Shri Vishwakarma Skill University

(Established Under Government of Haryana Act No.25 of 2016)

Expression of Interest for the Empanelment of Institutions for Providing Labs/Workshop Facilities

Tender Enquiry No.HVSU/2018/ASC/06 **Dated: 03/01-2019**

Shri Vishwakarma Skill University, Dudhola, Palwal

Plot No. 147, Sector 44, Gurugram (Transit Office)

Expression of Interest for the Empanelment of Institutions for Providing Labs/Workshop Facilities

In line with the vision of a Skill India, Government of Haryana had established Shri Vishwakarma Skill University (SVSU), first of its kind, in 2016. The permanent campus of University will set up at village Dudhola in district Palwal, Haryana. The University is aimed at providing structured skill qualification programmes, aligned with existing and emerging job roles in the industry and other sectors. The programmes will be mapped with National Skills Qualifications Framework (NSQF) that will facilitate upward mobility of the students from Certification to Doctoral level. The University is being built on 82.7 acres of land with a state-of-the-art infrastructure, having capacity to train 12,000 students per year, as part of its Master Plan. The University is running various courses under its Dual Education out campus model from its transit campus located in Plot No 147, Sector 44 Gurugram.

Shri Vishwakarma Skill University(SVSU), invites sealed bids under two bid systems (Technical bid and Financial Bid) from reputed Bidders (University/College/Training Institute) for providing lab/Workshop facilities for our different vocational programs running on dual education model as per specifications given in the EOI. Sealed envelope should reach the office of **Registrar, SVSU, Plot No 147, Sector 44, Gurugram, Haryana by 19.01.2019 (Upto 5.00 PM).** Bids received by the due time/date shall be opened on **15.01.2019 (11.00 AM)** in the presence of intended parties/their representatives who may like to be present at that time. The financial bids will be opened on **21.01.2019 (04.00 PM)**

The institute/Training Centre must be located at Gurugram/ Faridabad/Rewari/ New Delhi or Noida.

Terms and conditions for Entering into Annual Rate Contract for Providing the Labs/ Workshop

1. **Criteria & Terms and Conditions:** As given in Annexure – A
2. **General Information of Bidder:** As given in Annexure – B
3. **Technical Information of Bidder:** As given in Annexure – C
4. **List of Labs/Workshop proposed: to be covered under rate Contract (Financial Bid)** As given in Annexure -D
5. **Validity of Rate Contract:** For 1 Year

Annexure – A

A. Criteria for Providing the Labs/ Workshops

1. The party willing to provide labs must have proper lab facilities (desired experiments/Practical's) so as to accommodate minimum 30 Students at one time.

2. The offers of those firms who do not submit proper documents in support of their labs will not be considered.

3. Preference will be given to institutes located in nearby vicinity of The University.

4. Only those firms which qualify in technical bid will be eligible for opening/consideration of financial Bid.

B. **Terms and conditions**.

1. The labs/workshop requirements received will be inspected/verified as per Specification, quality & quantity by the SVSU team.

2. SVSU also reserves the rights to accept or reject any labs/workshop requirement without assigning any reason whatsoever.

3. Bidder shall disclose their facilities as per enclosed list, which this University intends to have on a requirement basis.

4. The contract term will be for 1 year & may be extended for maximum two more years on the basis of satisfactory performance.

5. The list of labs//workshop is given in Annexure- C

6. Only the net rates i.e. inclusive of all applicable taxes like GST etc. to be Levied should be quoted against each lab/workshop in the space provided for clear comparison. Tenders showing any taxes & discounts against the rates of items will not be considered, as the University wants net rates inclusive of all taxes.

7. All deductions shall be applicable as per the income tax laws on all the disbursements/payments.

8. The requirements of labs/workshops, shall vary as per the semester time table and will be communicated in advance. The bidder will be liable to provide desired facilities, as and when required.

9. Bidders are advised to furnish details such as GST NO. & PAN NO. whichever applicable.

10. In support of the credentials submitted by the parties, Shri Vishwakarma Skill University reserves the right to seek/authenticate/vet information from the bidders by telephonic verification/personal visits/writing.

11. The committee shall prepare a list of bidders based on technical and financial bid in a given

preference order, which shall be referred to as List of Empaneled bidders for Providing Labs/Workshop Facilities.

12. Financial bid will be opened only for those bidders whose Technical bids are qualified as per the requirements of University.

13. Documents submitted should be duly signed & stamped (seal where ever required)

14. The scope of the experiments may be changed at any point of time as per the requirement of the course which will be communicated accordingly.

13. Documents to be included: -

(a) Copy of letter of approval/affiliation

(b) PAN No./GST No.

(c) ISO/NABL Certificate (If any)

(d) Documents in support of all declarations

ANNEXURE- B

GENERAL INFORMATION OF THE BIDDER

1. Name of the Bidder :

2. Type : (a) University/College/Training Institute

(b) Govt./Non Govt. /Undertaking /Private/Trust

3. Name of Approving body (if applicable) : UGC/AICTE/DTE/SDIT/Any other (Specify)

2. Office Address :

3. Location of Lab/Workshop :

4. Name of Nodal person :

5. Mobile Number of Nodal person :

6. E-Mail Address :

7. Registration/ license No. :

8. GST No. :

9. List of Institute/Organization to whom the bidder has provided similar services/facilities during one year (If applicable): :

10. Type of Courses offered by the institute with annual intake:

S. No.	Name of Course (B.E/B.Tech/PG Diploma/Diploma/ITI/Certificate, or any other)	Name of Branch/Trade (i.e. Mechanical Engineering/ Machinist/ B.Sc.)	Annual Intake
1			
2			
3			
4			

Seal and Signature of Bidder

ANNEXURE- C

TECHNICAL INFORMATION OF THE BIDDER

1. Name of the Bidder :

2. Office Address :

3. Location of Lab/Workshop :

4. Name of Nodal person :

5. Mobile Number of Nodal person :

6. E-Mail Address :

7. Registration/ license No. :

8. Proper lab facilities (desired experiments/Practical's) as to accommodate minimum 30 Students at one time **YES/NO**

9. Whether services have been provided in past in this context **YES/NO**

10. Whether able to provide labs/workshop as per requirement from time to time **YES/NO**

11. Mark your answer as for availability of labs/workshop (in table given below) **YES/NO**

Department	**Labs/ Workshop**	**Availability**
Applied Science	1. Applied Physics Lab 2. Chemistry Lab	
Mechanical Engineering	1. Workshop (Lathe, Milling, Drilling, Grinding, Fitting, welding (Arc, MIG, TIG, gas welding) 2. Manufacturing Technology Lab (CNC based) 3. CAD Lab (AutoCAD, Solid works, Unigraphics, Catia)	
Electrical Engineering	1. Basics of Electronics Lab 2. Electrical Machine Lab	
Mechatronics	1. Mechatronics Lab 2. PLC & SCADA Lab 3. Micro Controllers & Micro Processor Lab 4. Pneumatics & Hydraulics Lab 5. Sensors & Transducers Lab	
Robotics	1. Fundamental of Robotic System Lab 2. Kinematics & Dynamics of Robot Lab	

For further details regarding labs & practical to be performed, the same is given below.

ANNEXURE- D

TENDER FORM FOR
ENTERING INTO RATE CONTRACT FOR POVIDING LAB/WORKSHOP FACILITIES
(Financial Bid)

S No.	Labs/Workshop	List of Experiments	Cost Per Student Per Hour(Inclusive of cost of man hour, consumables, electricity, etc.)
1.	**Basics of Mechatronics Lab**	1. Introduction to Mechatronic Lab, System & it different Components. 2 To study the Application of Electromagnetic relay (Holding the Push button). 3. Operation of Single acting Cylinder using Pneumatics. 4. Operation of Double acting Cylinder using Pneumatics. 5. Impulse Pilot operation using Double acting Cylinder. 6. Operation of Single Acting Cylinder Using Single Solenoid Valve. 7 Operation of Double Acting Cylinder Using Single Solenoid Valve. 8. Measurement of displacement using LVDT. 9. Measurement of temperature using thermocouple, thermistor and RTD 10 Introduction of PLC (programmable logic controller).	
2.	**Measurement & Metrology Lab**	1. To Study and apply Linear Measuring Instruments for measurement of given specimens (Vernier calipers, scale, measuring tape etc.) 2. To Check bore diameter using bore dial gauge 3. Measurement of Gear parameters using flange micrometer 4. To check pitch of thread using thread gauge: Ring gauge, plug gauge, micrometer etc. 5. To measure intensity of light in a room for different conditions using lux meter and analysis of the result. 6. To study of Radius gauge and Depth gauge, Filler and other similar gauges used in the industry. 7. To check Outer Diameter and Internal Diameters of given components using Air gauges. 8. Measurement of Taper Angle Using Slips, Rollers & Sine bar. 9. Demonstration of Coordinate measuring machine and UTM. 10. To measure total composite error (TCE) and Teeth to Teeth error (TTE) for given gear specimen using gear roll tester/Parkinson gear tester.	
3.	**Basics of Electrical and Electronic Lab**	1. Introduction of tools, symbols and abbreviations. 2. To verify Kirchhoff's current & voltage law. 3. Construction & Working of DOL starter. 4. Construction & Working of Star-Delta starter. 5. Construction & Working of Distribution Board and Extension Board. 6. To perform open circuit test and short circuit test of a single-phase transformer. 7. Draw V-I characteristics of P-N junction diode. 8. Draw input and output characters of a transistor. 9. Draw reverse break down characteristics of a zener diode. 10. Construction & Working of Half Wave & Full Wave rectifier on bread board.	

4.	**Applied Physics Lab**	1. To find the mechanical advantage, velocity ratio and efficiency of a screw jack. 2. To find the mechanical advantage, velocity ratio and efficiency of a worm and worm wheel. 3. To determine force constant of spring using Hooke's law 4. To determine the Moment of Inertia using a Flywheel. 5. To verify the Bernoulli's Theorem. 6. To study the variation of magnetic field with distance and to find the radius of coil by Stewart and Gee's apparatus. 7. To study the characteristics of Cu-Fe thermo couple. 8. To find the value of Planck's constant by using a photo electric cell. 9. To determine the energy gap of a semiconductor diode. 10. Solar Cell: To study the V-I Characteristics of solar cell. 11. Light emitting diode: Plot V-I and P-I characteristics of light emitting diode. 12. Photoelectric effect: To determine work function of a given material. 1. LASER: To study the characteristics of LASER sources. 2. Optical fibre: To determine the bending losses of Optical fibres.	
5.	**Applied Hydraulics & Pneumatics Lab**	1. Flow through pipes 2. Flow through Ventura meter 3. Determination of viscosity by capillary tube viscometer 4. Flow visualization using Reynolds apparatus 5. Study of Counter Balancing Circuit on Hydraulic Trainer 6. Controlling the Speed of the Cylinder Using Metering In and out valve circuit. 7. Single Cycle Automation of Double Acting Cylinder Using Limit Switch. 8. Operation of double acting cylinder using double solenoid valve. 9. Single Cycle Automation of Multiple Cylinders in Sequence (A+B+A-B-). 10. To prepare basic hydraulic and pneumatic circuits in FluidSim.	
6.	**Manufacturing Automation & Ergonomics Lab**	1. Study of Auto flow lines. 2. Study of Numerical control system. 3. Study of Robotics. 4. Study of Automated material handling system. 5. Study of Automated inspection system. 6. Study of Group technology. 7. Study of CAPP systems. 8. Study of Virtual CNC 9. Study of Virtual High Performance Machining System (MACHPRO})	
7.	**CNC Machines Lab**	1. To study G codes and M codes 2. To study NC/CNC machining tools. 3. To familiarize with control panel. 4. To familiarize with different co-ordinate systems. 5. To perform setting and off-setting the component. 6. To learn programming technique such as interpolation, helical and compensation and their application 7. CNC Part programming, sub programming and execution of an operation on milling machine 8. CNC Part programming, sub programming and execution of an operation on drilling machine. 9. CNC Part programming and sub programming on types of pockets 10. Write the NC program for component (dia. - 35mm) to be machined on	

		lathe with step turning to 16mm taking from 25 mm. 11. Write the NC program for component (dia. - 30mm) to be machined on lathe with taper turning to 20 mm followed by 20 mm turning. 12 Write the NC program for rectangular block to be machined on milling for a slot 100mm wide on the periphery of block. 13. Write the NC program for 4 holes to be drilled on 10mm thick plate in symmetry using CNC milling 14. Write NC program with subroutines, Do- loops for component to be machined	
8.	**Workshop Technology – 1**	**Machining** 1. Demonstrate precautions and safety norms as well as DO's and Don't followed in Machine shop 2. To grind a tool on pedestal grinder 3. To prepare job by turning: (Shaft preparation, Thread cutting, Drilling, Taper turning, chamfering). 4. To prepare a job using Drilling machine by Chain drilling 5. Surface mill a job using milling machine and setting of milling cutter. 6. To study air cut time, cutting time and loading and unloading time on a CNC Machine. 7. To study honing, latch setting 8. To create a component which uses aprocess of drilling, milling and grinding **Welding** 1. Demonstrate precautions and safety norms followed in Welding shop 2. Welding practice on different types of welding for making vertical, angular weld beads. **2.** Preparation of butt joint, lap joint (Vertical and angular) by different types of welding0 **3.** Exercise of preparing a job (Vertical and angular) using different types of welding (spot, projection and seam welding), Brazing. **4.** Exercise of preparing a job by using gas cutting **5.** Exercise of preparing a job by using dissimilar metals. Project: To make Table by using the above study welding Practice on making single riveted lap joint/double riveted **Assembly** 1. To perform torqueing on fasteners and its sequence 2. Maintenance of pneumatic / electric/ hydraulic gun 3. To connect and disconnect electrical system and its working 4. To study various fasteners (bolts, washers, circlips etc)used in assembly and understand its differences 5. To assemble and disassemble bearings using pullers, dollies etc. 6. Introduction to Automation in Assembly, Error proofing	
9.	**Material Science Lab**	1. To study crystal structures of a given specimen. 2. To study crystal imperfections in a given specimen. 3. To study microstructures of metals/ alloys. 4. To prepare solidification curve for a given specimen. 5. To study heat treatment processes (hardening and tempering) of steel specimen. 6. To study microstructure of heat-treated steel. 7. To study thermo-setting of plastics. 8. To study the creep behavior of a given specimen. 9. To study the mechanism of chemical corrosion and its protection. 10. To study the properties of various types of plastics. 11. To study Bravais lattices with the help of models. 12. To study crystal structures and crystals imperfections using ball models.	
10	**Internal Combustion Engines Lab**	1. To study two stroke and four stroke petrol and Diesel Engine. 2. Study of diesel fuel pump and diesel fuel injector. 3. Dismantling of motorcycle Engine using general and special servicing	

		tools. 4. Assembly of motorcycle Engine using the required set of tools. 5. Demonstration of assembly/dismantling of scooter engine. 6. Demonstration and study of wheel alignment testing and adjustments. 7. Suspension system testing and adjustments. 8. To find engine parameters on single/multi-cylinder petrol engine/diesel engine by employing various test procedures. 9. To prepare heat balance sheet on multi-cylinder diesel engine/petrol engine.	
11	**Welding Technology II/ CNC Machines II Lab**	**Welding Technology** 1. Create a frame of welded joints for distortion control 2. Create a program for robot welding as per given drawing 3. Create a program for robot welding as per given complex drawing 4. Welding of aluminum pieces together 5. Welding of cast iron pieces together 6. weld stainless pieces together 7. Create a component on the robot welding as per drawing 8. Produce a component by spot welding, projection welding and seam welding 9.Process design for complex welding drawing	
12	**Manufacturing Technology Lab**	1 To calculate the machining time for cylindrical turning on a Lathe and compare with the actual machining time 2 To calculate the machining time for Drilling and compare with the actual machining time 3 To study the Too Life while milling a component on the Milling Machine. 4 To perform cavity forming operation using EDM. 5 To Perform cutting operation using wire cut EDM	
13	**Fundamental of Robotic System Lab**	1. Study of different types of robots based on configuration and application. 2. Study of different type of links and joints used in robots 3. Study of components of robots with drive system and end effectors. 4. Determination of maximum and minimum position of links. 5. Verification of transformation (Position and orientation) with respect to gripper and world coordinate system 6. Estimation of accuracy, repeatability and resolution. 7. Robot programming exercises	
14	**Basics of PLC Lab**	1. Wire up a PLC for the given lamp circuit 2. Design a Ladder logic for the given lamp circuit 3. Design and implement ladder logic for the forward and reverse control of a hydraulic cylinder. 4. Design a ladder diagram for performing the given arithmetic operations. 5. Design a ladder diagram for performing the given application using counters 6. Design a ladder diagram for performing the given application using Timers. 7. Interfacing PLC to HMI- text display. 8. Programming a graphical HMI 9. Networking PLCs- drives and a host computer. 10.Troubleshooting PLCs	
15.	**Chemistry Lab**	1. Determination of strength of given HCl iterating against N/10 NaOH volumetrically. 2. Volumetric analysis and study of apparatus used therein. Simple problems on volumetric analysis equation	

		3. Estimation of total alkalinity of water volumetrically 4. Determine the pH of given sample using pH meter 5. Determination of total, temporary and permanent hardness of given water sample. 6. To determine the flash and fire point of a given lubricating oil. 7. To determine the viscosity of a given lubricating oil by Redwood viscometer. 8. Detection of metal iron in the rust (solution of rust in concentrated HCl may be given) 9. Synthesis of Urea formaldehyde and Bakelite polymer.	

Seal and Signature of Bidder