2020

Brochure of M. E. (Met. & Mats.) (Welding Tech.) Program (2020-2022)

(L & T Sponsored)

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Department of Metallurgical & Materials Engineering Dept.

Faculty of Tech. & Engg.

The M.S. University of Baroda, Vadodara

ADMISSION TO POST GRADUATION COURSE IN
M. E. (Met. & Mats.) (Welding Tech.) Program (2020-2022)
Department of Metallurgical & Materials Engineering The
M.S. University of Baroda, Vadodara

A two-year Master's Degree program in Welding Technology is being offered from the year 2006 at the Department of Metallurgical & Materials Engineering, The M.S. University of Baroda. This is a special, Industry- oriented, Industry-supported program sponsored by Larsen & Toubro Ltd.

About 15 students are admitted to this course every year. Around **04** out of them may be sponsored by L&T. The Company will pay scholarship/stipend during the two years of the course and absorbed in L&T on successful completion of the course, if they meet the required criteria.

Eligibility Criteria – L&T Sponsored students

Following Eligibility Criteria is applicable to all category students (ST, SC, SEBC, EWS & Open)

1. Final Year/Semesters students in M.Tech./M.E. Course (completing in2022)
2. Candidate should have passed the **SSC / Xth Std** examination **in first attempt** with minimum **70% or above.**
3. Candidate should have passed the **HSC/ XIIth Std** examination **in first attempt** with minimum **70% or above.**
4. **No year gap** between SSC / Xth Std & HSC / XIIth Std
5. **70% aggregate marks** or above in **Diploma** Engineering (if applicable). Candidates **should not have any ATKTs / Backlogs*** in Diploma course.
6. **Minimum 65% aggregate marks** or equivalent CGPA in the **B.E. / B. Tech** Course.
7. Candidates **should not have any ATKTs / Backlogs*** in B.E. / B Tech course.
8. **No drop** in any **semester/ year** throughout Diploma / B.E / B Tech
9. **AGE:** Not more than **27 years** as on **1st July 2022**.
10. Medical standards to be met as per company policy

*** Note: Backlog / ATKT**

***** All backlogs / ATKTs, live as well as cleared to be counted as the total no. of ATKTs / Backlogs throughout the history of engineering for the purpose of eligibility.

Eligibility Criteria – Non Sponsored students

1. All students, who have successfully completed the B.E./ B.Tech. Program in Metallurgical Engineering, Mechanical Engineering, Production Engineering or Mechatronics with minimum 55% aggregate, are eligible to apply.
2. GATE qualification is not mandatory for applying to this program.

Apart from L&T, other Industries may also sponsor some students based on their eligibility criteria and requirements.

Important Announcements:

- The candidates are advised to read carefully important instructions/ guidelines before applying online. However in case of a candidate applying without being eligible, his/her application will be summarily rejected and his/her application fee will be forfeited. No correspondence will be entertained in this matter.

- The candidates, whose final year results are awaited, can also apply but they shall have to pass qualifying examination with minimum eligibility criteria as applicable for Non sponsored / Sponsored as applicable at qualifying exam, however merit number in such case will be allotted, if mark sheet and provisional degree certificate of passing qualifying exam is submitted within the scheduled time limit.
- Total allotment of seats for ME (Welding Tech.) Course shall be filled as per Govt. of Gujarat Post Graduate Admission Rules, Guidelines and AICTE Guidelines (27% SEBC, 7% SC, 14% ST and 10 % EWS from open category).
- **Candidates applying under SC/ST category should bring original Cast Certificate and those who applying under SEBC category should bring Cast Certificate as well as Non Creamy-layer Certificate at time of Interview.**
- **Economically weaker Section Certificate (EWS) etc should be duly stamped, signed and issued by the authority empowered by Government of Gujarat.**
- Sponsoring Industries will also apply their own criteria for selecting students for sponsorship.
- Admission to the above course will be made by M.S. University of Baroda in accordance with usual procedure. (refer, website: www.msubaroda.ac.in)
- Prescribed application forms for this program will be available at Faculty of Technology and Engineering, The M. S. University of Baroda, Vadoadara OR can be downloaded from the M.S. University website: www.msubaroda.ac.in from **29th June 2020**.
- After online registration, it is mandatory for all candidates even for those whose result is awaited to submit print-out of registration form and self attested photo copies of the required documents to the Head, Metallurgical & Materials Engineering Dept., Faculty of Tech. & Engg., The M.S. University of Baroda, Vadodara- 390 001 on or before **9th October 2020.**
- Short-listed candidates will be called for a selection test / interview to be held at the Dept. of Metallurgical & Materials Engineering on Monday & Tuesday **, 19th & 20th October 2020**.
- No TA/ DA will be paid to the candidates for appearing for the selection test / interview. The selected candidates will have to pay the necessary fees (approx. Rs. 5000=00) as per MSU Guidelines.
- **The classes will start from Monday, 2nd November 2020.**
- Regular visits to L&T Works and lectures by L&T experts are an integral part of the program.
- Project Work will be arranged at the sponsoring industries for sponsored students. Department will help non-sponsored students to identify organizations for their project work.
- There will be a few students not sponsored by any organization and hence will not get stipend.
- **Candidates should bring Hard Writing Pads for the Admission test.**

Those desirous of more information may write to:

Dr.B.J.Chauhan **Offg. Head & Director** **Associate Professor** Met. & Mats. Engg. Dept E- Mail : head-metallurgy@msubaroda.ac.in	**Dr. Sunil D. Kahar** **Asst. Prof. & Deputy Director** M.E (welding Tech) Course, Met. & Mats. Engg. Dept. E -Mail: sunil.d.kahar- metallurgy@msubaroda.ac.in	**Mr. Keshav Narayana** **L & T Chair Professor** M.E (welding Tech) Course, Met. & Mats. Engg. Dept. E-Mail: lkharitasa@gmail.com

Placements- All over India & Abroad

- ✓ L&T
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- ✓ CB&I, AUSTRALIA
- ✓ PETROFAC, SHARJAH
- ✓ VOESTALPINE BOHLER
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- ✓ ESAB
- ✓ PDPU, GANDHINAGAR
- ✓ R.K. UNIVERSITY
- ✓ ANUP ENGINEERING
- ✓ GEC GANDHINAGAR
- ✓ GEC VALSAD

Broad outline of Syllabus for M.E. (Welding Tech) Admission Test

1. Atomic Structure, Interatomic Bonding and Structure of Crystalline Solids:
Atomic structure, atomic bonding in solids, crystal structures, crystalline and non-crystalline materials, Bravais lattices, unit cells, crystal structures, crystal planes and directions, Miller indices.

2. Alloying in metals:
Hume Rothery rules and Solid solutions.

3. Mechanical Properties of Metals:
Mechanical properties and Testing: Elastic deformation, plastic deformation, stress-strain diagram, ductile & brittle material, stress vs strength, toughness, hardness, fracture, fatigue and creep, testing such as strength testing, hardness testing, impact testing, fatigue testing creep testing, non-destructive testing (NDT), interpretation of tensile stress-strain curves, yield criteria and macroscopic aspects of plastic deformation.

4. Failure:
Fracture, ductile and brittle fracture, impact fracture, ductile to brittle transition, fatigue and creep failure.

5. Strengthening Mechanisms:
Various mechanisms of strengthening of metals.

6. Phase Diagrams:
Equilibrium phase diagrams, types of phase diagrams, allotropy and phase change of pure iron, the iron-carbon system, phase transformations, transformation rate effects and TTT diagrams, microstructure and property changes in iron-carbon system.

7. Ferrous & non-ferrous materials:
Types of metals and alloys, brief introduction to iron and steel, various types of carbon steels, alloy steels and cast irons, their properties and uses, basics of copper, aluminium and its commercially important alloys

8. Heat treatment:
Thermal processing of metals, heat treatment of metals and alloys such as annealing, normalizing, quenching, tempering and case hardening, recovery, recrystallization and grain growth.

9. Corrosion and Degradation of Materials:
Corrosion of metals and alloys, types of corrosion and corrosion protection methods.

10. Manufacturing processes:
Casting, forging and wrought processes.

11. Metal joining:
Fabrication of metals, basic conventional metal joining processes such as welding, brazing and soldering, oxy-acetylene welding, arc welding, gas cutting.

12. Workshop practices:
Important workshop practices such as milling, shaping, machining, etc. at a glance.

References:

1. W.D. Callister, Jr, – Material Science & Engineering, Addition-Wesley Publication.
2. K.M. Gupta, Materials Science, Umesh Publication.
3. Van Vlack – Elements of Material Science & Engineering, John Wiley & Sons.
4. V. Raghvan – Material Science, Prentice Hall.
5. Narula – Material Science, TMH.
6. Srivastava, Srinivasan – Science of Materials Engineering, New Age Publication.

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Department of Metallurgical & Materials Engineering, The

M.S. University of Baroda, Vadodara

Important Dates for Admission

Availability of application forms : **29-6-2020 to 09-10-2020**

Last Date for Receipt of Applications : **12-10-2020**

Test /Interview : **19th & 20th October 2020**

Commencement of Classes : **2nd November 2020**

All those applicants who satisfy the eligibility criteria should report on their own for test interview (including sponsorship test, etc.) **on 19th October 2020 at 9:00 A.M. at the Department of Metallurgical & Materials Engineering, Faculty of Technology and Engineering, The M.S. University of Baroda, Vadodara - 390 001.** No separate letter will be issued calling applicants for interview, please note that the selected students should arrange to pay the fees immediately.
Regular classes will commence on 2nd November 2020.

Please note that there are 15 seats out of which L&T will sponsor 04 candidates, with stipend. Students with B.E. (Metallurgy), B.E. (Mechanical / Production) and B.E. (Mechatronics) qualification with minimum 55% aggregate are eligible to apply for Non Sponsored seats and Minimum 65% **aggregate are eligible to apply for L & T Sponsorship.**

For further details please refer to **www.msubaroda.ac.in**

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Availability of application forms	Last Date for Receipt of Applications	Interview / Sponsorship Test	Commencement of Classes
29-06-2020 to 09-10-2020	12 -10-2020	19th & 20th October 2020 (Monday & Tuesday)	2nd November 2020