

# **MADHAV INSTITUTE OF TECHNOLOGY AND SCIENCE, GWALIOR – 474005**

A Grant-in-Aid Autonomous Institute of Government of M.P.India, Estd.in 1957  
(Affiliated to R.G.P.V Bhopal M.P)



## **TENDER DOCUMENT**

For

### **Mechanical Engineering Lab Equipments (Fluid Mechanics Lab) Tender: September -2015**

Tender Cost: Rs.300/-  
EMD: Rs.3500/-

**\* Vendor must specify the make and model of each item**

**Seal & Sign of Supplier/Agency with Date**



**MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE, GWALIOR-05**  
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## TENDER FORM - (PRICE BID)

### (Mechanical Engineering Lab Equipments)

(Financial bid will be accepted in the following format only)

**Machines/Equipments:** (Should be purchased via open tender process)

EMD: Rs 3500/-

S. No.	Items	Specification/ Description	Quantity	Quoted Rate	
				In Fig. (Rs)	In Words (Rs.)
1.	Equipment for $C_d$ of a Venturimeter	Set-up should be a self contained water re-circulating unit, provided with a sump tank and a centrifugal pump. Flow control valve and by-pass valves should be provided for in water line to conduct the experiment on different flow rates. Flow rate of water should be measured with the help of measuring tank and stop watch. All tanks should be made of Stainless steel and all pipes should be G.I. in order to avoid rusting. The whole Set-up must be well designed and arranged in a good quality painted Structure. <b>TECHNICAL SPECIFICATIONS: -</b> <b>Venturimeter</b> : Material Clear Acrylic, Compatible to 1" Dia pipe <b>Water Circulation:</b> FHP Pump, ISI mark. <b>Flow Measurement:</b> Measuring Tank with Piezometer, Capacity 25 ltrs. <b>Sump Tank</b> : Capacity 70 ltrs. <b>Stop Watch</b> : Electronic <b>Control Panel:</b> On / Off Switch, Mains Indicator etc. <b>Tanks</b> : Made of Stainless Steel	01		
2	Equipment for $C_d$ of a Notch	The Lab setup should consists of a channel having sufficient length and width in which water is supplied from the bottom. Required Notch is fitted at one end of this channel. A hook gauge with Vernier scale should be provided to measure the height of fluid in flow channel. Arrangement for fixing interchangeable notches should be there. Set of minimum three notches, i.e. rectangular notch. 90 V notch and trapezoidal notch provided along with the set up. Self – contained water re- circulating unit .provided with a sump tank and a centrifugal pump etc. Flow control valve and by-pass value are fitted in	01		

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		<p>water line to conduct the experiment on different flow rate .Flow rate of water is measured with the help of measuring tank and stopwatch. All tanks should be made of Stainless steel and all pipes should be G.I. in order to avoid rusting. The whole Set-up must be well designed and arranged in a good quality painted Structure</p> <p><b>TECHNICAL SPECIFICATIONS:</b>  <b>Hook/ Pointer :</b> With Vernier Scale  <b>Water Circulation:</b> FHP Pump, ISI mark.  <b>Flow Measurement :</b> Measuring Tank with Piezometer, Cap.25 Ltrs.  <b>Sump Tank:</b> Capacity 70 Liters.  <b>Stop Watch:</b> Electronic  <b>Control Panel:</b> On/Off Switches, Main Indicator etc.  <b>Tanks :</b> Made of Stainless Steel</p>			
3	Equipment for $C_c$ , $C_d$ , $C_v$ of an Orifice meter	<p>Set-up should be a self contained water re-circulating unit, provided with a sump tank and a centrifugal pump. Flow control valve and by-pass valves should be provided for in water line to conduct the experiment on different flow rates. Flow rate of water should be measured with the help of measuring tank and stop watch. All tanks should be made of Stainless steel and all pipes should be G.I. in order to avoid rusting. The whole Set-up must be well designed and arranged in a good quality painted Structure</p> <p><b>TECHNICAL SPECIFICATIONS:</b>  <b>Orifice meter :</b> Circular sharp edged orifice  <b>Water Circulation:</b> FHP Pump, ISI mark.  <b>Flow Measurement:</b> Measuring Tank with Piezometer, Capacity 25 Ltrs.  <b>Sump Tank :</b> Capacity 70 Ltrs.  <b>Stop Watch :</b> Electronic  <b>Control Panel:</b> On / Off Switch, Mains Indicator etc.  <b>Tanks :</b> Made of Stainless Steel</p>	01		
4	Equipment for determination of Darcy's friction coefficient (flow through pipes)	<p>The Set-up must consist of at least 2 pipes of different diameters, which are connected in parallel. Pressure tapings are provided on each pipe to measure the pressure losses with the help of a Differential Manometer. Control valves should be there on each pipe, which enables to use one pipe at a time for experiment. Set-up must be a self-contained water re-circulating unit, provided with a sump tank and a FHP centrifugal pump etc. Flow control valve and by-pass valve fitted in water line to conduct the experiment on different flow rates. Flow rate of water should be measured with the help of measuring tank and stop watch. All tanks should be made of Stainless steel and all pipes should be G.I. in order to avoid</p>	01		

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		<p>rusting. The whole Set-up must be well designed and arranged in a good quality painted Structure</p> <p><b>EXPERIMENTS:-</b></p> <ul style="list-style-type: none"> <li>To determine the losses due to friction in pipes</li> <li>To determine the friction factor for Darcy Weis back equation</li> </ul> <p><b>TECHNICAL SPECIFICATION: -</b></p> <p><b>Pipes (2 Nos.)</b> : Material GI of ½ " &amp; 1" Diameter</p> <p><b>Water Circulation</b> : FHP Pump, ISI mark</p> <p><b>Flow Measurement</b> : Using Measuring Tank with Piezometer, Capacity 25 Ltrs.</p> <p><b>Sump Tank</b> : Stainless Steel, Capacity 70 Ltrs.</p> <p><b>Stop Watch</b> : Electronic</p> <p><b>Control Panel:</b> On / Off Switch, Mains Indicator etc.</p> <p><b>Tanks</b> : Made of Stainless Steel</p>			
5	Determination of Metacentric Height of a Ship Model	<p>A pontoon is allowed to float in a small tank having a transparent side. Removable steel strips must be provided in the model for the purpose of changing the weight of the model. Displacement of weight is measured with the help of a scale. By means of a pendulum the angle of tilt can be measured on a graduated arc. A set of weights must be supplied with the apparatus. The whole Set-up must be well designed and arranged in a good quality painted Structure</p> <p><b>EXPERIMENTS:-</b></p> <ul style="list-style-type: none"> <li>Determination of the Metacentric height and position of the Metacentric height with angle of heel of ship model.</li> </ul> <p><b>TECHNICAL SPECIFICATION: -</b></p> <p><b>Material</b> : Stainless Steel Pontoon</p> <p><b>Water Tank</b> : Min. Size 600 x 400 x 400 mm (Approx.)</p> <p><b>Front Window of Tank</b> : Made of Glass/ Perspex</p>	01		

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6	Redwood viscometer	<p>The complete outfit must comprises Stainless steel bath with electrical heating arrangement suitable to operate at 220 Volts AC Mains with tap, silver plated oil cup with precision stainless steel jet, cup cover, ball valve, thermometer-clip. Stirrer and stand with leveling screws.</p> <p><b>TECHNICAL SPECIFICATION: -</b></p> <p><b>Power Source :</b> Electrically heated suitable to operate on 220V A.C. supply.</p> <p><b>Stop Watch :</b> Electronic Model</p> <p>Ideal for water, different oils, polymer liquids, kerosene, aviation fuel etc</p> <p>Resistance towards, heat, water and corrosion</p>	01		
	TOTAL				

**Note:** Rates are to be quoted both in figures and words. If any dispute or cutting exists in rates, written in words shall be prevailed (treated as final).

Date:  
Place:

Signature of the authorized person  
Name:  
Seal :

**(Dr. Sanjeev Jain)**  
**Director**

\*rates are to be quoted per unit. The quantity may vary as per need.

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## **General Terms & conditions**

1. Tender documents can be obtained against cash payment/ DD(in favour of Director, MITS, Gwalior payable at Gwalior) only of cost of tender form, i.e. Rs.300/-(Non- refundable) on or before 05/10/2015 up to **01:00 PM** from the Institute during working hours.
2. **The tender documents directly downloaded from the website, must be attached with a draft of the tender cost in favour of director, MITS, Gwalior payable at Gwalior.** (web site: www.mitsgwalior.in)
3. Earnest money deposit (EMD) is to be submitted along with the completed tender form duly sealed in 1<sup>st</sup> cover. The EMD shall be in the form of demand Draft/Pay order in favour of the **Director, MITS, Gwalior,** payable at Gwalior.
4. Eligibility criteria for applying for the tender.
  - i. Valid VAT and Commercial Tax registration for the similar work on the date of application.
  - ii. PAN & TIN NumberThese certificates are to be put inside the 1<sup>st</sup> envelope.

The tenders shall submit the tender in two sealed envelopes *marked as 1<sup>st</sup> and 2<sup>nd</sup>*. **The first envelope should contain the EMD, and copies of all relevant documents pertaining to eligibility criteria and second envelope should contain the tender form of the price bid.** In case, the 1<sup>st</sup> cover is not annexed for eligibility criteria in the proper form as mentioned above in clause (4), and/or is without EMD, the envelope marked 2<sup>nd</sup> will not be opened at all and the same will be rejected and no representation shall be entertained in this regard. *These two envelopes are to be put inside the third separate envelop.*
5. **All sealed cover envelopes** must be super scribed “**Mechanical Engineering lab equipments for FM lab**” *with Red Ink on the top of envelop.*
6. The last date & time of submission of tender is, (on or before) 05/10/2015 up to **03:00PM.**
7. Tender will be opened on 05/10/2015 at **03:30 PM.** The second envelope of only **the eligible tenderers** will be opened on the same day.
8. The amount of earnest money deposited in respect of the successful tenders shall be converted into security deposit. The earnest money of unsuccessful tender will be refunded on demand. No interest shall be paid by the institute on Earnest money Or security deposit. The Security deposit shall be refunded after satisfactory completion of supply.
9. Telegraphic/Fax and conditional tenders shall not be accepted.
10. Director, MITS, Gwalior, reserves the rights to accept or reject any or all tenders without assigning any reason thereof.
11. The rates should be F.O.R. at site (Institute Premises) and no extra charges on this account (for octroi, VAT, and surcharge etc.) shall be payable to the suppliers.
12. M.I.T.S Gwalior Institute is exempted to pay excise duty.
13. **The rates should include all materials, labour charges, profit and relevant taxes, if any.**
14. The tenders, whose tender is accepted, shall have to sign an agreement as per the given format.
15. Any amount due or becoming due for the tenders shall be covered from their bills.
16. The competent authority reserves the right to increase or decrease the quantity of any item of supply, during the currency of contract. The tenders will be bound to comply with the order of the competent authority without any claim and compensation.
17. The competent authority to dispose off the tenders will have the right of rejecting all or any part of the tender without assigning any reason; even the lowest tender does not necessarily qualify for the order.
18. The rates should be competitive and workable.
19. Any controversy will be subjected to disposal in Gwalior jurisdiction only.
20. The Income Tax and Commercial Tax shall be deducted from the bills as per the rules.
21. The whole supply should be satisfactorily executed within stipulated time from the date of issue of order. Time extension will not be permitted.
22. The tenders shall execute the work as per specifications mentioned in the supply order.
23. Before making any supply of any materials to the Institute, the tender shall get it approved by the competent authority or his representative; otherwise the supply shall not be approved. To check the rest of supply, he should submit the approved sample in our office, if items do not belong to reputed or registered make.
24. The tender should satisfy himself regarding the magnitude of the supply & no claim on this account shall be entertained.
25. Warranty period should be clearly specified as per the latest term and condition of the original manufacturers and the parts and labour costs are to be included for the full warranty period.
26. The warranty period will be considered from the date of supply of the items.
27. **Laboratory manuals should be supply with the equipments.**
28. A duly constituted committee of the Institute may inspect the supply made by the tender at other place. The committee may also inspect infrastructure of those applicants who qualify the eligibility criteria in clause- 4, for satisfaction.
29. M.I.T.S. Gwalior will have the right to check the samples before supply.
30. Payment will be made after the successful and satisfactory supply.

**(Dr. Sanjeev Jain)**  
**DIRECTOR**

I have studied the above general conditions of contract and shall abide by them.

Date:

**Seal & Signature of the Agency/ Firm**

## **Tender Notice**

**Madhav Institute of Technology & Science,  
Gwalior**

**Tender Notice for Lab/Equipments**

Sealed tenders are invited from reputed suppliers for **Mechanical Engineering lab equipments for Fluid Mechanics lab.** Tender document can be purchased from the Institute Office during working hours on or before **05/10/2015** up to 01:00PM at a cost of Rs.300/- Tenders shall be deposited on or before **05/10/2015** up to 03:00PM. Tenders shall be opened on **05/10/2015** at 03:30 PM in the office of the undersigned. The respective tender value EMD is to be deposited in form of D.D. in favour of the Director, MITS Gwalior, payable at Gwalior. Tenders can also be downloaded from website [www.mitsgwalior.in](http://www.mitsgwalior.in).

**Director**

## **Important Dates:**

Activity	Last date	Time
Purchase of tender	<b>05/10/2015</b>	01:00 PM
Submission of filled tender	<b>05/10/2015</b>	03:00 PM
Opening of tenders	<b>05/10/2015</b>	03:30 PM