FACULTY OF ENGINEERING

UNIVERSITY OF LUCKNOW

Second Campus, Jankipuram, Lucknow-226031 (U.P.)

TENDER NOTICE

The University of Lucknow, Lucknow invites sealed tender from eligible bidders for supply testing and commissioning of Equipments for **Mechanical Engineering Laboratories** of Faculty of Engineering, University of Lucknow, Second Campus, Jankipuram, Lucknow-226031 (U.P.). Separate tenders must be submitted at University of Lucknow for each package of following Electrical Engineering Laboratories:

Package – FOE/ME/01/2019	- Manufacturing Science & Engineering Laboratory - II
Package – FOE/ME/02/2019	- Heat & Mass Transfer Laboratory
Package – FOE/ME/03/2019	- Fluid Machinery Laboratory
Package – FOE/ME/04/2019	- I. C. Engines Laboratory
Package - FOE/ME/05/2019	- Theory of Machines Laboratory

For Tender Documents, Tender Cost, EMD, Specifications of equipments and other details please visit our website: www.lkouni.ac.in

REGISTRAR
University of Lucknow

FACULTY OF ENGINEERING

UNIVERSITY OF LUCKNOW

Second Campus, Jankipuram, Lucknow-226031 (U.P.)

TENDER DOCUMENT

Tender No. - 02/FOE/LU/2019 Date:

Sealed and separate tenders in two parts i.e. tender bid-I (Technical) and tender bid-II (Financial) are herewith invited for Supply & Commissioning of **Mechanical Engineering Laboratory** Equipments at **Faculty of Engineering, University of Lucknow, Second Campus, Jankipuram, Lucknow-226031 (U.P.),** along with Earnest money (Mentioned with package/unit) in the shape of Demand Draft of Nationalized Bank in favour of Finance Officer, University of Lucknow, Luckow (U.P.). Both envelopes should be kept in one big envelope. The tender should reach to the undersigned latest by **20.06.2019 at 02.00 PM.**

Terms & Conditions

1. Tenders are being invited for purchase and commissioning of equipments to establish various laboratories. Each Laboratory will be treated as one package/unit. It is obligatory that a firm selected for the establishment of a Laboratory shall supply all the equipments of that laboratory. The firm will also complete the work of installation/mounting and commissioning of these equipments.
2. Bid Evaluation Criteria: Bid shall be evaluated for whole package.
3. Details of equipments/materials are as per bill of quantity attached.
4. Tenders should be submitted either in person or by post in sealed envelopes on which name of package/unit, tender number and date along with name and address of the firm will be written.
5. **TENDER BID-I** (Technical) shall contain (i) Tender cost (non refundable) (ii) Earnest Money (iii) Proof of PAN and GST registration documents (iv) Standing of the firm (v) Major supplies executed in recent past (vi) Authorized dealer certificate from OEM & Commercial terms and conditions.

   TENDER BID-II (Financial) shall contain rate schedule only. The rates per unit must be quoted both in figures and words. Any overwriting and/or cutting must be duly signed failing which tenders are likely to be rejected.
6. Tenders received after due date and time will not be considered.
7. EMD of all unsuccessful bidders will be refunded after opening of tenders. However, EMD of successful bidder will be refunded only after successful installation and commissioning of equipments and due verification by concerned authority.
8. DD of Rs. 1000-/- being cost of tender per package has to be attached with Tender form in favour of **Finance Officer, University of Lucknow** payable at Lucknow, which is not refundable in any case.
9. Price quoted should be F.O.R. **Faculty of Engineering, University of Lucknow, Second Campus, Jankipuram, Lucknow-226031 (U.P.).**

10. Minimum turnover of the firm should be one crore per year (enclosed certificate).
11. The firm should have wide experience of similar work executed during last three years in academic institutions. The proof for the same should be attached.
12. Detailed specifications and make of the equipments/ materials must be given.
13. All available technical literature, catalogues and other data sheets in support of the Specifications and details of the items should be furnished along with the technical bid.
14. All the supplied equipment must have minimum warranty of one year on site from the Date of installation and acceptance by Faculty of Engineering, University of Lucknow.
15. Quoted items should be strictly in order of merit with serial number and metric unit otherwise the tenders are liable to be ignored.
16. Conditions regarding validity of tenders, delivery period, payment discount, warrantee and guarantee period, GST, custom duty and insurance etc. should be mentioned clearly. Net prices should be quoted.
17. No sales tax form "CZX" or 'D" etc. for concessional rates shall be provided by the University.
18. Quoted rates should be valid for at least **six months** from the date of opening of tender.
19. Tenders without sample wherever required may not be accepted.
20. In case of imported equipments, commission allowed to agents must be specifically mentioned.
21. The equipments manufactured in China will not be accepted.
22. Free demonstration shall be done in the University premises if required.
23. Insurance during transport shall be done by the suppliers at their own cost.
24. Tenders without mentioned earnest money deposit will not be entertained.
25. Standing of the firm and major supplies carried out in recent past with proof must be attached.
26. In case of dealers, authorized distributors, dealer's certificate from OEM is required
27. Document through bank and advance payment on proforma invoice shall not be accepted.
28. The items and quantity mentioned in bill of quantity against each item will be treated as provisional and it may be changed depending on actual requirement.
29. Payment will be made only after successful installation and commissioning of equipments in the concerned Laboratory and due verification by concerned authority.
30. If the supply is not made within one month, the firm shall be liable to pay a penalty equal to 0.10% of value of purchase order per day. However this can be waved off by the Hon'ble Vice Chancellor under special circumstances. If the firm fails to supply the equipments the earnest money deposit will be forfeited.
31. Deduction of TDS as per Govt. Rules.
32. Tenders will be opened in the presence of Tender Committee and bidders or their authorized representatives who wish to be present on the date of opening.
33. Any dispute will be subject to **Lucknow (U.P.),** Jurisdiction only.
34. Conditional tenders will not be accepted.
35. Authorized signatory has to keep all the original documents at the time of opening of tender.
36. The Vice-Chancellor has the right to accept or reject any or all tenders without assigning any reason.

I/We have read and understood the above conditions and agree to abide by them.

Authorized Signatory & Seal of the Bidder/Proprietor

FACULTY OF ENGINEERING

UNIVERSITY OF LUCKNOW

Second Campus, Jankipuram, Lucknow-226031 (U.P.)

TENDER BID-I (Technical)

Tender	**Purchase and Commissioning of Equipments for Mechanical Engineering Laboratories**
Package No.	
Name of the firm with full address and contact number	
For	Faculty of Engineering, University of Lucknow, Second Campus, Jankipuram, Lucknow-226031 (U.P.)
Cost of Tender Document	DD No: Amount: Bank: Date: Drawn in favour of Finance Officer, University of Lucknow, payable at Luckow (U.P.).
Earnest Money Deposit	DD No: Amount: Bank: Date: Drawn in favour of Finance Officer, University of Lucknow, payable at Luckow (U.P.).
PAN/GST No	PAN GST (Attach proof)
Income Tax Return of last three years	Attach Copy
Original Equipment Manufacturers/Authorization Letter from O.E.M.	Attach proof
Turnover in the last three years	Attach proof
Details of Similar Work Executed during last Three years in academic institutions	Attach proof
Place of Tender Submission	Proctor Office, University of Lucknow, Old Campus, Lucknow- 226 007 (U.P.)
Last Date of Tender Submission	Date:- 20.06.2019 Time:- 02.00 PM
Place of Tender Opening	Registrar Office, Committee Room, Lucknow University (Old Campus), Lucknow.
Opening of Tender	Date:- 22.06.2019 Time:- 02.00 PM

Signature and Seal of Bidders

TENDER BID-II (Financial)

Package-FOE/ME/01: Manufacturing Science & Engineering Laboratory - II

Tender Cost: Rs. 1000/-+ Rs. 180 GST **EMD: Rs. 30,000=00**

Bill of Quantity

S. No.	Equipment/Item Name	Specification/ experiment	Qty.	Unit Cost	Total Cost
1.	Hydraulic Press (Manual) complete setup	H- Frame, Hydraulic Press General Purpose with Manual, Capacity : 30 Ton	01		
2.	Sieve Shaker	With different grade brass frame sieve designed to carry up to 7 sieves of 8 inch dia. Driven by 1/4 HP electric motor, through reduction gear. The tapping motion from top. To work on 220/230 Volts Single Phase A.C.	01		
3.	Universal Milling Machine Knee Type : With all electrical accessories: coolant system, machine lamp, operation and maintenance manual With accessories: Universal dividing head, Arbors (22,25,27,32 mm size), Side and face cutter size 125 x 32 bore dia., Swivel base machine vice 160mm, Universal milling attachment	Distance from Spindle to Table (mm) : 0-320 Cooling pump motor : 90W Feed motor : 750 W Speed range (rpm) : 580-1800 Motor : 4 kW Table Size (mm) : 360 x 1370	01 01 01 each 01 01 01		
4.	Shaper Machine With Shaper machine vice size 150mm with complete electrical accessories and operation and maintenance manual	Ram Stroke Length : 450mm Max. Swivel of Tool Head: +/- 60° Motor: 2 HP	01		

5.	Surface Grinding machine with Magnetic Chuck: 200 x 600mm with all electrical accessories and tool kit Complete with grinding wheel, operation and maintenance manual	Size: 250X500 mm Capacity :1 hp Table clamping area (mm): 600x200 Grinding wheel size (ODxWxID)mm :250x20x76.2 Wheel speed rpm:3220, 2440 Grinding wheel motor kW : 2.2 Max. Traverse - Long / Cross / Vertical mm : 630 / 230 / 360 X,Y Direction	01		
6.	Tool and Cutter Grinder	Fabricated body : Cast Iron (Grade 25) and Steel Job holding stations : 2 Station no. 1: Abrasivity bit Station no. 2: Hardness bit and abrasivity pin Rotating device : Semi-Circle for Station 1 Mini Chuck: Ø5mm to Ø15mm Grinding finish: 0.03µ or better Grinding Wheel with adopter Bit holder with 180 ° rotation drive to form 10 – 20 mm radius Motor to drive wheel: Induction motor 0.7 kW or better	01		
7.	Pedestal Grinder	Vitrified Bond: 200-250x20-25x30-35 mm Wheel Centre distance: 600 to 650mm Base to Centre line of spindle :850 to 900 mm Vitrified Bond- Motor power: 2 HP Speed of motor (rpm): 2500-3000 Overall length (Max):750 mm Overall breadth (Max): 750	01		

		mm Overall height (Max): 1500 mm Other feature: 1-The entire body should be single piece casted 2-Double end with vitrified bond grinding wheel 3-Safety wheel guard is required 4-Rigid tool rest at both side of wheel 5-Extra vitrified bond wheels – Aluminum Oxide and Silicon Carbide grinding wheels (5Nos.)			

TENDER BID-II (Financial)

Package-FOE/ME/02: HEAT & MASS TRANSFER LABORATORY

Tender Cost: Rs. 1000/-+ Rs. 180 GST EMD: Rs. 4,000=00

Bill of Quantity

S. No.	Equipment/Item Name	Specification/ experiment	Qty.	Unit Cost	Total Cost
1	Heat Transfer Through Composite Cylinder Apparatus.	With Digital Temperature Indicator Objective- To determine radial temperature distribution	01		
2	Heat Transfer Through Composite Wall Apparatus	With Digital Temperature Indicator Objective- To determine temperature distribution in walls	01		
3	Heat Transfer Through a Pin-Fin (Natural and Forced)	Manometer and With Digital Temperature indicator Objective- To determine temperature distribution along the fin	01		
4	Parallel and Counter Flow Heat Exchanger Apparatus	With 10 liters capacity Gyser and Digital Temperature indicator	01		
5	Heat Pipe Apparatus	With Digital Temperature Indicator Objective:-To determine the axial heat flux in a heat pipe using water as the working fluid with that of a solid copper with different temperatures	01		
6	Experiment on Stefan's Law	With Digital Temperature Indicator Objective:-To determine the Stefan Boltzman's constant	01		
7	Critical Heat Flux Experiment	Objectives 1. To observe the formation of pool boiling and 2. To draw the graph of q Vs ΔT upto Burnout (Critical) condition	01		

TENDER BID-II (Financial)

Package-FOE/ME/03 : Fluid Machinery Laboratory

Tender Cost: Rs. 1000/-+ Rs. 180 GST EMD: Rs. 4,000=00

Bill of Quantity

S. No.	Equipment/Item Name	Specification/ experiment	Qty.	Unit Cost	Total Cost
1.	Reciprocating Pump Test Rig	Pump: Double acting reciprocating pump of size 25 x 20mm with air vessel to discharge about 20LPM at 20 meters total head. Motor: 1Hp, 1400RPM, Single phase, 200/220V, AC supply. Speed Variation: Stepped pulley reduction "V" belt drive to run the pump at 3 different speeds. Electrical Panel: Switch and Energy meter for the measurement of power input. Sump Tank : M.S. Powder Coating/M.S. FRP Lining/S.S Unit of suitable size to store sufficient water for independent circulation through the unit. Measuring Tank : M.S. Powder Coating/M.S.FRP Lining/S.S Unit suitable size capacity provided with standard fittings for measuring discharge of water. Others : Piping system consisting of Pipes, Pressure relief valve, Gate valve and fitting with Pressure gauge.	01		
2.	Models of Different Impellers Of Pumps (Forward,	-	01 each		

	Backward and Radial)				
3.	Closed Circuit Hydraulic Ram Test Rig Hydraulic Ram	**Hydraulic Ram :** Hydraulic Ram of size 50 x 15m to work against a delivery head up to 20m from a supply head of 2.5metres to discharge about 250LPH at 10m head. **Supply Tank :** M.S Powder Coating/M.S FRP Lining/S.S Unit tank of suitable size with over flow arrangement for supply of water at constant head of 2.5 meters. **Supply &Delivery Pipings :** Supply pipe of size 50mm & 6 meter length connecting supply tank & Hydraulic Ram and delivery pipe of Â½ " size to deliver useful water from Hydraulic Ram to measuring tank. **Measuring Tank :** M.S Powder Coating/M.S. FRP Lining/ S.S Unit of suitable size provided with standard fittings for measuring of useful water. **Notch Tank :** M.S. Unit with FRP Lining/S.S Unit with a brass Notch plate and hook gauge for measurement of waste water. **Sump Tank :** M.S. Unit with FRP Lining/S.S Unit of suitable size for independent circulation of water through the unit. **Supply Pump Set :** 0.5HP, Single phase to supply water from the sump to the supply tank.	01		

TENDER BID-II (Financial)

Package-FOE/ME/04 : I. C. Engines Laboratory

Tender Cost: Rs. 1000/-+ Rs. 180 GST EMD: Rs. 26,000=00

Bill of Quantity

S. No.	Equipment/Item Name	Specification/ experiment	Qty.	Unit Cost	Total Cost
1.	Four Stroke Four Cylinder Petrol Engine Test Rig With Morse Test and with (Electrical/Eddy current Dynamometer)	The equipment should be instrumented so that the following experiments could be performed. **1).** Bhp Measurement **2).** Ihp Measurement (By Morse Test Arrangement) **3).** Fuel Consumption Measuement **4).** Air Intake Measurement **5).** Measurement Of Heat Rejected To Water Jacket **6).** Heat Balance Test	01		
2.	Single Cylinder Four Stroke Diesel Engine Test Rig with (Electrical/Eddy current Dynamometer)	**Introduction** The test rig is designed to provide self-contained facility for teaching Compression Ignition engine principles. The equipment is instrumented so that the following experiments could be performed. **1).** Bhp Measurement **2).** Brake Thermal Efficiency **3).** Fuel Consumption Measuement **4).** Air Intake Measurement **The engine test rig facilitate to evaluate the following:** **1).** Heat Balance Sheet. **2).** BHP Measurement from no load to full load.	01		
3	Two Stage Reciprocating Air Compressor Test rig	Phase 3 Voltage 415 V Motor Power 2 W Pressure 10 Mpa Flow Measurementusing orifice & Air tankSpeed 1500 RPM	01		
4	Exhaust Gas Analyser (5 Gas – CO CO_2 HC NOx O_2)	Measuring range CO 0-----10% CO2 0-----20% HC 0------20,000ppm vol NO 0-------5000ppm vol O2 0------22% Resolution	01		

		CO 0.01% Vol CO2 0.1% Vol HC ≤2000:1 ppm vol, >2000: 10 ppm vol NO 1 ppm vol O2 0.01% Vol			
5	Cut section model of four stroke diesel engine	Stationary Single Cylinder	01		

TENDER BID-II (Financial)

Package-FOE/ME/05 : THEORY OF MACHINES LABORATORY

Tender Cost: Rs. 1000/-+ Rs. 180 GST EMD: Rs. 3,000=00

Bill of Quantity

S. No.	Equipment/Item Name	Specification/ experiment	Qty.	Unit Cost	Total Cost
1	Simple Linkage models /mechanisms	Epoxy fiber and metallic linkage	01		
2	Four Bar Linkage	Epoxy fiber and metallic linkage	01		
3	Slider Crank Mechanisms	Epoxy fiber and metallic linkage	01		
4	Gear Tooth form/profile apparatus	Bench mounted	01		
5	Gear Train	Metallic	01		
6	Dead Weight type Governor	Metallic	01		
7	Spring Controlled Governor	Metallic	01		
8	Gyroscope	Maximum 6000 rpm,angular movement 360 degree	01		
9	Free and Forced Vibration Apparatus	• Demonstration of basic fundamentals of mechanical vibration theory • Free vibrations • Damped vibrations • Inertia force and displacement excitation • Forced vibrations • Resonance • Amplitude response and phase response	01		