus for the Goa University- Qualifying Entrance Test GU-QET (Civil Engineering) for the following ME programmes

- M.E. in Structural Engineering
- M.E. in Computer Aided Structural Engineering
- M.E. in Geotechnical Engineering

Equilibrium of Forces, Analysis of trusses by method of joints and method of sections, Simple lifting machines – Calculation of mechanical advantage, Velocity ratio and efficiency, determination of deflection of beam by using Macaulay's method, Moment Area method and Conjugate beam method, Shear force & bending moment diagrams for various types of beams and loadings – determination of point of zero shear, points of contraflexure and maximum bending moment, direct & bending stresses, stresses in an element, principal stresses and planes; degree of indeterminacy, Analysis of beams and frames by using Moment Distribution, Slope Deflection methods, Kani's method and matrix methods, Various types of loads on structures, Properties of Concrete, mix design, concrete composition and admixtures; Limit state theory of RC design Design of reinforced Concrete, beams, columns, slabs, footings, Prestressed Concrete members; Steel Structures, tension , compression and flexural members , bolted and welded connections, Three phase relationships of soil, Index properties of soils, shear strength of Soils, permeability and seepage, Flow net, compaction, consolidation, Boussinesq and westergaard theory of stress distribution in soils, Stress distribution on a horizontal and vertical plane in soils, pressure bulb, Concept of Effective stress and pore pressure in soils, bearing capacity definitions, estimation of bearing capacity by Terzaghi's, Meyerhof's and IS method, Estimation of earth pressure, Estimation of settlement of soils; Types of shallow and deep foundations, proportioning of shallow foundations, estimation of load carrying capacity of single pile and pile groups, Ground Improvement Techniques for weak soils, stability analysis of finite and infinite slopes.

(B) Syllabus for the Goa University- Qualifying Entrance Test GU-QET (Computer and Information Technology) for the following ME programmes

- M.E.Computer Science and Engineering (Artificial Intelligence and Machine Learning);
- M.E.in Data Science;
- M.E.in Artificial Intelligence and Data Science;
- M.E in Information Technology and Engineering.

Programming in C: Data Types, variables, constants, operators, expressions, input and output, Decision making and branching, and Arrays. Digital Electronics: Decimal, binary, octal, hex number systems and their inter conversions, Binary arithmetic, Introduction to BCD codes, Gray codes, Excess-3 codes & ASCII codes, Basic Gates-NOT, OR, AND, Universal Logic Gates-NOR, NAND, Combinational Logic Circuits, Boolean Laws and Theorems, Reducing Boolean Expressions, Converting AOI to NAND/NOR Logic. Operating Systems: Operating System Structure, Operating System Services, Types of System calls. Process scheduling, Inter-process communication. Multithreading models, Threading issues. CPU Scheduling Algorithms: FCFS, SJF, SRTF / SRTN, Priority Scheduling, Round Robin Scheduling. Computer Networks: The OSI and TCP/IP Reference Models. Theoretical Basis for Data Communication. The Maximum Data Rate of a Channel. Data Link Layer Design Issues, Framing, Error Control, Flow Control Error-Correcting Codes, Error –Detecting Codes. Sliding Window protocol.

(C) Syllabus for the Goa University- Qualifying Entrance Test GU-QET (Electrical and Electronics Engineering) for the following ME program

- **M.E.in Power and Energy Engineering**

Electrical & Electronic Circuits: Kirchhoff's voltage & current laws (KCL, KVL), Node and Mesh analysis; Network Theorems: Thevenin's, Norton's, Superposition and Maximum Power Transfer theorem. Simple diode circuits: clipping, clamping, rectifiers; Amplifiers: biasing. Electrical Machines: Single phase transformer: equivalent circuit, phasor diagram, open circuit and short circuit tests, regulation and efficiency; Three-phase transformers: connections, vector groups, parallel operation; Three-phase induction machines: principle of operation, types, performance, torque-speed characteristics, no-load and blocked-rotor tests, equivalent circuit, starting and speed control; Operating principle of single-phase induction motors; Synchronous machines: cylindrical and salient pole machines, performance and characteristics, regulation and parallel operation of generators, starting of synchronous motors; Types of losses and efficiency calculations of electric machines. Power Systems-Basic concepts of electrical power generation, ac and dc transmission concepts, Models and performance of transmission lines and cables. Symmetrical and unsymmetrical fault analysis, Principles of over-current, differential, directional and distance protection; Circuit breakers, System stability concepts. Control System: Mathematical modelling and representation of systems, Feedback principle, transfer function, Block diagrams and Signal flow graphs Power Electronics- Static V-I characteristics and firing/gating circuits for Thyristor, MOSFET, IGBT, DC to DC conversion: Buck, Boost and Buck-Boost Converters, Single-phase and three-phase voltage and current source inverters, sinusoidal pulse width modulation.

(D) Syllabus for the Goa University- Qualifying Entrance Test GU-QET (Electronics and Telecommunication Engineering) for the following ME programmes

- **M.E.in Industrial Automation and Robotics**
- **M.E.in Electronics Communication and Instrumentation Engineering**

Engineering Mathematics: Linear Algebra: Vector space, basis, linear dependence and independence, matrix algebra, Eigenvalues and eigenvectors, rank, solution of linear equations- existence and uniqueness; Signals and

Systems: Continuous-time signals: Fourier series and Fourier transform, sampling theorem and applications. Discrete-time signals: DTFT, DFT, z-transform, discrete-time processing of continuous-time signals. LTI systems: definition and properties, causality, stability, impulse response, convolution, poles and zeroes, frequency response, group delay, phase delay. Digital Circuits: Number representations: binary, integer and floating-point-numbers. Combinatorial circuits: Boolean algebra, minimization of functions using Boolean identities and Karnaugh map, logic gates and their static CMOS implementations, arithmetic circuits, code converters, multiplexers, decoders. Sequential circuits: latches and flip-flops, counters, shift-registers, finite state machines, propagation delay, setup and hold time, critical path delay. Data converters: sample and hold circuits, ADCs and DACs. Control Systems: Basic control system components; Feedback principle; Transfer function; Block diagram representation; Signal flow graph; Transient and steady-state analysis of LTI systems; Frequency response; Routh-Hurwitz and Nyquist stability criteria; Bode and root-locus plots; Lag, lead and lag-lead compensation; State variable model and solution of state equation of LTI systems. Analog communications: amplitude modulation and demodulation, angle modulation and demodulation, spectra of AM and FM, super heterodyne receivers. Digital communications: PCM, DPCM, digital modulation schemes (ASK, PSK, FSK, QAM), bandwidth.

(E) Syllabus for the Goa University- Qualifying Entrance Test GU-QET (Mechanical Engineering) for the following ME programme

- **M.E.in Industrial Engineering**

Introduction to manufacturing processes: Sheet metal forming, Sheet metal cutting, Metal joining processes. Linear Measurement: Vernier Instruments, Micrometer Instruments and Slip gauges. Angular Measurement: Sine Bar Probability Preliminary: Introduction to Probability, definition, Sample Space, Events, Conditional Probability, Theorem on total probability, Random Variable: Introduction, Discrete and Continuous, Characteristics-Mean and Variance. Probability distributions: Bernoulli trial, Binomial, Geometric, Exponential and Normal – Probability law, mean and variance. Concept of Productivity, Production vs Productivity, Productivity Measures, Work Study, Method Study, Procedure of Method Study, Work Measurement, Work Measurement Techniques (Work Sampling, Time Study), Wages and Incentives. Plant layout (Process layout and product layout) Forecasting, Project scheduling (CPM), Inventory, ABC analysis, Basic EOQ model, Assembly line balancing, Sequencing and scheduling. Management theories, Manager V/S Leader, Organisation, Organisational structure, Span of control, Authority Responsibility and Delegation, Leadership, Leadership styles, Motivation, Maslow's Theory of Motivation, Communication, Communication process model.