



## **DOON UNIVERSITY**

**Mothrowala Road, Kedarpur, Dehradun**

**Ph. 0135-2533105**

### **SHORT TENDER NOTICE**

**05/DU/2015**

Doon University invites sealed quotation in two bid form for the supply & installation of Modular lab furniture for Chemistry & Physics labs.

Tender documents can be obtained from Doon University on payment of ₹ 1135/- (inclusive taxes). The Tender documents may also be downloaded from Doon University website [www.doonuniversity.org](http://www.doonuniversity.org) and submitted along with a demand draft of ₹ 1135/- and ₹ 80000/- as EMD in favor of Doon University, Dehradun. The Tender bid must reach on or before 30.06.15 by 12:00 hrs which will be opened on the same day at 15:30 hrs in presence of the tenders or their representatives.

Registrar



# दून विश्वविद्यालय DOON UNIVERSITY

मोथरोवाला रोड, केदारपुर, पो.ओ. अजबपुर,  
देहरादून-248001 (उत्तराखण्ड) भारत

Mothrowala Road, Kedarpur, P.O. Ajabpur,  
Dehradun - 248001 (Uttarakhand) INDIA

From: (Name & Full address of the firm):

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.....

To,

The Store & Purchase Officer  
Doon University  
Dehradun-248001

Dear Sir,

Please refer to the advertisement for supply of Modular lab furniture for Doon University.

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**Necessary particulars regarding our credential are given below:-**

1. Full name & address of the firm .....
2. Telephone/Mobile & Fax No .....
3. E-mail ID .....
4. Status (Whether manufacturer/sole Distributors/authorized agent of stockiest of the item) send a copy of competent authority .....
5. Value of stock generally held at a time .....
6. Size and location of stores .....
7. Reference alongwith value of the order placed by other Govt/Semi Gove dept .....
8. Sales tax No (Attach copy) .....
9. Income tax No (Attach copy) .....
10. Please indicate if you are associated with any other concern if so the name of the concerned firm may be mentioned .....
11. Please certify that affidavit on Rs 10/- Stamp paper, you have not been blacklisted by any department of Central/State Govt/Doon University for last five years .....
12. **Other Terms & Conditions for applying:-**
  - (i) PAN/TIN No of the firm is mandatory.
  - (ii) Minimum 5 years experience in the field of Furniture.
  - (iii) Attach copy of Supply order from various Universities/ Government Institutions.
  - (iv) The firm/company must be ISO 9000 certified. (attach copy of certificate)

13. Minimum turnover of ₹ 02 crore for last three year. (Enclose previous audited balance sheet).
14. ₹ 80,000/- as EMD in the form of Bank Demand Draft of .....vide No.....dated.....payable at Dehradun drawn in favor of Doon University, Dehradun is enclosed herewith.

We certify that all the information given above are correct and we will be responsible for all damages caused to University due to false information. The necessary certificate of the manufacturer certifying as to this firm being the sole distributor/manufacture is enclosed herewith in original.

Yours faithfully,

Encls : As above



## DOON UNIVERSITY, DEHRADUN

### **MODULAR LABORATORY FURNITURE SPECIFICATIONS**

#### **WORK TOP:**

Made of (17 to 19mm) thick Jet Black Granite (Physics Labs) & Ceramic worktop (Chemistry Labs) with Chamfer moulding at the front & groove at the bottom to avoid chemical spillage on the modules.

**Material of construction:** Completely made of 1 mm GI sheets only.

**Module:** Completely made of 1 mm GI sheets as per IS 277 standard. CRCA type not acceptable. The shutter & drawer front should be of sandwich construction. Foam sheet filled in shutter gaps is not allowed. The sound deafening plastic bumpers to be used to minimize banging noise while closing the shutter. The entire module is made up of GI panels and is bolted for high corrosion resistance. Welding of modules is not acceptable. The shutters are mounted to the modules by hinges which are openable to 95 degree & self closing on return. Lockable roller bearing must used so that the drawer will not fall. The telescopic drawer slides which should be very sturdy & able to take load upto 30 kg. All modules to have lock and dual key arrangement. The lock ring should be plastic & not metal.

Length : 450mm / 600mm / 750mm / 900mm (L) (As per layout)  
Depth : 570mm (D) (As Per Layout)  
Height : 675 mm (H) Standing Height (As Per Layout)  
Height : 525 mm (H) Sitting Height (As Per Layout)

The offer should be strictly on the basis of layout given in the tender. The vendor should visit the site to understand the final requirement.

**Module Bottom Frame:** Pedestal type. Made of E.R.W.M.S. square Tubes 30x30mm thick & angles 25x25mm thick welded & finished with epoxy powder coating.

**Knee Space area:** Foot rest with openable back cover panel. It must be adjustable. Instrumentation and Sitting area knee space need to be 600 or 750 mm.

**Reagent Rack:** Centre Island Table: Two tier Reagent Rack shelf, top & bottom rack will be of 300mm clear space & outer 380mm  
(Chemistry Labs) The Electrical Switch/Socket will be on Reagent Racks for Chemistry labs

**Electrical Trunkings:** Triangular Electrical trunkings of 200mmD x 120mmH should be there for Physics Labs

**Utility fittings:** Provision of 2 way utility taps for gas should be there on each centre/island table from gas cylinders bank (two numbers) for chemistry labs

**Switch & Sockets:** North-West / Norisys make: Electrical Socket with Piano switch 5/15amp with wiring

**Wiring:-** The whole internal wiring in furniture & Fume hood which is to be used will be in vendors scope.

**Powder Coating:** Complete module & frame work are processed with 8 tank pre- treatment and finished with highly corrosion resistant 'Akzonbel/PolyBond/Equivalent' epoxy powder coating With 70 - 80 microns thickness and 1000 hours salt spray test passed.

**HARDWARE FITTINGS:**

- A) Hinges :- 'Hafele' Make CED coated self closing.
- B) Handle :- S.S. 304 matt finish.
- C) Screw :- All S.S. 304 Visible Screws.
- D) Lock :- 'Hafele' Lock with plastic ring and a pair of keys.
- E) Utility Taps:- Epoxy powder coated brass taps with DIN 12920 colour coding.
- F) Peg Board:- Acrylic support Peg Board 750mm x 750mm with 30 PP pegs with SS collection tray.

**FUME HOOD FOR CHEMISTRY LAB**

<b>Model:</b>	<b>ST1200-ABP-EDUCATIONAL</b>
Overall Dimensions with base cabinet:	1200 mm W X 900 mm D X 2400 mm H
Fume Hood dimensions:	1200 mm W X 900 mm D X 1700 mm H
Base Cabinet dimensions:	1200 mm W X 640 mm D X 700 mm H
Inside Fume Hood working volume:	1150 mm W X 650 mm D X 1155 mm H
Bed size:	1150 mm W X 650 mm D
Height of worktop from Ground level:	850 mm
<b>Quantity:</b>	<b>1 No.</b>

Sr. No	Specification	Description
1	Model and usage	"Optima" fume hood for low duty usage
2	Design Basis	<b>American Design Standard: ASHRAE11- 1995</b> All tests including "Tracer gas containment test" passed. <b>European Design Standard: EN-14175- 2003 'Inner Plane Containment test' passed.</b>
3	Design Structure	Aerodynamic, Floor mounted
4	Airflow Type	<b>Auto Bypass Type</b>
5	Color Combination	Grey & White
6	Powder coating	Pre-treated with 8 tank chemical processes and powder coated with highly chemical resistant epoxy Colors having dry film thickness of 70 to 80 microns. Passes all conformity performance tests as per IS standards.
7	Material of Construction of superstructure	Galvanized Iron (GI) as per IS 277: 2003 standard of <ul style="list-style-type: none"> <li>• 1.0 mm thickness for all sheet metal paneling</li> <li>• 1.5 mm for corner post</li> <li>• 1.2 mm for back pillars</li> </ul>

8	Front Top Panel	Easily open able Top Panel for easy access to Flow Control Valve and Electrical Lighting fixtures for maintenance.
9	Corner Post	Triangular profiled Corner Post is placed on Left and Right Hand Side of the Fume hood and it houses the utility line fittings and electrical receptacles.
10	Construction	Chemical & Heat Resistant, Fire Retardant, Smooth Finish, Easily Cleanable Panels Made out of durable PRL integral work walls (6 mm thick). ASTM flame spread index < 25, fixed in epoxy Power Coated aluminum frame work.
11	Active Kinetics exhaust system	<u>Interstitial</u> 7-point active kinetics exhausts system (for light, normal & heavy fumes) with baffle to ensure rapid exhaust of fumes.
12	Airfoil	Aerodynamic Design, Horizontal fixed airfoil mounted on the worktop made of SS 304 (1.2mm).
13	Worktop	Chemical resistant splash & spillage proof dished ' <b>Jet Black Granite</b> ' worktop (18 ±1 mm thick). Skirting of 15 mm from all sides for no chemical spillage.
14	Sink, Water tap with drain arrangement	Worktop will have sink sealed with silicon sealant for drainage with water tap on left front side of worktop. <ul style="list-style-type: none"> <li>• Oval shaped 100 mm X 200 mm sink</li> </ul>
15	Sash (Shutter)	Vertical rising sash counter-balanced with pulley and counter-weight system. Toughened Float Glass sash (4 mm thick). Smooth and light sash operation. Clear openable height = 750 mm. Impact Resistance of the sash (Toughened Glass) is four times higher than other sash materials (like Safety Glass and Polycarbonate). Breaking Stress value for fully toughened glass (Tempered Glass) = 24,000 psi.
16	Wet & Dry Service valves	Remotely operated Color coded <b>Brass Needle Valves</b> for fine control over utilities (as per DIN 12920 norms) <b>total 3 nos.</b> service valves with PU plumbing with 6 mm internal dia, withstands up to 15 kgf pressure <b>(All LHS)</b> <ul style="list-style-type: none"> <li>• 1 for Raw water (PU)</li> <li>• 1 for Nitrogen (PU)</li> <li>• 1 for Vacuum (Teflon)</li> </ul>
17	Internal nozzles	Brass powder coated fittings. Also the taps are tapered in shape to use with flexible tubing of sizes from ¼" to ½" in dia, to provide greater flexibility to the user. Note: - Our Scope of supply for utility lines ends at 1/4 <sup>th</sup> BSP male adopter.
18	Lighting	Fluorescent light (20 watt, 2 Nos.) with vapour-proof fitting 1 No. for proper illumination. Intensity approx 400 lux at worktop level.
19	Electrical Utilities	<b>2 nos.</b> electrical sockets 'NorthWest' make (230 V, 6/16 A, 50 Hz), <b>2 nos.</b> 'NorthWest' make MCBs with blower NO/NC switch with built -in starter & light switch on front fascia. Cables & wires ' <b>Fire Retardant</b> ' grade. <b>(All RHS)</b>
20	Built-in Starter	The electrical wiring will have built-in starter of "Telemechanique" make; suitable to blower motor capacity.

21	Cable entering port	For easy access of cables from fume hood to electrical sockets.
22	Apparatus Storage Base Cabinet <i>(To be ordered separately if required)</i>	<p>Base cabinet will be ready to receive the fume hood at its top. It will have following features:</p> <ul style="list-style-type: none"> <li>• Complete rigid steel structure to support Fume hood</li> <li>• Epoxy powder coated attractive Color combination rigid structure</li> <li>• One horizontal partitions to store apparatus</li> <li>• Double skin hinged doors with hinges made of Polyamide for Chemical resistance and hassle free operations in the corrosive lab atmosphere.</li> <li>• Fully openable back panels for service line access</li> <li>• Latching System for the Base Cabinet doors are "HAFELE"-Germany" Make.</li> </ul> <p>Overall Dimensions: 1200mm (W) X 640mm (D) X 700mm (H)</p>
23	Chemical Storage Base Cabinet	<p>Base cabinet will be ready to receive the fume hood at its top. It will have following features:</p> <ul style="list-style-type: none"> <li>• Internal special chemical resistant material PRL lining to the cabinet walls.</li> <li>• Two exhaust ports connected to the fume hood exhaust system internally.</li> <li>• Complete powder coated attractive Color combination rigid structure to support Fume hood.</li> <li>• One removable horizontal partition to store chemicals.</li> <li>• Double skin hinged doors with hinges made of Polyamide for Chemical resistance and hassle free operations in the corrosive lab atmosphere.</li> <li>• PP Trays for chemical storage</li> <li>• Latching System for the Base Cabinet doors are "HAFELE"-Germany" Make.</li> </ul> <p>Overall Dimensions: 1200mm (W) X 640mm (D) X 700mm (H)</p>
24	Apparatus Holding Grid <i>(To be ordered separately if required)</i>	A grid made up of <b>Duralumin Powder coated rod</b> (Dia. 12.7 mm) to hold the apparatus. It will cover the entire length of the fume hood and will be built-in at fume hood backside. Installed at the distance of 150 mm from backside of fume hood.
25	Air Flow Monitor <i>(To be ordered separately if required)</i>	'Proactive AFM' model 1000'. This device is an accessory for Fume hood to indicate the approximate face velocity of airflow with primary purpose of warning when a low flow condition occurs. Red & green LEDs correspond to low & normal flow rates. When flow decreases from Normal to Low, an audible alarm will also actuate requiring manual acknowledgement for silence.
26	Level adjusting screws	Made of SS Bolts to adjust the fume hood level by $\pm 10$ mm.
27	Exhaust Port	Unique exhaust port design ensures that the fumes will be exhausted smoothly without any turbulence at the exhaust port. Also it ensures low noise level. Dia. 200 mm

28	Flow control valve	To regulate airflow.
29	Noise Level	< 70db at 1 meter from fume hood.

**CENTRIFUGAL BLOWER: (For air suction in Fume Hood) Qty. 1 No.**

Silent PP + FRP high efficiency remote blower, consisting of continuous rating motor and chemical resistant impeller it satisfies international safe velocity norms.

Sr. No	Specification	Description
1	Construction	SISW type, chemical & heat resistant PP + FRP blower with aerodynamically balanced PP impeller, with drain plug.
2	Air Suction Capacity	450 CFM confirming to international face velocity norms and as per safe fume hood airflow pattern.
3	Motor	'Crompton / LHP/Other Reputed' make, <b>1 HP Motor</b> 3 Phase TEFC, IP 55, Class F, continuous rating. As per IS 325.
4	Drive	Direct Drive

**DUCTING:**

Chemical resistant PP + FRP (3mm + 2mm) rigid & flexible ductwork from Fume hood to exhaust stack point with weatherproof canopy. Total ducting with horizontal, vertical members, flanges, bends, bracketed supports and gooseneck exhaust stack. **Ducting quantity is measured in square feet. Billing will be done at actual measurement.**

**TESTING:**

All fume hoods are "factory tested" as per **ASHRAE 110:1995** face velocity norms. Also, "Onsite validation" will be carried out to ensure working of fume hood as per international norms. "Tracer Gas containment testing" can be carried out only in our factory at extra cost.



## **Pre-Qualification Criteria**

1. At least 2 Customer feedback forms stating the quality of work and overall feedback of Project Values of at least Rs. 50 Lakhs for one project.
2. Bidder/ parent company should have SEFA Membership Certificates for Last three years on a continuous basis.  
The Bidder should have third party test report of ASHRAE & EN for fume hood
3. Additional Certificates to be submitted by the bidder/parent company:
  - A). ISO 9001-2008 (For Manufacturing, Supply and installation of fume hood systems, Equipment's & Laboratory Furniture)
  - B). OHSAS 18001:2007 (For Design, Manufacturing, Supply and Installation of Fume Hood Systems, Equipment's and Laboratory Furniture)
  - C). ISO 14001:2004 (For Design, Manufacturing, Supply and Installation of Fume Hood Systems, Equipment's & Laboratory furniture)
4. The bidder or its parent company in India or abroad should have a well-established (their own) in house manufacturing unit for the steel lab furniture and fume hood, quality management system as per International standards providing the products and services on the continuous basis at least for the last 7 years. Manufacturers should have 100% modern and sophisticated manufacturing facility having strict quality checks at every level.
5. 1000 hour salt spray test report (by third party) for powder coating quality assurance also must be attached to the technical bid. Test Report of Salt Spray to be attached.
6. MOC of Lab furniture & Fume Hood should be of GI (Galvanized Iron) sheets only, 1-1.3mm.  
. Bidder / parent company will have to submit a "No Deviation" compliance sheet, any deviation from the technical specification will lead to cancelation.
7. The turnover of the Company should be at least 02 Crores or above for the last 3 years.
8. The warranty of the Lab Furniture & Fume hood should be 1 year from the date of installation.  
Separate AMC for Lab Furniture & Fume hood should be submitted with the final commercial offer.

CHORDAL PROGRESSION

Musical notation for the first chordal progression exercise, showing a sequence of chords on a grand staff with a treble clef and a 2/4 time signature.

Musical notation for the second chordal progression exercise, showing a sequence of chords on a grand staff with a treble clef and a 2/4 time signature.

Musical notation for the third chordal progression exercise, showing a sequence of chords on a grand staff with a treble clef and a 2/4 time signature.

CHORDAL PROGRESSION

Musical notation for the first chordal progression exercise in the second column, showing a sequence of chords on a grand staff with a treble clef and a 2/4 time signature.

Musical notation for the second chordal progression exercise in the second column, showing a sequence of chords on a grand staff with a treble clef and a 2/4 time signature.

Musical notation for the third chordal progression exercise in the second column, showing a sequence of chords on a grand staff with a treble clef and a 2/4 time signature.

CHORDAL PROGRESSION

Musical notation for the first chordal progression exercise in the third column, showing a sequence of chords on a grand staff with a treble clef and a 2/4 time signature.

Musical notation for the second chordal progression exercise in the third column, showing a sequence of chords on a grand staff with a treble clef and a 2/4 time signature.

Musical notation for the third chordal progression exercise in the third column, showing a sequence of chords on a grand staff with a treble clef and a 2/4 time signature.

CHORDAL PROGRESSION

Musical notation for the first chordal progression exercise in the fourth column, showing a sequence of chords on a grand staff with a treble clef and a 2/4 time signature.

Musical notation for the second chordal progression exercise in the fourth column, showing a sequence of chords on a grand staff with a treble clef and a 2/4 time signature.

Musical notation for the third chordal progression exercise in the fourth column, showing a sequence of chords on a grand staff with a treble clef and a 2/4 time signature.