

UNIVERSITY OF ENGINEERING & TECHNOLOGY, PESHAWAR



STANDARD BIDDING DOCUMENTS

For

ESTABLISHMENT OF STATE-OF-THE-ART LABORATORIES OF CIVIL, ELECTRICAL, MECHANICAL AND INDUSTRIAL ENGINEERING DEPARTMENTS UNDER THE REVISED PROJECT TITLED "JALOZAI CAMPUS OF UNIVERSITY OF ENGINEERING & TECHNOLOGY, PESHAWAR"

<i>Procurement Ref: No.</i>	:	<i>PD/JC/UET 2021</i>
<i>Opening date of Technical Proposals</i>	:	<i>25th Feb 2021 AT 11:00 A.M</i>
<i>Venue</i>	:	<i>Conference Hall, UET Peshawar</i>

(PROJECT DIRECTOR)
JALOZAI CAMPUS, UET, PESHAWAR

Rs.1,000/-

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Instructions to Bidders

A. Introduction

1. Source of Funds	<p>1.1. The Purchaser has received developmental grant from Federal Government through HEC, Islamabad for the project titled “Jalozai Campus of University of Engineering & Technology, Peshawar” from the source(s) indicated in the tender data in various currencies towards the cost of the project /schemes specified in the bid data sheet and it is intended that part of the proceeds of this funds will be applied to eligible payments under the contract for which these tender documents are issued.</p> <p>1.2 The funds referred to above in addition shall be “Public Fund” which according to 2 (l) of KPP Rules 2014 means (i) Provincial Consolidated Fund; (ii) foreign assistance; (iii) all moneys standing in the Public Account; and (iv) Funds of enterprises wholly or partly owned or managed or controlled by Government.</p> <p>1.3 Payment by the Fund will be made only at the request of the Purchaser and upon approval by the Government, and in case of a project will be subject in all respect to the terms and conditions of the agreement. The Project Agreement prohibits a withdrawal from the allocated fund account for the purpose of any payment to persons or entities, or for any import of goods, if such payment or import, to the knowledge of the Federal Government/ Khyber Pakhtunkhwa Government, is prohibited by a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations. No party other than the Procuring agency shall derive any rights from the Project Agreement or have any claim to the allocated fund proceeds.</p>
2. Eligible Bidders	<p>2.1 This Invitation for Bids is open to all suppliers from eligible source as defined in the KPPRA Act, 2012 and its Tender Documents except as provided hereinafter.</p> <p>2.2 Bidders should not be associated, or have been associated in the past, directly or indirectly, with a firm or any of its affiliates which have been engaged by the Procuring agency to provide consulting services for the preparation of the design, specifications, and other documents to be used for the procurement of the goods to be purchased under this Invitation for Bids.</p> <p>2.3 Government-owned enterprises in the Province of Khyber</p>

	<p>Pakhtunkhwa may participate only if they are legally and financially autonomous, if they operate under commercial law, and if they are not a dependent agency of the Government of Khyber Pakhtunkhwa.</p> <p>2.4 Bidders shall not be eligible to bid if they are under a declaration of ineligibility for corrupt and fraudulent practices issued by any government organization in accordance with the Section 44(1) KPP Rules 2014.</p>
<p>3. Eligible Goods and Services</p>	<p>3.1 All goods and related services to be supplied under the contract shall have their origin in eligible source countries of the world with whom the Islamic Republic of Pakistan has commercial relations and its Tender Documents and all expenditures made under the contract will be limited to such goods and services.</p> <p>3.2 For purposes of this clause, “origin” means the place where the goods are mined, grown, or produced, or the place from which the related services are supplied. Goods are produced when, through manufacturing, processing, or substantial and major assembly of components, a commercially-recognized product results that is substantially different in basic characteristics or in purpose or utility from its components.</p> <p>3.3 The origin of goods and services is distinct from the nationality of the Bidder.</p>
<p>4. Cost of Tender</p>	<p>4.1 The Bidder shall bear all costs associated with the preparation and submission of its bid, and the Purchaser named in the Bid Data Sheet, hereinafter referred to as “the Purchaser,” will in no case be responsible or liable for those costs, regardless of the conduct or outcome of the tender process.</p>

B. The Tender Documents

<p>5. Content of Tender Documents</p>	<p>5.1 The goods required, tender procedures and contract terms & conditions are prescribed in the tender documents. In addition to the Invitation for Bids, the tender documents include:</p> <ul style="list-style-type: none"> (a) Instructions to Bidders (ITB) (b) Bid Data Sheet (c) General Conditions of Contract (GCC) (d) Special Conditions of Contract (SCC) (e) Schedule of Requirements (f) Technical Specifications (g) Bid Form and Price Schedules (h) Bid Security Form (i) Contract Form (j) Performance Security Form (k) Letter of authority from Original Equipment Manufacturer (l) Original Equipment Manufacturer qualification statement (m) Agent qualification statement (n) Power of Attorney (o) Reference list of similar installations (p) Integrity pact <p>5.2 The Bidder is expected to examine all instructions, forms, terms, and specifications in the tender documents. Failure to furnish all information required by the tender documents or to submit a bid not substantially responsive to the tender documents in every respect will be at the Bidder's risk and may result in the rejection of its bid.</p>
<p>6. Clarification of Tender Documents</p>	<p>An interested prospective Bidder requiring any clarification of the tender documents may notify the Purchaser in writing at the Purchaser's address indicated in the Bid Data Sheet. The Purchaser will respond in writing to any request for clarification of the tender documents which it receives prior to the deadline for the submission of bids prescribed in ITB Clause 19.1. Written copies of the Purchaser's response (including an explanation of the query but without identifying the source of inquiry) will be sent to all interested bidders that</p>

	have received the tender documents.
7. Amendment of Tender Documents	<p>7.1 At any time prior to the deadline for submission of bids, the Purchaser, for any reason, whether at its own initiative or in response to a clarification requested by a prospective Bidder, may modify the tender documents by amendment.</p> <p>7.2 All prospective bidders that have received the tender documents will be notified of the amendment in writing or by cable, and will be binding on them.</p> <p>7.3 In order to allow prospective bidders reasonable time in which to take the amendment into account in preparing their bids, the Purchaser, at its discretion, may extend the deadline for the submission of bids.</p>

C. Preparation of Bids

8. Language of Bid	8.1 The bid prepared by the Bidder, as well as all correspondence and documents relating to the bid exchanged by the Bidder and the Purchaser, shall be written in the language specified in the Bid Data Sheet. Supporting documents and printed literature furnished by the Bidder may be in another language provided they are accompanied by an accurate translation of the relevant passages in the language specified in the Bid Data Sheet , in which case, for purposes of interpretation of the Bid, the translation shall govern.
9. Documents Constituting the Bid	<p>The bid prepared and submitted in two separate envelopes by the Bidder shall comprise the following components each:-</p> <p>A1. Technical Bid for Import Items</p> <ul style="list-style-type: none"> (i) Letter of Bid (Bid Form) as per Form-1 (ii) Bill of quantities of items with specifications as per Form-2 (iii) Original Equipment Manufacturer's authorization as per Form-3 (iv) Original Equipment Manufacturer qualification statement as per Form-4 (v) Agent qualification statement as per Form-5 (vi) Power of Attorney as per Form-6 (vii) Reference list of similar installations as per Form-7 (viii) Installation/Commissioning/Training Undertaking by the Original Equipment Manufacturer as per Form-8 (ix) Integrity Pact as per form -9 (x) Proof of being active taxpayer with government of Pakistan (xi) Affidavit on stamp paper to the effect that <i>"the requisite Bid Security has been placed separately in the sealed</i>

	<p style="text-align: center;"><i>envelope of financial bid”.</i></p> <p>A2. Technical Bid for Local Purchase</p> <ul style="list-style-type: none"> (i) Letter of Bid (Bid Form) as per Form-1 (ii) Bill of quantities of items with specifications as per Form-2 (iii) Distributor Certificate (v) Agent qualification statement as per Form-5 (vi) Power of Attorney as per Form-6 (vii) Reference list of similar installations as per Form-7 (viii) Installation/Commissioning/Training Undertaking by the bidder (ix) Integrity Pact as per form -9 (x) Proof of being active taxpayer with government of Pakistan (xi) Affidavit on stamp paper to the effect that <i>“the requisite Bid Security has been placed separately in the sealed envelope of financial bid”.</i> <p>B. Financial Bid</p> <ul style="list-style-type: none"> (i) Letter of Bid (Bid Form) as per Form-11 (ii) Price Break down schedule as per Form-12 (iii) Bid Security as per Form-13
10. Bid Form	The Bidder shall complete the Bid Form and the appropriate Price Schedule furnished in the tender documents, indicating the goods to be supplied, a brief description of the goods, their country of origin, quantity, and prices.
11. Bid Prices	<p>11.1 The Bidder shall indicate on the appropriate Price Schedule the unit prices (where applicable) and total bid price of the goods it proposes to supply under the contract. The quoted price shall include the price of equipment along-with standard accessories and transportation from the warehouse of Original Equipment Manufacturer to the Purchaser; covering all costs of loading of Equipment from the warehouse and at port of shipment, the cost of airfreight/ship warfare/berthing, demurrage charges, stevedoring, handling charges and other port and river dues in respect of shipment companies vessels at the port of shipment and all other expenditure up to the stage of placing the store at rest on board the ship and the freight charges.</p> <p>11.2 In order to facilitate the clearance at the port at the arrival, a Clearing Agent will be engaged by the Bidder in consultation with the University who will get the Stores cleared and all charges of clearance and of the clearing Agents charges/ commission will be borne by the Bidders. Demurrages, if any, shall also be the liability of the Bidder.</p>

	<p>11.3 The prices shall be offered in Foreign Exchange CPT, Peshawar for import items and in PKR local currency for local purchase items. The price must be written without erasures, in figures and also in words for the total price.</p> <p>11.4 Prices can be quoted for all the lots or for any particular lot. However, the price offered for any lot must be for the entire lot and for the entire quantity demanded. Partial lot and partial quantity offers shall straightaway be rejected. Conditional offer will also be considered as non-responsive Bidder. Complete lot condition is only binding for import items. Local purchase items can be quoted individually.</p> <p>11.5 For the purpose of comparison of bids quoted in different currencies, price shall be converted into one single currency. The rate of exchange shall be the selling rate prevailing seven working days before the date of opening of the bids specified in the tender documents, as notified by the State Bank of Pakistan.</p> <p>11.6 Prices quoted by the Bidder shall be fixed during the Bidder's performance of the contract and not subject to variation on any account, unless otherwise specified in the Tender Documents. A bid submitted with an adjustable price quotation will be treated as nonresponsive and will be rejected.</p> <p>11.7 In case the stores manufactured/available in Pakistan without involving import by the University, the quoted price shall include all charges for packing, marking, handling, installation, putting into operation, training and demonstration of the working of the equipment in the purchaser's premises.</p>
<p>12. Bid Currencies</p>	<p>Prices can be quoted in any foreign currency on CPT, Peshawar basis for import items. Local Purchase items must only be quoted in PKR local currency. If the Bidder wishes to be paid in a combination of amounts in different currencies, it may quote its price accordingly.</p>
<p>13. Documents Establishing Bidder's Eligibility and Qualification</p>	<p>13.1 The Bidder shall furnish, as part of its bid, documents establishing the Bidder's eligibility to bid and its qualifications to perform the contract, if its bid is accepted.</p> <p>13.2 The documentary evidence of the Bidder's eligibility to bid shall establish to the Purchaser's satisfaction that the Bidder, at the time of submission of its bid, is from an eligible country as defined under ITB Clause 2.</p> <p>13.3 The documentary evidence of the Bidder's qualifications to perform the contract if its bid is accepted shall establish to the Purchaser's satisfaction:</p> <p>(a) that, in the case of a Bidder offering to supply goods</p>

	<p>under the contract which the Bidder did not manufacture or otherwise produce, the Bidder has been duly authorized by the goods' Original Equipment Manufacturer or producer to supply the goods in the Purchaser's country;</p> <p>(b) that the Bidder has the financial and technical capability necessary to perform the contract;</p> <p>(c) that, in the case of a Bidder not doing business within the Purchaser's country, the Bidder is or will be (if awarded the contract) represented by an Agent in that country equipped and able to carry out the Bidder's installation, commissioning, training, repair and maintenance obligations prescribed in the Conditions of Contract and/or Technical Specifications; and</p> <p>(d) that the Bidder meets the qualification criteria listed in the Bid Data Sheet.</p>
<p>14. Documents Establishing Goods' Eligibility and Conformity to Tender Documents</p>	<p>14.1 The Bidder shall furnish, as part of its bid, documents establishing the eligibility and conformity to the tender documents of all goods and services which the Bidder proposes to supply under the contract.</p> <p>14.2 The documentary evidence of the eligibility of the goods and services shall consist of a statement in the Price Schedule of the country of origin of the goods and services offered which shall be confirmed by a certificate of origin issued at the time of shipment.</p> <p>14.3 The documentary evidence of conformity of the goods and services to the tender documents may be in the form of literature, drawings, and data, and shall consist of a detailed description of the essential technical and performance characteristics of the goods.</p>
<p>15. Bid Security</p>	<p>15.1 Pursuant to ITB Clause 9, the Bidder shall furnish, as part of its financial bid, a Bid Security in the amount specified in the Bid Data Sheet. The Bidder shall submit an affidavit on stamp paper with the technical bid that <i>“the requisite Bid Security of 2% of the total bid has been placed separately in the sealed envelope of financial bid”</i>. In Affidavit the amount of Bid Security not be disclosed by any mean. In case of failure of submission of an affidavit for bid security with the technical bid, his bid shall be rejected by the Purchaser as non-responsive.</p> <p>15.2 The bid security is required to protect the Purchaser against the risk of Bidder's conduct which would warrant the</p>

	<p>security's forfeiture, pursuant to ITB Clause 15.7.</p> <p>15.3 The bid security shall be denominated in the currency of the bid or in another freely convertible currency, and shall be in one of the following forms:</p> <p>(a) a bid security issued by a reputable financial institution (as defined in KPPRA Procurement Rules, 2014) located in the Purchaser's country, in the form provided in the tender documents or another form acceptable to the Purchaser and valid for one hundred and twenty days (120) days beyond the validity of the bid; or</p> <p>(b) Irrevocable encashable on-demand Bank call-deposit.</p> <p>15.4 Any bid not secured in accordance with ITB Clauses 15.1 and 15.3 will be rejected by the Purchaser as nonresponsive, pursuant to ITB Clause 24.</p> <p>15.5 Unsuccessful bidders' bid securities will be discharged or returned as promptly as possible but not later than thirty (30) days after the expiration of the period of bid validity prescribed by the Purchaser pursuant to ITB Clause 16.</p> <p>15.6 The successful Bidder's bid security will be discharged upon the Bidder signing the contract, pursuant to ITB Clause 34, and furnishing the performance security, pursuant to ITB Clause 35.</p> <p>15.7 The bid security may be forfeited:</p> <p>(a) if a Bidder:</p> <p>(i) withdraws its bid during the period of bid validity specified by the Bidder on the Bid Form, or</p> <p>(ii) does not accept the correction of errors pursuant to ITB Clause 24.2; or</p> <p>(b) in the case of a successful Bidder, if the Bidder fails:</p> <p>(i) to sign the contract in accordance with ITB Clause 34; or</p> <p>(ii) to furnish performance security in accordance with ITB Clause 35.</p>
<p>16. Period of Validity of Bids</p>	<p>16.1 Bids shall remain valid for the period specified in the Bid Data Sheet after the date of bid submission prescribed by the Purchaser, pursuant to ITB Clause 19. A bid valid for a shorter period shall be rejected by the Purchaser as non-responsive.</p> <p>16.2 In exceptional circumstances, the Purchaser may solicit the Bidder's consent to an extension of the period of validity. The request and the responses thereto shall be made in writing. The bid security provided under ITB Clause 15 shall also be suitably extended. A Bidder may refuse the request</p>

	without forfeiting its bid security. A Bidder granting the request will not be required nor permitted to modify its bid, except as provided in the tender documents.
17. Format and Signing of Bid	<p>17.1 The Bidder shall prepare a bid which shall be typed or written in indelible ink and shall be signed by the Bidder or a person or persons duly authorized to bind the Bidder to the contract. All pages of the bid, except for unamended printed literature, shall be initialed by the person or persons signing the bid.</p> <p>17.2 Any interlineation, erasures, or overwriting shall be valid only if they are initialed by the person or persons signing the bid.</p> <p>17.3 The Bidder shall furnish information as described in the Form of Bid on commissions or gratuities, if any, paid or to be paid to agents relating to this Bid, and to contract execution if the Bidder is awarded the contract.</p>

D. Submission of Bids

18. Sealing and Marking of Bids	<p>18.1 The bid shall comprise a single package containing two separate envelopes. Each envelope shall contain separately the financial proposal and the technical proposal; the envelopes shall be marked as “FINANCIAL PROPOSAL” and “TECHNICAL PROPOSAL” in bold and legible letters to avoid confusion. The bid so prepared shall be sealed and submitted to the office of the Project Director, Jalozai Campus, University of Engineering & Technology, Peshawar in accordance with instructions given in invitation for bids;</p> <p>18.2 The envelop shall bear the Invitation for Bids Title and Procurement Reference Number, and a statement: “DO NOT OPEN BEFORE 11:00 AM, 24th September, 2020.</p>
19. Deadline for Submission of Bids	<p>19.1 Bids must be received by the Purchaser at the address specified under ITB Clause 18.2 (a) no later than the time and date specified in the Bid Data Sheet.</p> <p>19.2 The Purchaser may, at its discretion, extend this deadline for the submission of bids by amending the tender documents in accordance with ITB Clause 7, in which case all rights and obligations of the Purchaser and bidders previously subject to the deadline will thereafter be subject to the deadline as extended.</p>
20. Late Bids	<p>20.1 Any bid received by the Purchaser after the deadline for submission of bids prescribed by the Purchaser pursuant to ITB Clause 19 will be rejected and returned unopened to the Bidder.</p>
21. Modification and Withdrawal	<p>21.1 The Bidder may modify or withdraw its bid after the bid’s submission, provided that written notice of the modification,</p>

of Bids	<p>including substitution or withdrawal of the bids, is received by the Purchaser prior to the deadline prescribed for submission of bids.</p> <p>21.2 The Bidder's modification or withdrawal notice shall be prepared, sealed, marked, and dispatched in accordance with the provisions of ITB Clause 18. A withdrawal notice may also be sent by cable, but followed by a signed confirmation copy, postmarked not later than the deadline for submission of bids.</p> <p>21.3 No bid may be modified after the deadline for submission of bids.</p> <p>21.4 No bid may be withdrawn in the interval between the deadline for submission of bids and the expiration of the period of bid validity specified by the Bidder on the Bid Form. Withdrawal of a bid during this interval may result in the Bidder's forfeiture of its bid security, pursuant to the ITB Clause 15.7.</p>
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E. Opening and Evaluation of Bids

22. Opening of Bids by the Purchaser	<p>22.1 The Purchaser will open only the Technical Bids of all the bidders in the presence of bidders' representatives who choose to attend, at the time, on the date, and at the place specified in the Bid Data Sheet. The bidders' representatives who are present shall sign a register evidencing their attendance.</p> <p>22.2 The bidders' names, bid modifications or withdrawals and such other details as the Purchaser, at its discretion, may consider appropriate, will be announced at the opening. No bid shall be rejected at bid opening, except for late bids, which shall be returned unopened to the Bidder pursuant to ITB Clause 20.</p> <p>22.3 Bids (and modifications sent pursuant to ITB Clause 21.2) that are not opened and read out at bid opening shall not be considered further for evaluation, irrespective of the circumstances.</p> <p>22.4 The Purchaser will prepare record of the bid opening.</p>
23. Clarification of Bids	<p>23.1 During evaluation of the bids, the Purchaser may, at its discretion, ask the Bidder for a clarification of its bid. The request for clarification and the response shall be in writing, and no change in the prices or substance of the bid shall be sought, offered, or permitted.</p>
24. Evaluation Criteria	<p>Evaluation of the bids will be conducted in the following three stages: -</p> <p>Stage-1: <u>Preliminary examination</u></p>

- At first stage, the Purchaser will examine the bids to determine: -
- (a) whether required documents, duly signed, have been furnished,
 - (b) whether power of attorney for the authorized person has been submitted,
 - (c) whether integrity pact has been signed
 - (d) whether proof of being an active tax payer with government of Pakistan has been provided;
 - (e) Whether affidavit on stamp paper to the effect that *“the requisite Bid Security has been placed separately in the sealed envelope of financial bid”* has been provided.
 - (f) whether original equipment manufacturer’s authorization letter (Imported Items)/ Distributor Certificate (local purchase items) has been submitted; and

The preliminary examination will be conducted on a responsive and non-responsive basis. Only bids which have been rated "responsive" in the preliminary examination of bids shall be considered for further evaluation.

Stage -2 Technical Requirements Compliance

At the second stage, the Purchaser will examine the technical bids to determine whether:

- a) They meet the minimum required specifications.

- b) Whether the bidder has the requisite capabilities to undertake the contract. For the purpose of this clause, the bidder must have: -
 - (i) minimum two year experience;
 - (ii) minimum one engineer and one sales representative;
 - (iii) minimum three similar installations by OEM/bidder;

- (c) The bidders will be required to quote for the entire lot and for the entire quantity demanded. The purchaser will reject the bids with partial lot or partial quantity offers unless otherwise stated in the BoQ. Complete lot condition is only binding for import items. Local purchase items can be evaluated individually.

- (d) Moreover, the bids shall comply in accordance with the terms & conditions of bid solicitation document. The bid not fulfilling the terms & conditions of bid solicitation document will be rejected/technically disqualified.

- (e) The Purchaser will examine the bids to determine whether they are complete, and whether the bids are generally in order.

	<p>(f) Any bid, which does not meet these shall be rejected and will not be considered for subsequent evaluation. The Financial proposals of only those bidders will be opened on a subsequent date, who are declared technically qualified for participation in the financial bid.</p> <p>Stage -3 <u>Financial/Final Evaluation</u></p> <p>(a) In the last stage, the Purchaser will open the financial bids of only those bidders who are declared as technically qualified on a subsequent date.</p> <p>(b) Arithmetical errors will be rectified on the following basis. If there is a discrepancy between the unit price and the total price that is obtained by multiplying the unit price and quantity, the unit price shall prevail, and the total price shall be corrected. If there is a discrepancy between words and figures, the amount in words will prevail. If the Bidder does not accept the correction of the errors, its bid will be rejected, and its bid security may be forfeited.</p> <p>(c) The Purchaser may waive any minor informality, nonconformity, or irregularity in a bid which does not constitute a material deviation.</p> <p>(d) For the purpose of comparison of bids quoted in different currencies, price shall be converted into one single currency. The rate of exchange shall be the selling rate prevailing seven working days before the date of opening of technical bids specified in the tender documents, as notified by the state bank of Pakistan.</p> <p>(e) The successful bidder shall be determined on the basis of lowest evaluated financial bid.</p>
<p>25. Contacting the Purchaser</p>	<p>25.1 From the time of bid opening to the time of contract award, if any bidder wishes to contact the Purchaser on any matter related to the bid, it should do so in writing.</p> <p>25.2 Any effort by a Bidder to influence the Purchaser in its decisions on bid evaluation, bid comparison, or contract award may result in the rejection of the Bidder's bid.</p>

F. Award of Contract

<p>26. Post-qualification</p>	<p>26.1 In the absence of prequalification, the Purchaser will determine to its satisfaction whether the Bidder that is selected as having submitted the lowest evaluated responsive bid is qualified to perform the contract satisfactorily, in accordance with the criteria listed in ITB</p>
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	<p>Clause 13.3.</p> <p>26.2 The determination will take into account the Bidder's financial, and technical capabilities. It will be based upon an examination of the documentary evidence of the Bidder's qualifications submitted by the Bidder, pursuant to ITB Clause 13.3, as well as such other information as the Purchaser deems necessary and appropriate.</p> <p>26.3 An affirmative determination will be a prerequisite for award of the contract to the Bidder. A negative determination will result in rejection of the Bidder's bid, in which event the Purchaser will proceed to the next lowest evaluated bid to make a similar determination of that Bidder's capabilities to perform satisfactorily.</p>
27. Award Criteria	Subject to ITB Clause 31, the Purchaser will award the contract to the successful Bidder whose bid has been determined to be substantially responsive and has been determined to be the best evaluated bid, provided further that the Bidder is determined to be qualified to perform the contract satisfactorily.
28. Purchaser's Right to Vary Quantities at Time of Award	The Purchaser reserves the right at the time of Contract Award to increase or decrease, by the percentage indicated in the Bid Data Sheet , the quantity of goods and services originally specified in the Schedule of Requirements without any change in unit price or other terms and conditions.
29. Purchaser's Right to Accept Any Bid and to Reject Any or All Bids	The Purchaser reserves the right to accept or reject any bid, and to annul the tender process and reject all bids at any time prior to contract award, without thereby incurring any liability to the affected Bidder or bidders.
30. Notification of Award	<p>30.1 Prior to the expiration of the period of bid validity, the Purchaser will notify the successful Bidder in writing by registered letter or by cable, to be confirmed in writing by registered letter, that its bid has been accepted.</p> <p>30.2 The notification of award will constitute the formation of the Contract.</p> <p>30.3 Upon the successful Bidder's furnishing of the performance security pursuant to ITB Clause 34, the Purchaser will promptly notify the name of the winning Bidder to each unsuccessful Bidder and will discharge its bid security, pursuant to ITB Clause 15.</p> <p>30.4 If, after notification of award, a Bidder wishes to ascertain the grounds on which its bid was not selected, it should address its request to the Purchaser. The Purchaser will promptly respond in writing to the unsuccessful Bidder.</p>
31. Signing of	31.1 At the same time as the Purchaser notifies the successful

<p>Contract</p>	<p>Bidder that its bid has been accepted, the Purchaser will send the Bidder the Contract Form provided in the tender documents, incorporating all agreements between the parties.</p> <p>31.2 Within thirty (30) days of receipt of the Contract Form, the successful Bidder shall sign and date the contract and return it to the Purchaser.</p>
<p>32. Performance Security</p>	<p>31.1 Within thirty (30) days of the receipt of notification of award from the Purchaser, the successful Bidder shall furnish the performance security in accordance with the Conditions of Contract, in the Performance Security Form provided in the tender documents, or in another form acceptable to the Purchaser.</p> <p>31.2 Failure of the successful Bidder to comply with the requirement of ITB Clause 33.2 or ITB Clause 34.1 shall constitute sufficient grounds for the annulment of the award and forfeiture of the bid security, in which event the Purchaser may make the award to the next lowest evaluated Bidder or call for new bids.</p>
<p>33. Corrupt or Fraudulent Practices</p>	<p>32.1 The University of Engineering & Technology, Peshawar requires that Bidders/ Suppliers/ Contractors under contract, observe the highest standard of ethics during the procurement and execution of such contracts. In pursuance of this policy, University of Engineering & Technology, Peshawar:</p> <p>(a) defines, for the purposes of this provision, the terms set forth below as follows:</p> <p>(i) “corrupt practice” means the offering, giving, receiving or soliciting of anything of value to influence the action of a public official in the procurement process or in contract execution; and</p> <p>(ii) “fraudulent practice” means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of the Purchaser, and includes collusive practice among Bidders (prior to or after bid submission) designed to establish bid prices at artificial non-competitive levels and to deprive the Purchaser of the benefits of free and open competition;</p> <p>(b) will reject a proposal for award if it determines that the Bidder recommended for award has engaged in corrupt or fraudulent practices in competing for the contract in question;</p> <p>(c) will declare a firm ineligible, either indefinitely or for a stated period of time, to be awarded at University of</p>

	Engineering & Technology, Peshawar, contract if it at any time determines that the firm has engaged in corrupt or fraudulent practices in competing for, or in executing, a University of Engineering & Technology, Peshawar contract.
34. Integrity Pact	The Bidder shall sign, stamp and attach with financial bid the Integrity Pact provided at Form-9 to Bid in the Bidding Document for all Provincial Government procurement contracts exceeding Rupees ten million. Failure to such Integrity Pact shall make the bidder non-responsive.

Section III. Bid Data Sheet

The following specific data for the goods to be procured shall complement, supplement, or amend the provisions in the Instructions to Bidders (ITB). Whenever there is a conflict, the provisions herein shall prevail over those in ITB.

Introduction	
ITB 1.1	Name of funding Agency: Higher Education Commission, Islamabad
ITB 1.1	Name of Procuring Agency: University of Engineering & Technology, Peshawar
ITB 1.1	Name of Contract. Procurement of brand new labs equipment for Civil, Electrical and Industrial Engineering Departments under the project titled "Jalozai Campus University of Engineering & Technology, Peshawar"
ITB 6	Purchaser's address, telephone, telex, and facsimile numbers. The Project Director, Jalozai Campus University of Engineering & Technology, Peshawar Phone# +92-91-922286 E-mail: pdjc@uetpeshawar.edu.pk
ITB 8.1	Language of the bid. English

Bid Price and Currency	
ITB 11.3	Bid Prices The prices shall be offered in foreign currency CPT, Peshawar basis for import items. For local purchase items the prices shall be offered in PKR.
ITB 11.4	Prices can be quoted for all the lots or for any particular lot. However, the price offered for any lot must be for the entire lot (or unless otherwise stated in BoQ) and for the entire quantity demanded. Partial lot and partial quantity offers shall straightaway be rejected. Conditional offer will also be

	considered as non-responsive and subsequently be rejected. Complete lot quote condition is only binding for import items. Local purchase items can be quoted individually.
ITB 11.6	The prices quoted by the Bidder shall be fixed during the Bidder's performance of the contract and not subject to variation on any account.
ITB 12	Bid currencies Prices shall be quoted in foreign currency "Carriage Paid To" (CPT), Peshawar with onward delivery to the final destination-Jalozai Campus; by the bidder. For local purchase items the prices shall be offered in PKR.

Preparation and Submission of Bids	
ITB 15.1	Amount of bid security. The Bidder shall furnish, as part of its financial bid, a bid security of two percent (2%) of the total price of the quoted bid.
ITB 16.1	Bid validity period. Bids shall remain valid for a period of 120 days after the date of bid's submission prescribed by the Purchaser, pursuant to ITB Clause 19. A bid valid for a shorter period shall be rejected by the Purchaser as non-responsive.
ITB 16.2	Extension of the period of validity: In exceptional circumstances, the Purchaser may solicit the Bidder's consent to an extension of the period of validity. The request and the responses thereto shall be made in writing. A Bidder may refuse the request without forfeiting its bid security. A Bidder granting the request will not be required nor permitted to modify its bid.
ITB 18.1	Address for bid submission. Tender Box (installed in front of Treasurer's Office) or Main Conference Hall, University of Engineering & Technology, Peshawar.
ITB 18.2	IFB title. Procurement of brand new labs equipment for Civil, Electrical, Industrial & Electrical Engineering Departments under the project titled "Jalozai Campus University of Engineering & Technology, Peshawar" Procurement Reference Number UET/PD/J/C/2020/001
ITB 19.1	Deadline for bid submission. 24 th September, 2020 at 10:30 a.m.
ITB 22.1	Time, date, and place for bid opening. 11:00 a.m. on 24 th September, 2020, Conference Hall of University of Engineering & Technology, Peshawar

Bid Evaluation	
ITB 24	The successful bidder would be determined by the lowest evaluated bid received subject to the bid meeting the specifications and other terms and conditions specified in ITB 24.

Contract Award	
ITB 28	Percentage for quantity increase or decrease. The Purchaser reserves the right at the time of contract award to increase or decrease, up-to 15%, the quantity of goods and services originally specified in the Schedule of Requirements without any change in unit price or other terms and conditions.

Performance Security	
ITB 32	Within thirty (30) days of the receipt of notification of award from the Purchaser, the successful Bidder shall furnish the performance security in accordance with the Conditions of Contract, in the Performance Security Form provided in the tender documents, duly provided by reputable financial institution, recognized by the State Bank of Pakistan.
GCC 7.1 (SCC-3)	The amount of performance security, as a percentage of the Contract Price, shall be 10% of the total contract value which shall be retained by the Purchaser for a period of one year i.e. warranty period.

Delivery	
GCC-10 & SCC-6	Delivery through Letter of Credit (LC), the equipment shall be delivered to the designated location of the Purchaser on the basis of installed and workable condition within 180 days from the establishment of LC. In case of local supply; the supplier shall deliver the equipment within 30-days from issuance of the purchase order. However, further time extension could be granted to the vendors by the purchaser, upon submission of a genuine reason (s).

Training	
GCC 13(e)	The successful bidder shall arrange training for the Purchaser's personnel, through their foreign technical experts, at the designated location or at the concerned lab/department of Jalozai Campus of UET, Peshawar. During the training; assembly, starts-up, operation, maintenance, and/or repair of the supplied equipment/goods shall be undertaken. In case the bidder is unable to provide onsite training by their

	foreign technical experts, then 02 personnel from the University shall be provided training at the Manufacturer's site for no-less five working days at the cost of the bidder.
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Warranty	
GCC 15.2	Warranty shall remain valid for twelve (12) months after the Goods, or any portion thereof as the case may be, have been delivered, installed and commissioned at the final destination of the Purchaser.

Liquidated Damages	
GCC 23 (SCC 13)	Subject to GCC Clause 25, if the Supplier fails to deliver any or all of the Goods or to perform the Services within the period(s) specified in the Contract, the Purchaser shall, without prejudice to its other remedies under the Contract, deduct from the Contract Price, as liquidated damages, a sum equivalent to the percentage specified in SCC of the delivered price of the delayed Goods or unperformed Services for each week or part thereof of delay until actual delivery or performance, up to a maximum deduction of the percentage specified in SCC . Once the maximum is reached, the Purchaser may consider termination of the Contract pursuant to GCC Clause 24. Maximum deduction upto 10% @ 0.5% per week.

Section IV. General Conditions of Contract

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General Conditions of Contract

1. Definitions	<p>1.1 In this Contract, the following terms shall be interpreted as indicated:</p> <ul style="list-style-type: none">(a) “The Contract” means the agreement entered into between the Purchaser and the Supplier, as recorded in the Contract Form signed by the parties, including all attachments and appendices thereto and all documents incorporated by reference therein.(b) “The Contract Price” means the price payable to the Supplier under the Contract for the full and proper performance of its contractual obligations.(c) “The Goods” means all of the equipment, machinery, and/or other materials which the Supplier is required to supply to the Purchaser under the Contract.(d) “The Services” means those services ancillary to the supply of the Goods, such as transportation and any other incidental services, such as installation, commissioning, provision of technical assistance, training, and other such obligations of the Supplier covered under the Contract.(e) “GCC” means the General Conditions of Contract contained in this section.(f) “SCC” means the Special Conditions of Contract.(g) “The Purchaser” means the organization purchasing the Goods, as named in SCC.(h) “The Purchaser’s country” is the country named in SCC.(i) “The Supplier” means the individual or firm supplying the Goods and Services under this Contract and named in SCC.(j) “Day” means calendar day.
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2. Application	2.1 These General Conditions shall apply to the extent that they are not superseded by provisions of other parts of the Contract.
3. Country of Origin	<p>3.1 The proposals for imported items must be; of advanced technological countries i.e. UK, USA, Japan and Western European Countries</p> <p>3.2 All Goods and Services supplied under the Contract shall have their origin in the countries and territories eligible under the rules of the Government of Pakistan.</p> <p>3.3 For purposes of this Clause, “origin” means the place where the Goods were mined, grown, or produced, or from which the Services are supplied. Goods are produced when, through manufacturing, processing, or substantial and major assembly of components, a commercially recognized new product results that is substantially different in basic characteristics or in purpose or utility from its components.</p> <p>3.4 The origin of Goods and Services is distinct from the nationality of the Supplier.</p>
4. Standards	4.1 The Goods supplied under this Contract shall conform to the standards mentioned in the Technical Specifications, and, when no applicable standard is mentioned, to the authoritative standards appropriate to the Goods’ country of origin. Such standards shall be the latest issued by the concerned institution.
5. Use of Contract Documents and Information; and Inspection	<p>5.1 The Supplier shall not, without the Purchaser’s prior written consent, disclose the Contract, or any provision thereof, or any specification, plan, drawing, pattern, sample, or information furnished by or on behalf of the Purchaser in connection therewith, to any person other than a person employed by the Supplier in the performance of the Contract. Disclosure to any such employed person shall be made in confidence and shall extend only so far as may be necessary for purposes of such performance.</p> <p>5.2 The Supplier shall not, without the Purchaser’s prior written consent, make use of any document or information enumerated in GCC Clause 5.1 except for purposes of performing the Contract.</p> <p>5.3 Any document, other than the Contract itself, enumerated in GCC Clause 5.1 shall remain the property of the Purchaser and shall be returned (all copies) to the Purchaser on completion of the Supplier’s performance under the Contract if so required by the Purchaser.</p> <p>5.4 The Supplier shall permit the Purchaser to inspect the Supplier’s records relating to the performance of the</p>

	Supplier.
6. Patent Rights	6.1 The Supplier shall indemnify the Purchaser against all third-party claims of infringement of patent, trademark, or industrial design rights arising from use of the Goods or any part thereof in the Purchaser's country.
7. Performance Security	<p>7.1 Within thirty (30) days of receipt of the notification of Contract award, the successful supplier shall furnish to the Purchaser the performance security (10%) in the amount specified in SCC.</p> <p>7.2 The proceeds of the performance security shall be payable to the Purchaser as compensation for any loss resulting from the Supplier's failure to complete its obligations under the Contract.</p> <p>7.3 The performance security shall be denominated in the currency of the Contract, or in a freely convertible currency acceptable to the Purchaser and shall be in one of the following forms:</p> <p>(a) a guarantee issued by a reputable financial institution (as defined by GoKPPRA Procurement Rules, 2014) located in the Purchaser's country or abroad, acceptable to the Purchaser, in the form provided in the tender documents or another form acceptable to the Purchaser; or</p> <p>(b) a cashier's or certified check.</p> <p>7.4 The performance security will be discharged by the Purchaser and returned to the Supplier not later than thirty (30) days following the date of completion of the Supplier's performance obligations under the Contract, including any warranty obligations, unless otherwise specified in SCC.</p>
8. Inspections and Tests	<p>8.1 The Purchaser shall have the right to inspect and/or to test the Goods to confirm their conformity to the Contract specifications.</p> <p>8.2 Should any inspected or tested Goods fail to conform to the Specifications, the Purchaser may reject the Goods, and the Supplier shall either replace the rejected Goods or make alterations necessary to meet specification requirements free of cost to the Purchaser.</p> <p>8.3 The Purchaser's right to inspect, test and, where necessary, reject the Goods after the Goods' arrival in the Purchaser's country shall in no way be limited or waived by reason of the Goods having previously been inspected, tested, and</p>

	<p>passed prior to the Goods' shipment from the country of origin.</p> <p>8.4 Nothing in GCC Clause 8 shall in any way release the Supplier from any warranty or other obligations under this Contract.</p>
9. Packing	<p>9.1 The Supplier shall provide such packing of the Goods as is required to prevent their damage or deterioration during transit to their final destination, as indicated in the Contract. The packing shall be sufficient to withstand, without limitation, rough handling during transit and exposure to extreme temperatures, salt and precipitation during transit, and open storage. Packing case size and weights shall take into consideration, where appropriate, the remoteness of the Goods' final destination and the absence of heavy handling facilities at all points in transit.</p> <p>9.2 The packing, marking, and documentation within and outside the packages shall comply strictly with such special requirements as shall be expressly provided for in the Contract, including additional requirements, if any, specified in SCC, and in any subsequent instructions ordered by the Purchaser.</p>
10. Delivery and Documents	<p>10.1 Delivery of the Goods shall be made by the Supplier in accordance with the terms specified in the Schedule of Requirements. The details of shipping and/or other documents to be furnished by the Supplier are specified in SCC.</p> <p>10.2 For purposes of the Contract, "CPT" trade term used to describe the obligations of the parties shall have the meaning assigned to it by <i>Incoterms</i> previously published by the International Chamber of Commerce, Paris.</p> <p>10.3 Documents to be submitted by the Supplier are specified in SCC.</p>
11. Insurance	<p>The Purchaser shall arrange for the insurance of the goods, which shall cover full period of works as defined in the scope of works. The insurance premium shall be paid by the Purchaser.</p>
12. Transportation	<p>The supplier shall be required under the Contract to transport the goods to a specified place of destination within the Purchaser's country, transport to such place of destination in the Purchaser, including storage, as shall be specified in the contract, shall be arranged by the supplier, and related costs shall be included in the contract price.</p>
13. Incidental	<p>13.1 The Supplier may be required to provide any or all of the</p>

<p>Services</p>	<p>following services, including additional services, if any, specified in SCC:</p> <ul style="list-style-type: none"> (a) performance or supervision of on-site assembly and/or start-up of the supplied Goods; (b) furnishing of tools required for assembly and/or maintenance of the supplied Goods; (c) furnishing of a detailed operations and maintenance manual for each appropriate unit of the supplied Goods; (d) performance or supervision or maintenance and/or repair of the supplied Goods, for a period of time agreed by the parties, provided that this service shall not relieve the Supplier of any warranty obligations under this Contract; and (e) The successful bidder shall arrange training for the Purchaser's personnel, through their local technical experts, at the designated location or at the concerned lab/department of UET, Peshawar. During the training; assembly, starts-up, operation, maintenance, and/or repair of the supplied equipment/goods shall be undertaken. <p>13.2 Prices charged by the Supplier for incidental services, if not included in the Contract Price for the Goods, shall be agreed upon in advance by the parties and shall not exceed the prevailing rates charged to other parties by the Supplier for similar services.</p>
<p>14. Spare Parts</p>	<p>14.1 As specified in SCC, the Supplier may be required to provide any or all of the following materials, notifications, and information pertaining to spare parts manufactured or distributed by the Supplier:</p> <ul style="list-style-type: none"> (a) such spare parts as the Purchaser may elect to purchase from the Supplier, provided that this election shall not relieve the Supplier of any warranty obligations under the Contract; and (b) in the event of termination of production of the spare parts: <ul style="list-style-type: none"> (i) advance notification to the Purchaser of the pending termination, in sufficient time to permit the Purchaser to procure needed requirements; and (ii) following such termination, furnishing at no cost to the Purchaser, the blueprints, drawings, and

	specifications of the spare parts, if requested.
15. Warranty	<p>15.1 The Supplier warrants that the Goods supplied under the Contract are new, unused, of the most recent or current models, and that they incorporate all recent improvements in design and materials unless provided otherwise in the Contract. The Supplier further warrants that all Goods supplied under this Contract shall have no defect, arising from design, materials, or workmanship (except when the design and/or material is required by the Purchaser's specifications) or from any act or omission of the Supplier, that may develop under normal use of the supplied Goods in the conditions prevailing in the country of final destination.</p> <p>15.2 This warranty shall remain valid for twelve (12) months after the Goods, or any portion thereof as the case may be, have been delivered, installed and commissioned at the final destination indicated in the Contract.</p> <p>15.3 The Purchaser shall promptly notify the Supplier in writing of any claims arising under this warranty.</p> <p>15.4 Upon receipt of such notice, the Supplier shall, within the period specified in SCC and with all reasonable speed, repair or replace the defective Goods or parts thereof, without costs to the Purchaser.</p> <p>15.5 If the Supplier, having been notified, fails to remedy the defect(s) within the period specified in SCC, the Purchaser may proceed to take such remedial action as may be necessary, at the Supplier's risk and expense and without prejudice to any other rights which the Purchaser may have against the Supplier under the Contract.</p>
16. Payment	The method and conditions of payment to be made to the Supplier under this Contract shall be specified in SCC .
17. Prices	17.1 Prices charged by the Supplier for Goods delivered and Services performed under the Contract shall not vary from the prices quoted by the Supplier in its bid.
18. Change Orders	<p>18.1 The Purchaser may at any time, by a written order given to the Supplier pursuant to GCC Clause 32, make changes within the general scope of the Contract in any one or more of the following:</p> <ul style="list-style-type: none"> (a) drawings, designs, or specifications, where Goods to be furnished under the Contract are to be specifically manufactured for the Purchaser; (b) the method of shipment or packing; (c) the place of delivery; and/or

	<p>(d) the Services to be provided by the Supplier.</p> <p>18.2 If any such change causes an increase or decrease in the cost of, or the time required for, the Supplier's performance of any provisions under the Contract, an equitable adjustment shall be made in the Contract Price or delivery schedule, or both, and the Contract shall accordingly be amended. Any claims by the Supplier for adjustment under this clause must be asserted within thirty (30) days from the date of the Supplier's receipt of the Purchaser's change order.</p>
19. Contract Amendments	Subject to GCC Clause 18, no variation in or modification of the terms of the Contract shall be made except by written amendment signed by the parties.
20. Assignment	The Supplier shall not assign, in whole or in part, its obligations to perform under this Contract, except with the Purchaser's prior written consent.
21. Subcontracts	<p>21.1 The Supplier shall notify the Purchaser in writing of all subcontracts awarded under this Contract if not already specified in the bid. Such notification, in the original bid or later, shall not relieve the Supplier from any liability or obligation under the Contract.</p> <p>21.2 Subcontracts must comply with the provisions of GCC Clause 3.</p>
22. Delays in the Supplier's Performance	<p>22.1 Delivery of the Goods and performance of Services shall be made by the Supplier in accordance with the time schedule prescribed by the Purchaser in the Schedule of Requirements.</p> <p>22.2 If at any time during performance of the Contract, the Supplier or its subcontractor(s) should encounter conditions impeding timely delivery of the Goods and performance of Services, the Supplier shall promptly notify the Purchaser in writing of the fact of the delay, its likely duration and its cause(s). As soon as practicable after receipt of the Supplier's notice, the Purchaser shall evaluate the situation and may at its discretion extend the Supplier's time for performance, with or without liquidated damages, in which case the extension shall be ratified by the parties by amendment of Contract.</p> <p>22.3 Except as provided under GCC Clause 25, a delay by the Supplier in the performance of its delivery obligations shall render the Supplier liable to the imposition of liquidated damages pursuant to GCC Clause 23, unless an extension of time is agreed upon pursuant to GCC Clause 22.2 without</p>

	the application of liquidated damages.
23. Liquidated Damages	Subject to GCC Clause 25, if the Supplier fails to deliver any or all of the Goods or to perform the preliminary Services within the period(s) specified in the Contract, the Purchaser shall, without prejudice to its other remedies under the Contract, deduct from the Contract Price, as liquidated damages, a sum equivalent to the percentage specified in SCC of the delivered price of the delayed Goods or unperformed Services for each week or part thereof of delay until actual delivery or performance, up to a maximum deduction of the percentage specified in SCC . Once the maximum is reached, the Purchaser may consider termination of the Contract pursuant to GCC Clause 24.
24. Termination for Default	<p>24.1 The Purchaser, without prejudice to any other remedy for breach of Contract, by written notice of default sent to the Supplier, may terminate this Contract in whole or in part:</p> <ul style="list-style-type: none"> (a) if the Supplier fails to deliver any or all of the Goods within the period(s) specified in the Contract, or within any extension thereof granted by the Purchaser pursuant to GCC Clause 22; or (b) if the Supplier fails to perform any other obligation(s) under the Contract. (c) if the Supplier, in the judgment of the Purchaser, has engaged in corrupt or fraudulent practices in competing for or in executing the Contract. <p>For the purpose of this clause:</p> <p>“corrupt practice” means the offering, giving, receiving, or soliciting of anything of value to influence the action of a public official in the procurement process or in contract execution.</p> <p>“fraudulent practice” means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of the Borrower, and includes collusive practice among Bidders (prior to or after bid submission) designed to establish bid prices at artificial non-competitive levels and to deprive the Borrower of the benefits of free and open competition.</p> <p>24.2 In the event the Purchaser terminates the Contract in whole or in part, pursuant to GCC Clause 24.1, the Purchaser may procure, upon such terms and in such manner as it deems appropriate, Goods or Services similar to those undelivered, and the Supplier shall be liable to the Purchaser for any excess costs for such similar Goods or Services. However,</p>

	the Supplier shall continue performance of the Contract to the extent not terminated.
25. Force Majeure	<p>25.1 Notwithstanding the provisions of GCC Clauses 22, 23, and 24, the Supplier shall not be liable for forfeiture of its performance security, liquidated damages, or termination for default if and to the extent that its delay in performance or other failure to perform its obligations under the Contract is the result of an event of Force Majeure.</p> <p>25.2 For purposes of this clause, “Force Majeure” means an event beyond the control of the Supplier and not involving the Supplier’s fault or negligence and not foreseeable. Such events may include, but are not restricted to, acts of the Purchaser in its sovereign capacity, wars or revolutions, fires, floods, epidemics, quarantine restrictions, and freight embargoes.</p> <p>25.3 If a Force Majeure situation arises, the Supplier shall promptly notify the Purchaser in writing of such condition and the cause thereof. Unless otherwise directed by the Purchaser in writing, the Supplier shall continue to perform its obligations under the Contract as far as is reasonably practical, and shall seek all reasonable alternative means for performance not prevented by the Force Majeure event.</p>
26. Termination for Insolvency	The Purchaser may at any time terminate the Contract by giving written notice to the Supplier if the Supplier becomes bankrupt or otherwise insolvent. In this event, termination will be without compensation to the Supplier, provided that such termination will not prejudice or affect any right of action or remedy which has accrued or will accrue thereafter to the Purchaser.
27. Termination for Convenience	<p>27.1 The Purchaser, by written notice sent to the Supplier, may terminate the Contract, in whole or in part, at any time for its convenience. The notice of termination shall specify that termination is for the Purchaser’s convenience, the extent to which performance of the Supplier under the Contract is terminated, and the date upon which such termination becomes effective.</p> <p>27.2 The Goods that are complete and ready for shipment within thirty (30) days after the Supplier’s receipt of notice of termination shall be accepted by the Purchaser at the Contract terms and prices. For the remaining Goods, the Purchaser may elect:</p> <ul style="list-style-type: none"> (a) to have any portion completed and delivered at the Contract terms and prices; and/or (b) to cancel the remainder and pay to the Supplier an agreed amount for partially completed Goods and

	Services and for materials and parts previously procured by the Supplier.
28. Settlement of Disputes	28.1 The Purchaser and the supplier shall make every effort to resolve amicably by direct informal negotiation any disagreement or dispute arising between them under or in connection with the contract.
	28.2 If, after thirty (30) days from the commencement of such informal negotiation, the Purchaser and supplier have been unable to resolve amicably a contract dispute, either party may require that the dispute be referred for resolution to the formal mechanisms specified in SCC. These mechanisms may include, but are not restricted to, conciliation mediated by a third part, adjudication in an agreed manner and/or arbitration.
29. Governing Language	The Contract shall be written in the language specified in SCC . Subject to GCC Clause 30, the version of the Contract written in the specified language shall govern its interpretation. All correspondence and other documents pertaining to the Contract which are exchanged by the parties shall be written in the same language.
30. Applicable Law	The Contract shall be interpreted in accordance with the laws of the Purchaser's country, unless otherwise specified in SCC .
31. Notices	31.1 Any notice given by one party to the other pursuant to this Contract shall be sent to the other party in writing or by cable, telex, or facsimile and confirmed in writing to the other party's address specified in SCC . 31.2 A notice shall be effective when delivered or on the notice's effective date, whichever is later.
32. Taxes and Duties	The Supplier shall be entirely responsible for all taxes, duties, license fees, etc., incurred until delivery of the contracted Goods to the Purchaser. The Purchaser shall cover the Insurance premium and L/C charges only. The Purchaser is exempted from the Custom Duty and other government levies. The Purchaser will provide an Exemption letter and related documents to the clearing agent of the bidder for custom clearance.

Section V. Special Conditions of Contract

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Special Conditions of Contract

The following Special Conditions of Contract shall supplement the General Conditions of Contract. Whenever there is a conflict, the provisions herein shall prevail over those in the General Conditions of Contract. The corresponding clause number of the GCC is indicated in parentheses.

1. Definitions (GCC Clause 1)

GCC 1.1 (g)—The Purchaser is: University of Engineering & Technology, Peshawar- Pakistan

GCC 1.1 (h)—The Purchaser's country is: Islamic Republic of Pakistan

GCC 1.1 (i)—The Supplier is: _____

2. Country of Origin (GCC Clause 3)

All countries and territories declared by Government of Pakistan as eligible for procurement of Goods, Works, and Services in Government-Financed Procurement”.

3. Performance Security (GCC Clause 7)

GCC 7.1—The amount of performance security, as a percentage of the Contract Price, shall be 10% of the total contract value which shall be retained by the Purchaser for a period of one year i.e. warranty period.

4. Inspections and Tests (GCC Clause 8)

GCC 8.1— The Purchaser shall have the right to inspect and/or to test the Goods to confirm their conformity to the Contract specifications.

GCC 8.2— Should any inspected or tested Goods fail to conform to the Specifications, the Purchaser may reject the Goods, and the Supplier shall either replace the rejected Goods or make alterations necessary to meet specification requirements free of cost to the Purchaser.

GCC 8.3— The Purchaser's right to inspect, test and, where necessary, reject the Goods after the Goods' arrival in the Purchaser's country shall in no way be limited or waived by reason of the Goods having previously been inspected, tested, and passed prior to the Goods' shipment from the country of origin.

5. Packing (GCC Clause 9)

GCC 9.3—The following SCC shall supplement GCC Clause 9.2:

All the imported equipment shall be packed suitably for export. The Contractor shall be responsible for the equipment to be free from damage or other untoward effects due to transportation. Each package shall be marked as follows:

- a. Consignee
- b. Contact Number
- c. Port of Destination
- d. Final Destination
- e. Number of Case
- f. Gross Weight, Net Weight (kg)
- g. Measurement (length x width x height in cm or inches)

6. Delivery and Documents (GCC Clause 10)

For Goods supplied from abroad:

GCC 10.3— 6.1 The equipment shall be delivered to the Purchaser on the basis of installed and workable condition within 180 days after opening of letter of credit. The supplier shall be responsible for manufacturing and delivery of the equipment/stores from their workshop to the designated location of the Purchaser in Peshawar.

6.2 Upon shipment, the Supplier shall notify the Purchaser and the Insurance Company in writing the full details of the shipment, including cover note, description of Goods, quantity, the vessel/flight number, the bill of lading / airway bill number and date, port of loading, date of shipment, port of discharge, etc. The Supplier shall mail the following documents to the Purchaser, with a copy to the Insurance Company:

- (i) copies of the Supplier's invoice showing Goods' description, quantity, unit price, and total amount;
- (ii) shipper original clean, on-board bill of lading / airway bill marked "freight prepaid" and 02 copies of nonnegotiable bill of lading/ airway bill;
- (iii) copies of the packing list identifying contents of each package;
- (iv) Original Equipment Manufacturer's or Supplier's warranty certificate;
- (v) Certificate of origin.

6.3 For Goods from within the Purchaser's country:

GCC 10.3—Upon delivery of the Goods to the transporter, the Supplier shall notify the Purchaser in writing and mail the following documents to the Purchaser:

- (i) copies of the Supplier's invoice showing Goods' description, quantity, unit price, and total amount;
- (ii) delivery note, railway receipt, or truck receipt;
- (iii) Original Equipment Manufacturer's warranty certificate;
- (iv) Certificate of origin.

The above documents shall be received by the Purchaser before arrival of the Goods and, if not received, the Supplier will be responsible for any consequent expenses.

7. Insurance (GCC Clause 11)

GCC 11.1—The Purchaser shall arrange for the insurance of the goods and the insurance premium shall be paid by the Purchaser. The insurance shall cover full period of works as defined in the scope of works.

8. Incidental Services (GCC Clause 13)

GCC 13.1—Incidental services to be provided have been provided in GCC 13.1.

9. Spare Parts (GCC Clause 14)

GCC 14.1—Supplier shall carry sufficient inventories to assure ex-stock supply of consumable spares for the Goods, if required.

10. Warranty (GCC Clause 15)

GCC 15.2— The Supplier shall, in addition, comply with the performance and/or consumption guarantees specified under the Contract.

11. Payment (GCC Clause 16)

GCC 16.1—The method and conditions of payment to be made to the Supplier under this Contract shall be as follows:

Payment for Goods supplied from abroad:

- i. The Purchaser shall open an irrevocable **Letter of Credit** of one hundred percent (100%) of the whole CPT price.
- ii. One hundred percent (100%) of the letter of credit amount will be paid against presentation of the shipping documents to the bank through the above letter of credit. The required shipping documents include:
 - Clean on board bill of lading/airway bill;
 - Supplier's detailed invoice showing description of the Stores, specifications, quantity, unit price and total price;
 - Detailed packing list;
 - Certificate of origin of the Stores; and
 - Any other document as and when needed.

Payment for Goods and Services supplied from within the Purchaser's country:

Payment for Goods and Services supplied from within the Purchaser's country shall be made in Pak Rupees if quoted by the bidder in its bid, after completion of work.

12. Prices (GCC Clause 17)

GCC 17— Price shall not be adjusted in any case.

13. Liquidated Damages (GCC Clause 23)

GCC 23—Applicable rate:

Maximum deduction upto 10% @ 0.5% per week.

14. Settlement of Disputes (GCC Clause 28)

GCC 28— In the case of a dispute between the Purchaser and the Supplier, the dispute shall be referred to adjudication or arbitration in accordance with the laws of the Purchaser's country.

15. Governing Language (GCC Clause 29)

GCC 29—The Governing Language shall be English.

16. Applicable Law (GCC Clause 30)

GCC 30—The Applicable Law shall be interpreted in accordance with the laws of Islamic Republic of Pakistan.

17. Notices (GCC Clause 31)

GCC 31.1—**Purchaser's address for notice purposes:**

— University of Engineering & Technology, Peshawar– Pakistan.

— **Supplier's address for notice purposes:**

Section VI. Scope of Work and Schedule of Requirements

The successful supplier shall set up state-of-the-art labs of brand new equipment with standard accessories as detailed in technical specifications; their safe transportation from warehouse to the Purchaser and install, commission, test operate the equipment and train the Purchaser's personnel on the operation and maintenance of such equipment.

In consideration thereof the supplier will quote his price which will cover the cost of all items/activities to be carried out by the supplier for the installation, commissioning, test operation, demonstration of its functions and working, sending Foreign Engineers to the Purchaser's premises and arranging training for the University's Personnel on equipment at the said laboratories. All civil works, if required, for installation, commissioning and training of purchased goods will be carried out by the Purchaser.

The Purchaser shall cover the Insurance premium and L/C charges only. The Purchaser is exempted from the Custom Duty and other government levies. The Purchaser will timely provide an Exemption letter and related documents to the clearing agent of the bidder for custom clearance.

The work referred to above shall be completed within 180 days after execution of contract with the Purchaser.

Section VII. Technical Specifications

1. GENERAL CONDITIONS

1.1 These specifications explain the General Conditions, Bill of Quantities (Equipment List) and Technical Specifications. The Bill of Quantities indicates the description of equipment to be provided, their quantity and required works in connection with the supply and installation of equipment. Technical Specifications define the minimum technical requirements for each item of equipment. General Conditions describe the requirements common to all the equipment.

1.2 Scope of Work

The general scope of the work is to include the following as specifically defined hereunder for supply of equipment and spare parts, and other works on this Project.

1. Supply and Installation of the Equipment.

All the equipment supplied under the Project shall be installed and brought into workable conditions by the supplier at the locations and places designated by the Purchaser in Peshawar. It is the sole responsibility of the Supplier to deliver the equipment to the site, including, but not limited to, ocean freight/air freight, unloading at the port, customs clearance, inland transportation, unloading at site, unpacking, assembling and installation.

2. Dispatch of Technical Personnel to the site for installation, instructions and commissioning.

1.3 Location

Jalozai Campus, University of Engineering & Technology, Pabbi Cherat Road District Nowshera, Khyber Pakhtunkhwa Province, Islamic Republic of Pakistan.

2. GENERAL REQUIREMENTS.

2.1 Specifications

Minimum technical requirements for each equipment are described in the Technical Specifications. All the equipment to be supplied shall be brand new and unused and shall be equal or superior in quality, performance and standards prescribed on the Technical Specifications.

2.2 Electrical Ratings and Standards.

The equipment shall conform to the following ratings and standards wherever applicable.

1. All the electrically operated equipment specified herein shall be single-phase, AC 220 V \pm 10%, 50 Hz, and three-phase AC 440V \pm 10%, 50 Hz, unless otherwise specified.

2. Electrical Plugs for the equipment shall conform to local regulation and standard.

2.3 Standards and Dimensions.

All the equipment and work shall conform to the International and source country standards wherever/whichever applicable.

All dimensions of the equipment shall be stated in metric system unless otherwise specified in the Technical Specifications.

2.4 Name Plate

All the equipment shall be provided with name plates/ model numbers on a suitable place of the equipment.

2.5 Packing, Transportation and Storage.

2. Packing and Transportation.

All the imported equipment shall be packed suitably for export. The Supplier shall be responsible for the equipment to be free from damage or other untoward effects due to transportation. Each package shall be marked as follows with indelible paint in conspicuous English print words:

- a. Consignee
- b. Contact Number
- c. Port of Destination
- d. Final Destination
- e. Number of Case
- f. Gross Weight, Net Weight (kg)
- g. Measurement (length x width x height in cm or inches)

3. EQUIPMENT

The items specified in the Bill of Quantities shall be supplied by the Supplier on the basis of installed and workable conditions on the location designated by the Purchaser.

4. ACCESSORIES AND SPARE PARTS

4.1 Accessories

The Supplier shall provide Original Equipment Manufacturer's standard accessories as well as all the accessories stipulated in the Technical Specification as a part of the equipment.

4.2 Consumables during Commissioning.

Supplier shall prepare sufficient quantity of reagents, test piece, etc. consumed during commissioning of the installed equipment including instructions on operation and maintenance, wherever applicable.

- 4.3 Unloading at the port, customs clearance, inland transportation, unloading and unpacking at site, assembling and installation, testing, commissioning and instructions on site including labor and any equipment to be used during installation, and documentation.

5. INSTALLATION, INSPECTION AND EXPATRIATE INSTRUCTIONS

- 5.1 Each equipment shall be securely installed at designated locations in accordance with the Purchaser's instructions. Prior to the installation, the Supplier shall check and inspect the connection and request the Purchaser to arrange the utility supply from installed outlet by making proper adjustment wherever necessary. The utilities required for installation shall be provided by the Purchaser. The Supplier shall check all components of the equipment to ensure that their working conditions are good in presence of the Purchaser's representative.

5.2 Expatriate for Instructions.

Supplier shall dispatch his Foreign Engineers/Technicians for instructions to the related personnel of the Purchaser on the equipment stipulated in the Bill of Quantities for operation, maintenance and trouble shooting.

6. POST WARRANTY SERVICE REQUIREMENT

In order to provide sufficient maintenance service after the one year warranty period, the Supplier shall offer through his local maintenance service agent (s), the following services.

- a. The Supplier shall guarantee to supply the spare parts of the equipment, if required, upon request by the Purchaser on the cost basis for ten (10) years, upon mutually agreed financial compensation.
- b. In case of major breakage, the Supplier shall send Original Equipment Manufacturers' engineer(s) to the Purchaser within four (4) weeks after the request by the Purchaser to repair such breakage, upon mutually agreed financial compensation.

7. BILL OF QUANTITIES OF ITEMS AND TECHNICAL SPECIFICATIONS

The lists of required goods is given in the subsequent page under the heading "BILL OF QUANTITIES OF ITEMS AND TECHNICAL SPECIFICATIONS".

BILL OF QUANTITIES & SPECIFICATIONS
 (The proposals must be; of advanced technological countries i.e. UK, USA, Japan, Germany and Italy)

MECHANICAL ENGINEERING DEPARTMENT, UET JALOZAI CAMPUS

1 - Thermodynamics Lab (Item-Wise Quote Required)		
S. No	Name of Equipment/specification	Qty
1.	Car Chassis Demonstration Model (Not smaller than 4 x 3 feet)	1
2.	Air Fuel Measuring Apparatus	1
3.	Auto Gear Box (cut section)	1
4.	Adiabatic Bomb Calorimeter	1
5.	Disk Break Demonstration model	1
6.	Fuel injection pump tester	1
7.	Junk Gas Calorimeter	1
8.	Assembly to study convergent and convergent divergent nozzles	1
9.	Steam generator with working model of single cylinder steam engine, gas turbine including condenser. Demonstration model but the size should NOT be table mounted.	1
10.	Diesel engine (Demonstration model)	1
11.	Four Stroke Petrol Engine model (Demonstration model)	1
12.	Two Stroke Petrol Engine model(Demonstration model)	1
13.	Two Stage Compressor test set	1
14.	Tool Kit (above 100 pieces)	1
	Total Price of the Package (including supply, installation, commissioning and training of the concerned staff	

6 - Heat and Mass Transfer (Lot-Wise Quote Required)		
S. No	Equipment	Qty
1	Concentric tube Heat Exchanger	1
2	Film and dropwise condensation unit	1
3	Boiling Heat Transfer unit	1
4	Steam-to-water Heat exchanger	1
5	Laminar/Viscous flow Heat transfer unit	1
6	Thermal conductivity unit (liquid and gas)	1
7	Heat Conduction unit (laminar)	1
8	Free and Forced convection unit	1
9	Linear Heat Conduction unit	1
10	Shell-and-tube Heat exchanger unit	1
11	Plate Heat exchanger	1
12	Radial Heat Conduction unit With Data Acquisition unit	1
13	Laser thermometer	5
15	Thermal Radiation Unit	1
	Total Price of the Package (including supply, installation, commissioning and training of the concerned staff	

CIVIL ENGINEERING DEPARTMENT, UET JALOZAI CAMPUS

1. STRUCTURE LAB (Lot-Wise Quote Required)

S.No	Name of Equipments/Instruments	Qty
(Testing frame should be preferably imported, however, can constructed by a National manufacturer. Items 1.2 and onward, until and unless specified, shall be preferably of Zwick Roell Germany, Instron USA, Galdabini, Italy or equivalent) as per relevant ASTM/AASHTO specifications		
1.1	Steel Test Frame 7m high, 6m wide and 6m long. Built with ASTM 45-65 standard Steel of Specific Gravity =7.85 Main Beams and columns should not be smaller than H700x300x13x24 (Depth: 700mm, Width: 300mm, Web thickness: 13mm, Flange thickness: 24 mm) and secondary beams and columns should not be less than H400x400x13x21 (Depth: 400mm, Width: 400mm, Web thickness: 13mm, Flange thickness: 21mm). Test frame should be capable to safely take load from two 50 Ton and two 25 Ton hydraulic jack loads at one time with deformations not more than 0.136 cm at any point on the frame. With fittings and accessories.	1
1.2	Hydraulic jacks of 50 Ton (Operating load) and 300mm stroke for Item No. 1.1 with pipes, load cell and accessories.	2
1.3	Hydraulic jacks of 30 Ton (Operating load) and 300mm stroke for Item No. 1.1 with pipes, load cell and accessories	2
1.4	Pressure Unit for four hydraulic jacks (Item No. 1.2 & 1.3) with four sets of PLC controlled (digitally operable) three state and pressure control valves. PLC controller with compatible software and PC interface.	1
1.5	Digital Dial Gauges 50mm (0.01mm sensitivity), RS232 connection	6
1.6	Digital Dial Gauges 25mm (0.005mm sensitivity), RS232 connection	6
1.7	Magnetic Dial Gauge Holder with micrometric dial gauge positioning. Magnetic base 50 x 70 x 65 mm. Vertical rod dia. 14 x 200 mm. Horizontal rod dia. 12 x 250 mm.	12
1.8	Vibrating wire surface mount strain gauge, 129 mm gauge length, Range=3000microstrain with dummy gauge and anchor blocks	3
1.9	String pot, displacement sensor. Potentiometer Resistance 0-10K Stroke: 0-1000mm Analog signal output Output:0-10k/0-5V/0-10V	3
1.10	Linear Displacement Sensor, Travel:127 mm Operating Force:28.35 g Linearity:1 %	10

	Voltage Rating: 30 VDC 10 0.15 1.50	
1.11	5 Ton 3/8" CHAIN HOIST Puller Lift Winch Load Block Pulley (for item 2.1) local made Chain Hoist Load Capacity: 5 Ton Lift Height: 10' Chain Type: 3/8" x 10'(with hook) Grade 80 Heavy Duty load chain is made of Alloy Steel with 20MN2 Black Oxide Full Drop Forged Steel Swivel Hooks with Safety Latches as Standard.	1
1.12	2 Ton 1/4" CHAIN HOIST Puller Lift Winch Load Block Pulley (for item 2.1) local made Chain Hoist Load Capacity: 2 Ton Lift Height: 10' Chain Size: 1/4" x 10'(with hook) Grade 80 Heavy Duty load chain, made of Alloy Steel with 20MN2 Black Oxide Full Drop Forged Steel Swivel Hooks with Safety Latches as Standard	1
1.13	Installation/Commissioning and Training shall be provided for each item of this lab i.e. Item 1.1 to 1.12, by the engineer from original equipment manufacturer. If it was not possible then 2 personnel of the Department of Civil Engineering Jalozai Campus shall be provided foreign training at the original manufacturer site for each item (1.1 to 1.12) Total Price of the Package (including supply, installation, commissioning and training of the concerned staff	

ELECTRICAL ENGINEERING DEPARTMENT, UET JALOZAI CAMPUS

1. COMMUNICATION AND NETWORK TECHNOLOGY (Item Wise Quote)

S.No	Description	Qty
1)	<p>Base Platform for Communications (Integrated suite of 12 instruments)</p> <ul style="list-style-type: none"> · Oscilloscope (1.25 MS/s (single channel); 500 kS/s (two channels)), DMM (5 1/2 digits), Function Generator [(0.186 Hz to 5 MHz (sine); 0.186 Hz to 1 MHz (square and triangle)], Variable Power Supply, Bode Analyzer, Dynamic Signal Analyzer, Arbitrary Waveform Generator, DIO, Impedance Analyzer, Two Wire Current Voltage Analyzer, Three Wire Current Voltage Analyzer · Includes Basic Breadboard · Complete integration with Multisim · Area specific power cord is included · Contains a textbook on "Engineering Signals & Systems: Hands-on Labs" 	5
2)	<p>Digital/Analog Communications Add on Board for Base Platform</p> <ul style="list-style-type: none"> · Requires Base Platform for Communications & Signals and Systems 	5

	<ul style="list-style-type: none"> Defined specifically for teaching introductory digital and analog communications topics in electrical and computer engineering curricula. 	
	<ul style="list-style-type: none"> The add-on board for communications base platform features a hands-on, block diagram approach in which students build and measure communications systems that correspond to communications system block diagrams commonly found in textbooks. 	
	<ul style="list-style-type: none"> Working from block diagrams, students create communications circuits by wiring together system components with plug-in patch cables. 	
	List of Experiments	
	<ul style="list-style-type: none"> Introduction 	
	<ul style="list-style-type: none"> How to install and power up 	
	<ul style="list-style-type: none"> An introduction to the test equipment 	
	<ul style="list-style-type: none"> An introduction to the experimental add-in module 	
	<ul style="list-style-type: none"> An introduction to soft front panel control 	
	<ul style="list-style-type: none"> Using it to model equations 	
	<ul style="list-style-type: none"> Amplitude modulation (AM) 	
	<ul style="list-style-type: none"> Double Sideband (DSBSC) modulation 	
	<ul style="list-style-type: none"> Observations of AM and DSBSC signals in the frequency domain 	
	<ul style="list-style-type: none"> AM demodulation 	
	<ul style="list-style-type: none"> Double Sideband DSBSC demodulation 	
	<ul style="list-style-type: none"> Single Sideband (SSB) modulation & demodulation 	
	<ul style="list-style-type: none"> Frequency Modulation (FM) 	
	<ul style="list-style-type: none"> FM demodulation 	
	<ul style="list-style-type: none"> Sampling & reconstruction 	
	<ul style="list-style-type: none"> PCM encoding 	
	<ul style="list-style-type: none"> PCM decoding 	
	<ul style="list-style-type: none"> Bandwidth limiting and restoring digital signals 	
	<ul style="list-style-type: none"> Amplitude Shift Keying (ASK) 1 	
	<ul style="list-style-type: none"> Frequency Shift Keying (FSK) 	
	<ul style="list-style-type: none"> Binary Phase Shift Keying (BPSK) 	
	<ul style="list-style-type: none"> Quadrature Phase Shift Keying (QPSK) 	
	<ul style="list-style-type: none"> Spread Spectrum - DSSS modulation & demodulation 	
3)	Fiber Optic Communications Add on Board	3
	<ul style="list-style-type: none"> Requires Base Platform for Communications & Signals and Systems 	
	<ul style="list-style-type: none"> Ideal for teaching fiber-optic communications 	
	<ul style="list-style-type: none"> Hands-on experiential system featuring the widely accepted block diagram modeling approach 	
	<ul style="list-style-type: none"> Working from block diagrams, students create communications systems by wiring together system components with plug-in fiber-optic patch cables. 	
	<ul style="list-style-type: none"> Out-of-the-box curriculum for telecommunications concepts 	
	Curriculum topics covered	

	<ul style="list-style-type: none"> · An introduction to the base unit equipment · An introduction to the Optical Fiber Trainer · PCM – encoding · PCM – decoding · Sampling and Nyquist in PCM · Time division multiple access (TDMA) · Line coding and bit-clock regeneration · Fibre optic transmission · PCM-TDM 'T1' implementation · Optical signal filtering, splitting & combining · Fiber optic bi-directional communication · Wave division multiplexing (WDM) · Optical losses 	
4)	<p>Software Defined Radios</p> <ul style="list-style-type: none"> · Communication System Teaching Bundle, 2x USRP-2900, Cables, Courseware 	1
5)	<p>Software Defined Radios Active Learning Module</p> <ul style="list-style-type: none"> · Portable self-contained RF learning module · Cost-effective experimentation platform based on Analog Devices AD9363 - Highly Integrated RF Agile Transceiver Xilinx Zynq Z-7010 · RF coverage from 325 MHz to 3.8 GHz · Upto 20 MHz of instantaneous bandwidth · Flexible rate, 12-bit ADC and DAC · One transmitter and one receiver, half and/or full duplex · Matlab, Simulink support · GNU radio sink and source blocks · C, C++, C#, and Python API · USB 2.0 powered interface with micro-usb 2.0 connector · High quality plastic enclosure 	5

2. DIGITAL SIGNAL PROCESSING LAB (Lot-Wise Quote Required)

S.No.	Description	Qty
1)	<p>Base Platform for Signal and Systems (Integrated suite of 12 instruments)</p> <ul style="list-style-type: none"> · Oscilloscope (1.25 MS/s (single channel); 500 kS/s (two channels)), DMM (5 1/2 digits), Function Generator [(0.186 Hz to 5 MHz (sine); 0.186 Hz to 1 MHz (square and triangle)], Variable Power Supply, Bode Analyzer, Dynamic Signal Analyzer, Arbitrary Waveform Generator, DIO, Impedance Analyzer, Two Wire CurrentVoltage Analyzer, Three Wire Current Voltage Analyzer · Includes Basic Breadboard · Complete integration with Multisim · Area specific power cord is included · Contains a textbook on “Engineering Signals & Systems: Hands-on Labs” 	5

2)	<p>Signals & Systems Add on Board for Base Platform</p> <p>The Emona SIGEx-311 add-on board for the NI ELVIS II/+ enables students to patch together continuous time and discrete-time systems in real hardware, for circuit theory, digital signal processing and signals & systems courses. The Emona SIGEx-311 Signal Systems Experimenter for NI ELVIS II/+ makes it possible for students to experience at first hand the interaction between the theory and mathematics of the digital signal processing, circuit analysis and signals and systems textbooks, with the real world of hardware and of signals in wires and waves.</p> <p>The accompanying 16 experiment Lab Manual covers introductory level experiments, designed to provide hands on exercises covering most of the key concepts and challenges in an undergraduate Signal Processing and Signals & Systems courses. SIGEx-311 Lab Manual Experiments The SIGEx experiment manual is designed to provide a practical “hands-on”, experiential, lab-based component to the theoretical work presented in lectures on the topics typically covered in introductory signals courses for engineering students.</p> <p>Readymade courseware with the following modules included</p> <ol style="list-style-type: none"> 1. Special signals – characteristics and applications 2. Systems: Linear and non-linear 3. Unraveling convolution 4. Integration, correlation & matched filters 5. Exploring complex numbers and exponentials 6. Build a Fourier series analyzer 7. Spectrum analysis of various signal types 8. Time domain analysis of an RC circuit 9. Poles and zeros in the Laplace domain 10. Sampling and Aliasing 11. Getting started with analog-digital conversion 12. Discrete-time filters with FIR systems 13. Poles and zeros in the z plane with IIR systems 14. Discrete-time filters – practical applications 	5
3)	<p>Operational Amplifier Applications Add on Board for Base Platform</p> <ul style="list-style-type: none"> · Requires Base Platform for Communications & Signals and Systems · 18 hands on experiments on op-amp applications · Interactive representation of circuits and measurements in eah hands-on project · Step-by step instructions and study guide in lab manual for students · Export experiment results to MS Excel format <p>Curriculum topics covered</p> <ol style="list-style-type: none"> 1. Inverting amplifier 2. Non-Inverting amplifier 3. Voltage follower 4. Differential amplifier 5. Addition and subtraction of analog signals 6. Voltage-Current converter 	5

	7. Integrator	
	8. Differentiator	
	9. Logarithmic amplifier	
	10. Exponential amplifier	
	11. Active rectifier	
	12. Comparator, Schmitt trigger	
	13. Amplitude limiter	
	14. Phase shifter	
	15. Analog Sample-Store circuit	
	16. Sine wave generator based on Wien bridge	
	17. Square- and Triangle Wave Generator	
	18. Monostable multi vibrator	
4)	Digital Electronics and Digital System Development Board for Base Platform	5
	· Zynq-7020 FPGA, programmable with Multisim and LabVIEW	
	· FPGA Low speed peripherals SPI, UART, CAN, I2C	
	· FPGA High speed peripherals 1 G Ethernet, SDIO	
	· 2.8 in. capacitive touch display	
	· 8 LEDs, 8 slide switches, 4 push buttons, 4-digit 7-segment display	
	· USB, Ethernet, and Micro SD card ports	
	· Audio, VGA, and HDMI ports	
	· Requires Base Platform for Signals & Systems	
	Curriculum topics covered	
	1. Lab 1: Multisim Circuit Simulation	
	2. Lab 2: Truth Tables and Basic Logic Gates	
	3. Lab 3: Logic Gates Explored and Boolean Algebra	
	4. Lab 4: Binary Conversion and Adders	
	5. Lab 5: Karnaugh Maps	
	6. Lab 6: Encoders and Decoders	
	7. Lab 7: Multiplexers and Demultiplexers	
	8. Lab 8: Comparators	
	9. Lab 9: Latches and Sequential Logic Circuits	
	10. Lab 10: Flip Flops	
	11. Lab 11: Counters	
	12. Lab 12: Finite State Machines	
	13. Lab 13: Shift Registers	
	14. Lab 14: Semiconductor Memory	
	15. Lab 15: Digital Dice	
	16. Lab 16: Digital Clock - Application Lab #1	
	17. Lab 17: Electronic Safe - Application Lab #2	
	18. Lab 18: Digital Communication - Application Lab #3	
5)	Microcontrollers Applications Bundle	5
	A. Microcontrollers Application Add on Board for Base Platform	

<ul style="list-style-type: none"> Developed for hands-on study of Atmel ATmega16 microcontroller and is based on the Base Platform for Microprocessor & Embedded Systems Design platform.
<ul style="list-style-type: none"> The software is developed in LabVIEW graphical programming environment
<ul style="list-style-type: none"> Requires Base Platform for Signals & Systems
<ul style="list-style-type: none"> 15 hands-on labs
<ul style="list-style-type: none"> Interactive study guide for each experiment
<ul style="list-style-type: none"> Student registration
<ul style="list-style-type: none"> Step-by-step instructions
<ul style="list-style-type: none"> Graphical representation of experimental results
<ul style="list-style-type: none"> The lab has been designed for students to: <ul style="list-style-type: none"> Develop and debug software for Atmel ATmega16 microcontroller using Assembler or C programming languages Assemble circuits on the prototyping board using different peripheral devices Connect meters and tools to study the operation of the assembled circuit
<p>List of Labs</p>
<p>Parallel data input/output</p>
<p>1. Detecting button state and controlling LEDs</p>
<p>Microcontroller interrupts</p>
<p>2. External interrupt processing. Buttons and LEDs</p>
<p>3. External interrupt processing. External events counting</p>
<p>Atmel ATmega16 timers</p>
<p>4. Stepper motor control</p>
<p>5. Timer in external events counting mode</p>
<p>6. Timer in square wave generator mode</p>
<p>7. DC motor control. PWM generation</p>
<p>8. Timer in external events counting mode (capture mode)</p>
<p>Parallel data input/output</p>
<p>9. Scrolling text generation on the LCD</p>
<p>10. Communication with keyboard and LCD</p>
<p>11. Seven-segment display control</p>
<p>Analog signal processing</p>
<p>12. Analog comparator</p>
<p>13. Analog-to-digital converter</p>
<p>14. Digital-to-analog converter (sinewave generator)</p>
<p>Serial Peripheral Interface (SPI)</p>
<p>15. SPI interface in duplex mode</p>
<p>B. Max32: Arduino-programmable PIC32 Microcontroller Board</p>
<ul style="list-style-type: none"> PIC32MX7xx
<ul style="list-style-type: none"> 512KB Flash
<ul style="list-style-type: none"> 128KB RAM

	<ul style="list-style-type: none"> 80 MHz operating speed Four SPI and five I2C connectors 16 channel 10-bit ADC, five compare/PWM outputs Dual CAN controllers 83 available I/O pins 3.3V operating voltage 16 analog inputs Connects to a PC using a USB A to mini-B cable (not included) USB 2.0 OTG controller 10/100 Ethernet MAC User LED Programmable with MPIDE 	
	<p>C. uC32: Arduino-programmable PIC32 Microcontroller Board</p> <ul style="list-style-type: none"> PIC32MX3xx series 512KB Flash 32KB RAM 80 MHz operating speed Two SPI and two I2C 16 channel 10-bit ADC, five PWM outputs 42 available I/O pins 3.3V operating voltage 12 analog inputs PC connection uses a USB A to mini-B cable (included) 7V to 15V input voltage +/-18mA DC current per pin 75mA typical operating current Two user LEDs Programmable with MPIDE 	
6)	<p>Microcontroller I/O and inter-communication Add on Board for Base Platform</p> <ul style="list-style-type: none"> It is ideally suited to introduce students to fundamentals of microcontroller I/O and inter-communication including industry standards, such as SPI, I²C and CAN busses. <ul style="list-style-type: none"> Developed exclusively for ELVIS platform and LabVIEW™ software, the system teaches students how to control the microcontroller at the register level and build controllers to interact with sensors, communication networks and human interface devices. <p>Features</p> <ul style="list-style-type: none"> Compact digital interfacing system for ELVIS II dsPIC33e microcontroller with ADC, SPI and I²C interfaces, UART and input capture Two position encoders Analog input signal generation via potentiometer Keypad and touch screen for user interface LCD screen and tri-colour LED for display 	5

	<ul style="list-style-type: none"> · Colour sensor, connected to LED via fiber-optic cable · I²C accelerometer, gyroscope, thermometer, and IR range detector · SPI RAM and Flash memory chips · SD card slot with SPI interface · Fiber-optic serial I/O connected to UART · Two external CAN bus connectors with SPI CAN controller chips and built-in termination resistance · Comprehensive digital resources and courseware included · Fully compatible with LabVIEW™ · Fully documented system models and parameters provided for LabVIEW <p>Readymade Curriculum Topics</p> <ol style="list-style-type: none"> 1. Microcontroller I/O 2. Hardware control registers 3. Data storage in flash and RAM 4. SPI and I²C communication 5. CAN busses and inter-device communications 6. User I/O, controls and displays 7. Hardware integration 	
7)	<p>Educational Digital Signal Processing (DSP) Device</p> <p>Consists of a multifunction DAQ device and a DSP board</p> <p>Multifunction DAQ device</p> <ul style="list-style-type: none"> · Compact, portable, and USB-powered educational device for use anywhere, anytime <p>Oscilloscope, DMM, Function Generator, Variable Power Supply, Bode Analyzer, Dynamic Signal Analyzer, Arbitrary Waveform Generator, DIO,</p> <ul style="list-style-type: none"> · Single device provides 8 plug-and-play computer-based lab instruments · Data acquisition engine with analog inputs/outputs and digital lines · Simulate and compare with Multisim SPICE software · Onsite Training by OEM <p>DSP Board</p> <ul style="list-style-type: none"> · Entry-level teaching tool for hands-on learning of digital filters · Teach digital filter design, calculate coefficients, and observe poles and zeros · 50 MHz microchip DSP with anti-aliasing filters and reconstruction filters on the output · 32-bit precision to create filters up to the 10th order 	10
8)	<p>FPGA based Embedded Design Device</p> <ul style="list-style-type: none"> · Affordable tool to teach and implement multiple design concepts with one device · 10 analog inputs, 6 analog outputs, 40 digital I/O lines · Wireless, LEDs, push button, accelerometer onboard · Xilinx FPGA and dual-core ARM Cortex-A9 processor · Fully programmable with LabVIEW or C; adaptable for different programming levels <p>Sensors and Actuators Kit</p>	2

	· Barrel connector with leads	
	· Assorted capacitors	
	· Diodes	
	· 7-segment display	
	· Mechanical rotary encoder	
	· Photo interruptor (light sensor with LED)	
	· Assorted op-amps	
	· Assorted LEDs	
	· Small DC motor (1 VDC to 3 VDC, no load speed: 6600 rpm)	
	· Microphone with audio jack	
	· MXP Breadboard Accessory	
	· Potentiometer (500 kΩ)	
	· Relay	
	· Assorted resistors	
	· Piezoelectric sensor	
	· Photocell	
	· 2 Hall effect sensors (latch and switch)	
	· Buzzer	
	· Assorted switches (DIP, slide, and rotary)	
	· Thermistor (NTC: 10 kΩ, 25 degrees)	
	· Assorted transistors	
	· Force sensing resistor	
	· Wire kit	
	Keypad	
	Digital temperature sensor (I2C)	
	Character LCD (I2C, SPI, and UART)	
	Digital potentiometer (SPI)	
	Bluetooth interface (UART)	
	EEPROM (SPI)	
	· LED matrix	
	Geared motor 19:1 (includes encoder for rotation and speed, 12 V)	
	Ultrasonic range finder (accurate readings of 0 in. to 255 in. or 6.45 m)	
	Compass	
	Servo motor: standard (215 degrees rotation)	
	Servo motor: continuous rotation	
	Accelerometer (3 axis, digital - SPI and I2C)	
	H-bridge driver (compatible with gear motor)	
	Gyroscope (3 axis, digital - SPI and I2C)	
	Infrared proximity sensor (10 cm to 80 cm)	
	Ambient light sensor (SPI)	
9)	Embedded/DSP – Analog Devices ADSP-BF537 Blackfin Processor	2
	This module builds on NI LabVIEW Embedded technology, which facilitates dataflow graphical programming for embedded systems and includes hundreds of analysis and signal processing functions, integrated	

	I/O, and an interactive debugging interface. With the Embedded Module for ADI Blackfin, you can enable cache, optimize linking, and view live front panel updates via JTAG, serial, or TCP/IP, as well as use VisualDSP++ compiler options through LabVIEW. The Embedded Module for ADI Blackfin includes the LabVIEW C Code Generator, which generates C code from the LabVIEW block diagram.	
	· Up to 600MHz High Performance Blackfin processor	
	· 132KB of on chip full speed SRAM	
	· 10-stage RISC MCU/DSP pipeline with mixed 16-/32-bit ISA for optimal code density	
	· Powerful and flexible cache architecture suitable for soft real-time control tasks and industry-standard operating systems, plus hard real-time signal processing	
	· Full SIMD architecture, including instructions for accelerated video and image processing	
	· Embedded IEEE 802.3 Compliant 10/100 Ethernet MAC with buffered oscillator output to a separate PHY	
	· Controller Area Network (CAN) 2.0B interface	
	· Two-Wire Interface Controller	
	· Glueless Video Capture/Display Port	
10)	Reconfigurable Arduino Digital Signal Processing boards	10
	Includes	
	Uno R3 board with USB Cable, 400 holes bread board, Blue plate ,Digital tube (1pc/each), 20cm Male to Male DuPont cable, With hat buttons, Buzzer /Tilt Switch (2pcs/each), Potentiometer, Temp and humidity sensor, Flame sensor, LM35 temp sensor, Analog temp sensor, Photoresistor, RGB light,	
	Resistor 220R/1K/10K(10pcs/each)	
	LED lights Yellow/Green/Red/Blue(5pcs/each), Advanced Plastic Box	
11)	Reconfigurable Raspberry Pi (Raspberry Pi 3.0)	10
16)	G540 Universal Micro controller Programmer	5
17)	Lab table with a PC Holder	10
18)	Lab swivel chairs	20
19)	Storage cabinet with two hinged doors, Approximate dimensions 1000x600x2039mm with five Shelf for storage cabinet, 960x540x25mm	2
	Total Price of the Package (including supply, installation, commissioning and training of the concerned staff	

INDUSTRIAL ENGINEERING DEPARTMENT, JALOZAI CAMPUS
1. CENTRAL WORKSHOP MACHINING (Item-Wise Quote)

S No	Item Description	Qty
1	Desktop Servo CNC Lathe Cuts steel, aluminum, brass, plastic, wood, wax , Direct import from CAD for simple designs, CAM Software, Windows Based CNC Control Software, Integrated Motor Mounts, High-Speed Steel Cutting Tool, 3-Jaw Self-Centering , Jacobs Tailstock Drill Chuck, Morse Arbor with Drawbolt, CD with Hardware Manuals, All Required Cables	2
2	Desktop Microstepping Vertical CNC Mill 220VAC, Variable Spindle Speeds, Cuts any material – plastic, metal, and wood, Cuts hard metals including: steel, stainless steel, titanium, iron, etc., Motor Mounts, belts and pulleys, CNC Software, 3-Axis, stepper motors with cables, CD with Hardware Manuals, All Required Cables, Mill Accessory Kit	2
3	Desktop DRO Precision Lathe Adjustable “Zero” Handwheels, DC motor, speed control, crossslide, position pulleys, kevlar reinforced drive belt, three-wire power cord, anti-backlash adjustment on Y-axis leadscrew, Faceplate, lathe dog, dead centers, hexagonal keys, tool post, high speed cutting tool, instruction booklet, rocker tool post, DRO, self-centering chuck, tailstock drill chuck w/ key, Morse arbor with drawbolt, Steady rest, Live Center, Compound Slide, Cutoff Tool and Holder, HSS Cutting Tool Set (LH, RH, Boring), T-driver, Center Drill Set, Thread Cutting Attachment	5
4	Desktop 8 Direction DRO Vertical Milling Machine VDC motor with electronic speed controller, base, adjustable “zero” handwheel on the Z-axis and adjustable “zero” handwheels on the X- and Y-axes, table with T-slots, Jacobs drill chuck w/ key, Morse arbor with drawbolt , column riser block, Laser-engraved scales, Pulleys, drive belt, hexagonal keys, spindle bars, gib removal tool, three-wire power cord, instruction manual, Oil reservoirs to help keep critical parts lubricated, Brass leadscrew cover, Step block hold-down set, hex T-driver, center drill set, Fly cutter w/carbide bit, mill collet set w/drawbolt, flute double-ended end mill set, end mill holder, milling vise	5
5	15" Tabletop Drill Press Heavy duty steel with cast-iron base, 15" , 460V 3-Phase 2-speed Motor, Speed RPM in steps with use of variable-belt drive, Drilling capacity up to 11/16" in steel, Emergency stop switch; Safety drill guard , no-volt release, thermal overload protection	2
6	4" Cross Slide Drill Press Vise to turn your drill press into a milling machine. Heavy duty construction, Precision threaded clamping and cross slide screws ,Cross slides with removable adjusting crank handles	10
7	Belt Grinders 3-Phase 460V, Dust Bag, Built-in Exhaust System	2
8	16" Industrial Bandsaw, 3 Phase Motor with blade, Rip fence, electronically braked motor, Extraction port.	2
9	10" Radial Arm Saw with carbide blade, technology to align the blade to the work piece, Sturdy work surface to accommodate large work piece, Automatic blade brake	2
10	8-Inch Bench Top Jointer/Planer Precision adjustment knobs, compact design,	2
11	Overarm High Speed Router Fence or pin routing, Foot control for spindle movement, Head assembly travels on dovetail ways, 220V, single-phase, Shielded and permanently lubricated ball-bearings, Power transfer: single flat belt, Tool box, Hex key wrench set, Grease gun, collet, Spindle wrench set, plunge router bit with shank, table pins for pin routing, Stand	2
12	14" Ferrous Cold Saw for steel, stainless and tough to cut alloys Spring loaded whole hand trigger to start or stops the sawing process for easy smooth cutting and increased user safety, Quick tension and release mitering capabilities with stops at 45° right, 45° left, and 90° (center), capable of slotting, cast iron blade guard system to permit quick and easy blade changes without removing the guards, Hardened and ground worm screw and wheel drive gear box to operate in an oil bath for added durability	2

13	14" Non-Ferrous High Speed Manual Cold Saw spring loaded whole hand trigger to start or stop the sawing process for easy smooth cutting and increased user safety, Quick tension and release mitering capabilities with stops at 45° right, 45° left, and 90° (center), capable of slotting, blade guard system to permit quick and easy blade changes without removing the guards, Heavy-Duty cast iron frame base with easy access storage provides a stable cutting platform	2
14	Fuel-fired Bale-out Furnace Melting rate 220 [kg/h Al at 700°C], Capacity 1150 Kg CU, 350 Kg Al, thermal insulation, energy consumption 1.3 kWh / kg Al, Emergency outlet drain, Burner Power 300 Kw, Max Temp 1200°C	1
15	Gravity Die Casting Machine for the casting of brass and other copper alloys poured by gravity into the die to obtain medium and large size pieces or small size pieces by using multi-cavity dies. Frontal and side pouring, Independent dipping tanks, Presetting of dipping angle, Frontal positioning of dies for assembling and cleaning, Bench tilting and die closing adjustable for different die types, Die rotation in dipping tanks while submerged, Emergency pushbutton for die opening, Safety valves on cylinder for bench tilting, Static limit switch no mechanical contact, Mechanical movements on conical bearing, Adjustable flow rate pump, Led on hydraulic valves, Led on limit switch, Counter for pouring count	1
16	Sand Mixer (Fast) for the rapid preparation of mixtures of cores made with sand, resin and catalyst. S Shaped Propeller	1
	Storage Facilities	2
20	Storage cabinet, 2 hinged doors, 1000x600x2039mm	2
21	Shelf with grooved mat on underside, 960x540x19mm	6
22	Shelf with grooved mat on both sides, 960x540x19mm	2
23	Shelf with grooved mat on upper side, 960x540x19mm	2
24	Storage cabinet, 2 hinged doors, 1000x600x2039mm	10
25	Shelf for storage cabinet, 960x540x25mm	1
26	Storage cabinet, 2 doors for storage trays, 788x735x2039mm	1
27	Wall-mounting first-aid kit	
	Heavyduty Workbench	
28	workbench, 2000x750x859, 3 drawers, 2 doors, multiplex table top, 40 mm	20
29	Parallel vice with rigid tubing jaws, width 120 mm	20
30	Mounting screw kit for vice, for worktops with 40mm thickness	20
31	Function strip with 3x 230-V earth-contact sockets + switches, 1x CEE socket, 400V, 2x compressed air outlets, 875x60x13	40
32	Height adjustment for levelling workbench	80
33	4-fold drawer insert, height 200 mm, for drawer inside dimensions 450x600mm	40
34	6-fold drawer insert, height 100 mm, for drawer inside dimensions 900x600mm	40
35	8-fold drawer insert, height 200 mm, for drawer inside dimensions 600x600mm	40
36	Office swivel chair with casters and continuous height adjustment via gas lift	40
	Instructor Workbench	
37	Table top, 1800x900mm	1
38	Under-table cabinet, floor standing, 5 drawers, utensil drawer, central locking	1
39	Container on rollers, 5 drawers + utensil drawer, central locking	1

40	Multiple socket outlet, 6 fold, with illuminated switch	1
41	Floor mounting set for lab tables, x2	1
42	wiring installation duct for mounting on aluminium profile table legs	1
43	Monitor holder for flat screen monitor of weight up to 15kg,VESA 75/100	1
44	Keyboard and mouse platform for the aluminium profile system	1
45	Cushioned swivel chair with armrests, adjustable to any height by means of gas lift pillar	1

Local Purchase Equipment in Support of Imported Labs

BILL OF QUANTITIES & SPECIFICATIONS

MECHANICAL ENGINEERING DEPARTMENT, UET JALOZAI CAMPUS

1 - Thermodynamics Lab		
S. No	Name of Equipment/specification	Qty

15.	First Aid Kit	1
16.	Fire Extinguisher	1
17.	Safety Gloves-Leather/Oil Resistant	3
18.	Safety Goggles	3

2 - Engineering Drawing and Graphics Lab			
S. No.	Item	Specs.	Qty
1	Drawing Board with stands	Standard A3 size	80
2	Stools	Standard	80
3	T- Square	Plastic	80
4	Drawing Models	Wooden	30
7	Overhead Screen	Latest	1
8	Sound System	For lecture delivery	1

3 -Computational Dynamics, Simulation and Modelling Lab

S.No	Item	Description (generic)	Quantity
General Purpose Lab			
1	PCs	(Intel Core i7, Speed: 3.2 GHz, RAM: 16 GB, Storage Capacity (as Tested): 512 GB, SSD, 750 GB HDD Dedicated Graphics Card 2GB, Opical Drive: Dual-Layer DVD+/-RW, LED Screen: 47.01 cm 18.5 inches (18.5-inch wide viewable image size), Aspect Ratio: Widescreen (16:9)) OR Higher, wireless card	80
2	PC Server	(Two Intel® Xeon® Scalable processors Multi-core, 24 DDR4 DIMM slots, supports RDIMMS/LRDIMMS, speeds up to 2666MT/s, 3TB, Up to 12 NVDIMM, 192GB max Supports registered ECC DDR4 DIMMs only, 8 x USB (1 x USB 2.0. 1 x USB 3.0, 6 x USB 2.0/3.0), Dedicated iDRAC Direct Micro-USB Video card: VGA, 8 PCIe Gen3 slots, Security Features: TPM 1.2/2.0 optional, Cryptographically signed firmware, Hardware Root of Trust, Secure Boot System Lockdown, System Erase. Screen:LED Screen: 47.01 cm 18.5 inches (18.5-inch wide viewable image size)) OR Higher	1
		Simulation Licensed Software tools, ProEngineer, Ansys, NX, Simul8, Matlab, AutoCAD etc	4 each set

4 - Metallurgy Lab		
S.No	Equipment Name	Qty
14	First Aid Kit	1
15	Fire Extinguisher	1

5 - Mechanics of Machines and Vibrations		
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S. No	Equipment Name	Qty
9	First Aid Kit	1
10	Fire Extinguisher	1
11	Safety Gloves-Leather/Oil Resistant	3
12	Safety Goggles	3

Department of Computer Science and Information Technology, Jalozai Campus

Hardware Lab (item wise)

S. No	Item	Description (generic)	Quantity
1	Designing and Simulating tools	Computer Aided Design latest version	2
2	Spectrum Analyzer	(Handheld Digital Spectrum Analyzer- Frequency Band: 15 MHz - 2.7 GHz, Frequency Span: 112KHz to 100 MHz - Average Noise Level: -110dBm) OR Higher	5
3	Oscilloscope	200 MHz bandwidth, 2 to 4 channels	5
4	Solderless Brad Boards		40
5	Wire stripping pliers	(Multi-function Automatic Wire stripping pliers (peeling, cutting, crimping). For stripping wire from AWG 24/10(0.2 to 6.0 mm)) OR Higher	10
6	Soldering Gun Kit	260/200W Soldering Gun with tin plated copper tip 2 untinned tips	10
7	Component Boxes	Transistors, and resistors etc, ICs (AND/OR Gates etc)	15
8	Electrical Cables		As per requirement
9	Multimeter (analogue and digital)	Measurements for voltage AC/DC, current AC/DC, resistance, capacitance	40
10	PC Server	(Two Intel® Xeon® Scalable processors Multi-core, 24 DDR4 DIMM slots, supports RDIMMS/LRDIMMS, speeds up to 2666MT/s, 3TB, Up to 12 NVDIMM, 192GB max Supports registered ECC DDR4 DIMMs only, 8 x USB (1 x USB 2.0. 1 x USB 3.0, 6 x USB 2.0/3.0), Dedicated iDRAC Direct Micro-USB Video card: VGA, 8 PCIe Gen3 slots, Security Features: TPM 1.2/2.0 optional, Cryptographically signed	1

		firmware, Hardware Root of Trust, Secure Boot System Lockdown, System Erase, LED Screen: 47.01 cm 18.5 inches (18.5-inch wide viewable image size)) OR Higher	
11	Ardino Starter Kit	Uno R3 board with USB Cable, 400 holes bread board, Blue plate ,Digital tube (1pc/each), 20cm Male to Male DuPont cable, With hat buttons, Buzzer /Tilt Switch (2pcs/each), Potentiometer, Temp and humidity sensor, Flame sensor, LM35 temp sensor, Analog temp sensor, Photoresistor, RGB light, Resistor 220R/1K/10K(10pcs/each) LED lights Yellow/Green/Red/Blue(5pcs/each), Advanced Plastic Box	80
12	PCs	(Intel Core i7, Speed: 3.2 GHz, RAM: 16 GB, Storage Capacity (as Tested): 1.25 TB, HDD, SSD, Dedicated Graphics Card 2GB, Opical Drive: Dual-Layer DVD+/-RW, LED Screen: 47.01 cm 18.5 inches (18.5-inch wide viewable image size), Aspect Ratio: Widescreen (16:9)) OR Higher	5
Active Equipment			
1	LAN Switches	(48 Ethernet 10/100/1000, 2 x GbE SFP uplink ports, LAN Lite software) OR Higher	5
2	Core Router	(3 Integrated 10/100/1000 Ethernet ports with 1 port capable of RJ-45 or SFP connectivity, 1 service module slot, 4 Enhanced High-Speed WAN Interface Card (EHWIC) slots, 3 onboard digital signal processor slots, Fully integrated power distribution to modules supporting 802.3af Power over Ethernet (PoE) and Cisco Enhanced PoE) OR Higher	1
3	Plotter	(24" inch - A1 - 4 Colour - General Purpose Technical Plotter) OR Higher	1
4	UPS	1500VA High Performance UPS	4
5	Ethernet Cables	CAT7A Bulk Ethernet Cable OR Higher	As per requirement

6	Cable connectors	(Shielded RJ45 Connector for CAT7 Solid and Stranded Cable) or Higher	600
7	I/O + Face Plate	(CAT7 RJ45 SOCKET WALL FACE PLATE) or Higher	200
8	Patch Cables	3 Foot CAT 7 Patch Cable- CAT 7 Shielded Patch Cord	50
Print/File Servers and Printers/Scanners			
1	PC Server	(Two Intel® Xeon® Scalable processors Multi-core, 24 DDR4 DIMM slots, supports RDIMMS/LRDIMMS, speeds up to 2666MT/s, 3TB, Up to 12 NVDIMM, 192GB max Supports registered ECC DDR4 DIMMs only, 8 x USB (1 x USB 2.0. 1 x USB 3.0, 6 x USB 2.0/3.0), Dedicated iDRAC Direct Micro-USB Video card: VGA, 8 PCIe Gen3 slots, Security Features: TPM 1.2/2.0 optional, Cryptographically signed firmware, Hardware Root of Trust, Secure Boot System Lockdown, System Erase) OR Higher	2
2	Network Printers	(Color laser printer, scanner, copier, fax, built-in Ethernet/WiFi, 2-sided/duplex printing, adjustable 8" color touchscreen, 100-sheet auto document feeder, speeds up to 45 pages per minute, 650-sheet paper input capacity, up to 7,500-page monthly volume, Paper sizes supported: Letter, legal, executive, 4x6, 5x8, 8.5x13) OR Higher	2
3	Local Printers	(LaserJet, Resolution 48*600 dpi, print speed 40ppm, print size A5, copy scanning facility) OR Higher	2
4	Scanners	(Scan Speed (ppm) 30, Pages in Feeder 50, Media Size (inches) 8.5 x 196, Scan Resolution (dpi) 600, Duplexing, Automatic Text Recognition) OR Higher	2
Accessories			
1	Accessories	Keyboards, mice, cables/adaptors, others	As per requirement
2	Backup Storage	(User-selectable RAID 0/1, (default setting: RAID 0), data protection (drive mirroring: RAID 1), Integrated backup software, Cloud backup with Dropbox, System-level backup, Speed and security with hardware encrypted RAID) OR Higher	3

Multimedia			
1	Projectors	(Connectivity HDMI, Aspect Ratio 4:3, Resolution 1024x768, Video Modes 720p, 1080i, 1080p/60 576i, 576p, 480p 480i, Brightness 2,700 Lumens, Contrast 3,000:1, 3D Type - Speakers 1.0 W Mono, Power 289 Watts, 100V - 240V) OR Higher	10
2	Screens	100" Projector Screen, 100 inch Diagonal 16:9 Projection HD Manual Pull Down	10
Miscellaneous			
1	Closet	(Closet for datacenters (Scale & Density- 1 to 2 Racks Up to 6KVA), Access & Control, Power Quality Peripherals and Cooling, Monitoring) OR Higher	5
2	4U Racks	For switches, routers	10
3	Ducking and piping	For network connectivity	As per requirement
4	Air Conditioner	For computer Labs	10
Software			
1	Modeler	Rational Rose latest version	5
2	Oracle	Oracle development suite (standard edition)	1
3	Numerical computing environment	MATLAB latest version (Academic use-Individual License)	2
4	OPNeT	Riverbed Modeler	1
5	Predictive Analytics Tool	SPSS (Shared Use)	2
6	Antivirus Endpoint Protection	Centralized protection for network systems	As per requirement

Networks Lab (Lot wise)

S.No	Item	Description (generic)	Quantity
1	PCs	(Intel Core i7, Speed: 3.2 GHz, RAM: 16 GB, Storage Capacity (as Tested): 1.25 TB, HDD, SSD, Dedicated Graphics Card 2GB, Optical Drive: Dual-Layer DVD+/-RW, LED Screen: 47.01 cm 18.5 inches (18.5-inch wide viewable image size), Aspect Ratio: Widescreen (16:9)) OR Higher	20

2	Routers	(3 Integrated 10/100/1000 Ethernet ports with 1 port capable of RJ-45 or SFP connectivity, 1 service module slot, 4 Enhanced High-Speed WAN Interface Card (EHWIC) slots, 3 onboard digital signal processor slots, Fully integrated power distribution to modules supporting 802.3af Power over Ethernet (PoE) and Cisco Enhanced PoE) OR Higher	3
3	Switches	(48 Ethernet 10/100/1000, 2 x GbE SFP uplink ports, LAN Lite software) OR Higher	5
4	Network Tool Kit	Network cabling and troubleshooting	3
5	WiFi Routers	(IEEE 802.11ad, 60GHz band, AD7200 Multi-band with 4-Stream technology delivers up to 7200Mbps Wi-Fi speeds over 2.4GHz (800Mbps), 5GHz (1733Mbps), and 60GHZ (4600Mbps) bands) OR Higher	10
6	Wlan Controller	(Supports 12, 25, 50,100, 250, or 500 access points, 802.11n and optimized for 802.11ac networks) OR Higher	1

Systems Lab (Item Wise)

S. No	Item	Description (generic)	Quantity
1	Switches	Unmanaged, Plug-and-Play, 19 inch Rackmountable, 16 x ports at 10/100Mbps (16 out of 16 are PoE ports), 2 Gigabit combo ports, 260W of max power (up to 30W per port, complies with IEEE 802.3af/at), Ideal for IP cameras, IP phones and Wireless Access Points, Auto-MDI/MDI-X function for any port	4
2	Worker Nodes for Cluster (PCs)	(Intel Core i7, Speed: 3.2 GHz, RAM: 16 GB, Storage Capacity (as Tested): 1.25 TB, HDD, SSD, Dedicated Graphics Card 2GB, Optical Drive: Dual-Layer DVD+/-RW, LED Screen: 47.01 cm 18.5 inches (18.5-inch wide viewable image size), Aspect Ratio: Widescreen (16:9)) OR Higher	20
3	Laptop Tablet	(Intel Core i7, 16GB RAM, 2GB dedicated Graphics card, 1 TB hard drive, 128 GB SSD, 13" Widescreen HD (720p) OR Higher	2
4	PC Server	(Two Intel® Xeon® Scalable processors Multi-core, 24 DDR4 DIMM slots, supports RDIMMS/LRDIMMS, speeds up to 2666MT/s, 3TB, Up to 12 NVDIMM, 192GB max Supports registered ECC DDR4 DIMMs only, 8 x USB (1 x USB 2.0. 1 x USB 3.0, 6 x USB 2.0/3.0), Dedicated iDRAC Direct Micro-USB Video card: VGA, 8 PCIe Gen3 slots, Security Features: TPM 1.2/2.0 optional, Cryptographically signed firmware, Hardware Root of Trust, Secure Boot System Lockdown, System Erase, LED Screen:	1

		47.01 cm 18.5 inches (18.5-inch wide viewable image size)) OR Higher	
5	Raspberry Pi	(Raspberry Pi 3.0) OR Above	60
6	PCs	(Intel Core i7, Speed: 3.2 GHz, RAM: 16 GB, Storage Capacity (as Tested): 1.25 TB, HDD, SSD, Dedicated Graphics Card 2GB, Opical Drive: Dual-Layer DVD+/-RW, LED Screen: 47.01 cm 18.5 inches (18.5-inch wide viewable image size), Aspect Ratio: Widescreen (16:9), LED Screen: 47.01 cm 18.5 inches (18.5-inch wide viewable image size)) OR Higher	20
7	LEGO Brick Pi Starter Kit	(BrickPi+ board, BrickPi Upgraded 6-sided Acrylic Case, Battery Power Pack, microSD Card with Software "Raspbian for Robots", Mini Wi-Fi Dongle, Raspberry Pi 3 Model B, Power, Ethernet Cable) OR Higher	10

Programming Lab (Item Wise)

S.No	Item	Description (generic)	Quantity
1	PCs	(Intel Core i7, Speed: 3.2 GHz, RAM: 16 GB, Storage Capacity (as Tested): 1.25 TB, HDD, SSD, Dedicated Graphics Card 2GB, Opical Drive: Dual-Layer DVD+/-RW, LED Screen: 47.01 cm 18.5 inches (18.5-inch wide viewable image size), Aspect Ratio: Widescreen (16:9)) OR Higher, Wireless Card	40
2	PC Servers	(Two Intel® Xeon® Scalable processors Multi-core, 24 DDR4 DIMM slots, supports RDIMMS/LRDIMMS, speeds up to 2666MT/s, 3TB, Up to 12 NVDIMM, 192GB max Supports registered ECC DDR4 DIMMs only, 8 x USB (1 x USB 2.0. 1 x USB 3.0, 6 x USB 2.0/3.0), Dedicated iDRAC Direct Micro-USB Video card: VGA, 8 PCIe Gen3 slots, Security Features: TPM 1.2/2.0 optional, Cryptographically signed firmware, Hardware Root of Trust, Secure Boot System Lockdown, System Erase, LED Screen: 47.01 cm 18.5 inches (18.5-inch wide viewable image size)) OR Higher	1

High Performance Computing (Lot Wise)

S.No	Item	Description (generic)	Quantity

1	Data Nodes	(12-24 1-4TB hard disks in a JBOD (Just a Bunch Of Disks) configuration; Intel quad-/hex-/octo-core CPUs, running at least 2-2.5GHz; 6 nodes with 64 GB of 1866 Mhz RAM DDR3 memory; Bonded Gigabit Ethernet or 10Gigabit Ethernet) OR Higher	14
2	Task Tracker	(12-24 1-4TB hard disks in a JBOD (Just a Bunch Of Disks) configuration; Intel Xeon quad-/hex-/octo-core CPUs, running at least 2-2.5GHz; 64-512GB of RAM; Bonded Gigabit Ethernet or 10Gigabit Ethernet) OR Higher	10
3	Server	(12-24 1-4TB hard disks in a JBOD (Just a Bunch Of Disks) configuration; Intel Xeon quad-/hex-/octo-core CPUs, running at least 2-2.5GHz; 512 GB of RAM; Bonded Gigabit Ethernet or 10Gigabit Ethernet) OR Higher	1
4	Name Node	(4-6 1TB hard disks in a JBOD configuration (1 for the OS, 2 for the FS image [RAID 1], 1 for Apache ZooKeeper, and 1 for Journal node); Intel Xeon quad-/hex-/octo-core CPUs, running at least 2-2.5GHz; 128GB of RAM; Bonded Gigabit Ethernet or 10Gigabit Ethernet) OR Higher	2
5	Racks		2
6	Switches	(10 GigE switch) OR Higher	2
7	System Software	(Operating System: Scientific Linux 7 and Windows; Cluster Provisioning: Warewulf Cluster Toolkit Or Hadoop MapReduce; Infinband Stack: OFED; Message Passing Library: OpenMPI; Compiler: Intel; Job Scheduler: SLURM with NHC, Hadoop Job Scheduler; Software management: Environment Modules; HDFS; Spark; Hbase; Hive) OR Higher	as per requirement

Network Infrastructure (Package-I Lot Wise)

No	Item	QTY
Active Equipment		
1	Core Switch (Up to 928 Gbps wired capacity, 48 Gbps per slot capacity, 55,000 MAC Addresses, 256,000 IPv4 routing entries, Up to eight nonblocking 10 Gigabit Ethernet uplinks, Support of 250 access points and 4000 wireless clients in wireless controller-less deployments, 200 ports of nonblocking Gigabit Ethernet SFP, Scalable routing (IPv4, IPv6, and multicast) tables and Layer 2 tables, Dual stack support for IPv4/IPv6 and Dynamic hardware forwarding-table allocations, Redundant power supplies, Redundant supervisor engines, 384 ports of nonblocking 10/100/1000, Up to 20 Gigabits of wireless termination capacity for a wireless controller-less design)	1
2	48 Port POE Access Switch (48 Gigabit Ethernet ports with line-rate forwarding performance, Power over Ethernet Plus (PoE+) support, Gigabit Small Form-Factor Pluggable (SFP) or 10G SFP+ uplinks, USB and Ethernet management interfaces, Identify, classify and control of trusted internal network traffic through Domain Name System as an Authoritative Source, 2 SFP+ uplink interfaces)	25
3	24 Port Access Switches (24 Gigabit Ethernet ports with line-rate forwarding performance, Gigabit Small Form-Factor Pluggable (SFP) or 10G SFP+ uplinks, Power over Ethernet Plus (PoE+), Application visibility and capacity planning with integrated Full)	25
4	24 Port Access Switches (High-Performance 10 Gigabit Ethernet, Power over Ethernet Plus (PoE+) and 60W PoE, Fast Ethernet connectivity with 10 Gigabit uplinks, 24 ports of Gigabit Ethernet, 802.1d spanning tree support, IEEE 802.3ad Link Aggregation Control Protocol, Embedded Secure Sockets Layer,) encryption protects management data traveling to and from the switch. Extensive access control lists,)	25

5	Wireless Controller (Simultaneously manage up to 500 access points, Wired speed, nonblocking performance for 802.11n and optimized for 802.11ac networks, control and provisioning of wireless access points (CAPWAP)-compliant DTLS encryption, IEEE 802.3 10BASE-T, IEEE 802.3u 100BASE-TX specification, 1000BASE-T. 1000BASE-SX, 1000-BASE-LH, IEEE 802.1Q Vtagging, and IEEE 802.1AX Link Aggregation, SNMP v1, v2c, v3)	1
6	Access Points (802.11ac Wave 2, multiple-input multiple-output (MIMO) technology, MRC, 802.11ac beamforming (transmit beamforming), 802.11 DFS, Packet aggregation: A-MPDU (Tx/Rx), A-MSDU (Tx/Rx),)	100
7	FireWall (Unlimited users/nodes, Up to 1.2 Gbps or 650 Mbps Throughput, up to 425 Mbps 3DES/AES VPN Throughput, 4 Gigabit Ethernet 1 Fast Ethernet Network integrated port, more than 200 VLAN interfaces)	1
8	Server 156 GB RAM, 24TB hard disk, 3.0 GHz above processor or Above	1
Passive Equipment		
8	Laying Testing Commissioning of 180 Data Points for Access Points	100
9	Patch Cords 1 meter	800
10	Patch Cords 3 meter	800
11	Optical Fiber Patch Cords 3 meter	200
12	Civil Works, Out Door Optical Fiber Laying, Testing, Commissioning between Academic blocks (8 blocks), Hostels (9 block), Administration blocks (6), Faculty housing facility internet facility and connecting the server room. (including fibre optic cable, material, civil work, survey)	LS
13	48 Port Patch Panels	35
14	24 Port Patch Panels	50
15	12 Port Fiber Panels	20
17	19U Rack Cabinets	20
18	42 U Rack Cabinets	1
19	Cat 6 Cables for Wireless Access Points Including face plates and los	59
20	AC for Server Rooms	4
Professional Services Installation and Configuration of Active Equipment		As per Site Requirement
Package-II		
21	Generator 200KVA Supply, installation, testing, commissioning of all material and accessories of the 415 volts three phase 4 wire 50 HZ pad mounted complete 200 KVA diesel generator with control panel and its breaker "MCCB type" four pole having speed 1500 RPM. Providing heavy duty fabricated steel base frame, the minimum fuel tank capacity would be 380 to 418 Liters, four (04) to six (6) cylinders, 04 stroke engine etc also providing the GSTs and taxes paid documents, including sound and water proof canopy (weather Resistent), providing 80 DB sound control canopy. DG sets shall be 100% imported and shall manufacturer. The manufacturer of engine and alternative must be UK European Union or USA made. The manufacture or supplier shall also have the adequate maintenance. Facilities in the vicinity of project with mechanically qualified and Experienced personnel trained for operation and onsite maintenance of the equipment i.e. DG set etc. and would also provide	1

	the training to our staff for first 40 hours of successful running and commissioning of DG set. <u>Diesel Engine:</u> (Cater Piller, Perkins UK Cummins, FG Wilson UK, John Deere France, Volvo Sweden or equivalent) <u>Alternator</u> (Cater Piller, Stamford UK, Cummins UK, Leroy Somer France or equivalent)	
Package-III		
22	HYDRAULIC ELEVATING PLATFORM	1

INDUSTRIAL ENGINEERING DEPARTMENT, JALOZAI CAMPUS

2.CENTRAL WORKSHOP MACHINING

S No	Item Description	Qty
17	Laser Printer Print Speed: A4, normal Up to 71 ppm, A4, duplex Up to 58 ppm or Higher Print Resolution: Up to 1200 x 1200 dpi or Higher Duplex Mode: Auto	1

	<p>Processor: 1.2GHz or Higher Memory: 512MB or Higher Duty Cycle: Up to 300,000 Monthly or Higher Connectivity: 1 Hi-Speed USB 2.0 Device; 2 Hi-Speed USB 2.0 Host; 1 Gigabit Ethernet 10/100/1000T network; 1 Hardware Integration Pocket Support: Printer should support RFID access for user and print size allocation for multiple users. Warranty: 1 Year Warranty</p>	
19	<p>XGA Projector with Screen and Ceiling Mount and cable DLP Single 0.65" WXGA (1280x800) or Higher</p> <p>Resolution: 1280x800 pixels or Higher Brightness: 3500 ANSI Lumens or Higher Aspect Ratio: Native 16:10 (5 aspect ratio selectable) or Higher Light Source: 240W Lamp Lamp Life: 3000 Hrs Normal, 6000 Hrs Smart Mode or Higher Contrast Ratio: 10000:1 Mounting Kit: Branded Wall mount Bracket Connectivity: HDMI x 2 (HDMI-1 share with MHL), PC In (D-sub 15pin) x 2 (share with component video) Monitor Out (D-sub 15pin) x 1 Composite Video In (RCA) x 1 S-Video In x 1 Audio In (mini jack) x 1 Audio L/RIn (RCA) x 1 Audio Out (mini jack) x 1 LAN RJ45 x 1 (LAN control)RS232 (DB-9pin) x 1 USB (type A) x 1 (5V 2A power supply) USB(type B) x1 (firmware download) USB (type mini B) x 1 (optional interactive camera) IR Receiver x1 (front) Warranty: 1 Year Warranty</p>	

3.HUMAN FACTOR & BIOMECHANICS LAB

S#	Item Description	Qty
2	<p>Personal Computer with 22" LED Screen for MVTA PC Specs for MVTA: Processor: Core i5 Gen 10 or higher RAM: 16 GB RAM DDR4 2667MHz or Higher Storage: 1 TB 7200 RPM HDD + 512 GB PCIe SSD Graphics: Dedicated Graphics Card 2GB or Higher Connectivity: WLAN + Integrated Intel Gigabit Ethernet + Bluetooth 5.0 Input Devices: USB Mouse + USB Keyboard OS: Microsoft Windows 10 Original</p>	1

	<p>Optical DVD Drive Ports/Slots: USB-C, 2 x USB 3.2, 3-in-1 card reader, Headphone / mic combo, 2 x USB 2.0, HDMI, 2 x Display Port, Audio-out Display: 22" LED Screen or higher size</p>	
5	<p>Personal Computer with 22" LED Screen & NVidia 3D Hardware Acceleration Graphics Card for HumanCAD Software PC Specs for HumanCAD: Processor: Core i5 Gen 10 or higher RAM: 32 GB RAM DDR4 2667MHz or Higher Storage: 1 TB 7200 RPM HDD + 512 GB PCIe SSD Graphics: nVidia Graphics Card 4GB or Higher Connectivity: WLAN + Integrated Intel Gigabit Ethernet + Bluetooth 5.0 Input Devices: USB Mouse + USB Keyboard OS: Microsoft Windows 10 Original Optical DVD Drive Ports/Slots: USB-C, 2 x USB 3.2, 3-in-1 card reader, Headphone / mic combo, 2 x USB 2.0, HDMI, 2 x Display Port, Audio-out Display: 22" LED Screen or higher size</p>	1
10	<p>Personal Computer with 22" LED Screen & Nvidia 3D Hardware Acceleration Graphics Card for VATS PC Specs for VATS: Processor: Core i5 Gen 10 or higher RAM: 16 GB RAM DDR4 2667MHz or Higher Storage: 1 TB 7200 RPM HDD + 512 GB PCIe SSD Graphics: Nvidia Graphics Card 2GB or Higher Connectivity: WLAN + Integrated Intel Gigabit Ethernet + Bluetooth 5.0 Input Devices: USB Mouse + USB Keyboard OS: Microsoft Windows 10 Original Optical DVD Drive Ports/Slots: USB-C, 2 x USB 3.2, 3-in-1 card reader, Headphone / mic combo, 2 x USB 2.0, HDMI, 2 x Display Port, Audio-out Display: 22" LED Screen or higher size</p>	1
15	<p>Personal Computer with 22" LED Screen & nVidia 3D Hardware Acceleration Graphics Card for ErgoMaster PC Specs for ErgoMaster: Processor: Core i5 Gen 10 or higher RAM: 16 GB RAM DDR4 2667MHz or Higher Storage: 1 TB 7200 RPM HDD + 512 GB PCIe SSD Graphics: nVidia Graphics Card 2GB or Higher Connectivity: WLAN + Integrated Intel Gigabit Ethernet + Bluetooth 5.0 Input Devices: USB Mouse + USB Keyboard OS: Microsoft Windows 10 Original Optical DVD Drive Ports/Slots: USB-C, 2 x USB 3.2, 3-in-1 card reader, Headphone / mic combo, 2 x USB 2.0, HDMI, 2 x Display Port, Audio-out Display: 22" LED Screen or higher size</p>	1
17	<p>Personal Computer with 22" LED Screen & nVidia 3D Hardware Acceleration Graphics Card for ErgoIntelligence MMH PC Specs for ErgoIntelligence MMH: Processor: Core i5 Gen 10 or higher RAM: 16 GB RAM DDR4 2667MHz or Higher Storage: 1 TB 7200 RPM HDD + 512 GB PCIe SSD</p>	1

	<p>Graphics: nVidia Graphics Card 2GB or Higher Connectivity: WLAN + Integrated Intel Gigabit Ethernet + Bluetooth 5.0 Input Devices: USB Mouse + USB Keyboard OS: Microsoft Windows 10 Original Optical DVD Drive Ports/Slots: USB-C, 2 x USB 3.2, 3-in-1 card reader, Headphone / mic combo, 2 x USB 2.0, HDMI, 2 x Display Port, Audio-out</p>	
19	<p>Personal Computer with 22" LED Screen & nVidia 3D Hardware Acceleration Graphics Card for ErgoIntelligence UEA PC Specs for ErgoIntelligence UEA: Processor: Core i5 Gen 10 or higher RAM: 16 GB RAM DDR4 2667MHz or Higher Storage: 1 TB 7200 RPM HDD + 512 GB PCIe SSD Graphics: nVidia Graphics Card 2GB or Higher Connectivity: WLAN + Integrated Intel Gigabit Ethernet + Bluetooth 5.0 Input Devices: USB Mouse + USB Keyboard OS: Microsoft Windows 10 Original Optical DVD Drive Ports/Slots: USB-C, 2 x USB 3.2, 3-in-1 card reader, Headphone / mic combo, 2 x USB 2.0, HDMI, 2 x Display Port, Audio-out</p>	1
24	<p>Personal Computer with 22" LED Screen for TEkScan ELF PC Specs for TEkScan ELF: Processor: Core i5 Gen 10 or higher RAM: 8 GB RAM DDR4 2667MHz or Higher Storage: 1 TB 7200 RPM HDD + 512 GB PCIe SSD Graphics: Dedicated Graphics Card 2GB or Higher Connectivity: WLAN + Integrated Intel Gigabit Ethernet + Bluetooth 5.0 Input Devices: USB Mouse + USB Keyboard OS: Microsoft Windows 10 Original Optical DVD Drive Ports/Slots: USB-C, 2 x USB 3.2, 3-in-1 card reader, Headphone / mic combo, 2 x USB 2.0, HDMI, 2 x Display Port, Audio-out</p>	1
28	<p>Personal Computer with 22" LED Screen for Advanced Ergonomics Testing Kit PC Specs for Advanced Ergonomics Testing Kit: Processor: Core i5 Gen 10 or higher RAM: 16 GB RAM DDR4 2667MHz or Higher Storage: 1 TB 7200 RPM HDD + 512 GB PCIe SSD Graphics: Dedicated Graphics Card 2GB or Higher Connectivity: WLAN + Integrated Intel Gigabit Ethernet + Bluetooth 5.0 Input Devices: USB Mouse + USB Keyboard OS: Microsoft Windows 10 Original Optical DVD Drive Ports/Slots: USB-C, 2 x USB 3.2, 3-in-1 card reader, Headphone / mic combo, 2 x USB 2.0, HDMI, 2 x Display Port, Audio-out</p>	1
43	<p>Personal Computer with 22" LED Screen for Treadmill & Seat Pressure Mapping System Software PC Specs for Treadmill & Seat Pressure Mapping System Software: Processor: Core i5 Gen 10 or higher RAM: 8 GB RAM DDR4 2667MHz or Higher Storage: 1 TB 7200 RPM HDD + 512 GB PCIe SSD Graphics: Dedicated Graphics Card 2GB or Higher</p>	1

	Connectivity: WLAN + Integrated Intel Gigabit Ethernet + Bluetooth 5.0 Input Devices: USB Mouse + USB Keyboard OS: Microsoft Windows 10 Original Optical DVD Drive Ports/Slots: USB-C, 2 x USB 3.2, 3-in-1 card reader, Headphone / mic combo, 2 x USB 2.0, HDMI, 2 x Display Port, Audio-out	
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Section VIII. Forms

Notes on the Forms

The Bidder shall complete and submit with its bid the **Bid Form** and **Price Schedules** pursuant to ITB Clause 9 and in accordance with the requirements included in the tender documents.

When requested in the Bid Data Sheet, the Bidder should provide the **Bid Security**, either in the form included hereafter or in another form acceptable to the Purchaser, pursuant to ITB Clause 15.3.

The **Contract Form**, when it is finalized at the time of contract award, should incorporate any corrections or modifications to the accepted bid resulting from price corrections pursuant to ITB Clause 16.3 and GCC Clause 17, acceptable deviations (e.g., payment schedule pursuant to ITB Clause 26.5 (c)), spare parts pursuant to ITB Clause 26.3 (d), or quantity variations pursuant to ITB Clause 31. The Price Schedule and Schedule of Requirements deemed to form part of the contract should be modified accordingly.

The **Performance Security** Form should not be completed by the bidders at the time of their bid preparation. Only the successful Bidder will be required to provide performance security in accordance with one of the forms indicated herein or in another form acceptable to the Purchaser and pursuant to GCC Clause 7.3 and SCC 11, respectively.

The **Original Equipment Manufacturer's Authorization** form should be completed by the original equipment manufacturer, as appropriate pursuant to ITB Clause 13.3(a).

Forms

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1. LETTER OF BID (BID FORM)

(To be submitted with technical bids)

Procurement Reference No: _____

To:

The Project Director Jalozai Campus,
University of Engineering & Technology, Peshawar

Gentlemen and/or Ladies:

Having examined the tender, the receipt of which is hereby duly acknowledged, we, the undersigned, offer to establish state-of-the-art laboratories with brand new equipment with standard accessories; and to install, commission, test operate the equipment and train the University personnel on the operation and maintenance of such equipment in conformity with the said tender documents.

We undertake, if our Bid is accepted, to setup state-of-the-art laboratories and to supply and install the equipment with standard accessories in conformity with the said tender documents.

If our bid is accepted, we undertake to provide a performance security in the form, in the amounts, and within the times specified in the Tender Documents.

We agree to abide by this Bid for the Bid Validity Period specified in Clause 16.1 of the Bid Data Sheet and it shall remain binding upon us and may be accepted at any time before the expiration of that period.

Until a formal Contract is prepared and executed, this Bid, together with your written acceptance thereof and your notification of award, shall constitute a binding Contract between us.

We understand that you are not bound to accept the lowest or any bid you may receive.

Dated this _____ day of _____ 20_____.

[signature] _____ *[in the capacity of]*
Duly authorized to sign Bid for and on behalf of _____

2. BILL OF QUANTITIES OF ITEMS WITH SPECIFICATIONS

Name of Bidder _____ Procurement Reference Number _____

Lot Number and Name: _____

1	2	3	4	5	6
Item No	Description	Country of origin	Quantity	Original Equipment Manufacturer	Model Number

3. ORIGINAL EQUIPMENT MANUFACTURER'S AUTHORIZATION FORM

To:

The Project Director Jalozai Campus,
University of Engineering & Technology, Peshawar

WHEREAS [*_____name of the Original Equipment Manufacturer*] who are established and reputable manufacturers of [*_____ name and/or description of the goods*] having factories at [*_____ address of factory*] do hereby authorize [*name and address of Agent*] to submit a bid, and subsequently negotiate with you against Invitation for Bids Reference No. _____ for the above goods manufactured by us.

We hereby extend our full guarantee and warranty as per Clause 15 of the General Conditions of Contract (1 year warranty) for the goods offered for supply by the above firm against this Invitation for Bids.

[signature for and on behalf of Original Equipment Manufacturer]

Note: This letter of authority should be on the letterhead of the Original Equipment Manufacturer and should be signed by a person competent and having the power of attorney to bind the Original Equipment Manufacturer.

4. ORIGINAL EQUIPMENT MANUFACTURER QUALIFICATION STATEMENT

1. Name and Address of Original Equipment Manufacturer

- A. Name _____
- B. Address of Head Office _____
- C. Number of Employees/Engineers _____
- D. Number of similar installations _____
- E. Annual turnover _____
- D. Date Established and / or Registered _____
- E. Origin / Country _____
- F. Project In-charge _____
- G. Section/Department/Division _____
- H. Telefacsimile Number _____
- I. Email Address _____
- J. Telephone Number _____
- K. Mobile Number _____

We hereby certify to the best of our knowledge that the foregoing statement are true and correct and all available information and data have been supplied and that we agree to show documentary proof thereon upon your request.

Date _____

Name & Address of the Original Equipment Manufacturer (Signature)

(In the Capacity of)

Note: This should be on the letterhead of the Original Equipment Manufacturer and should be signed by a person duly authorized.

5. AGENT QUALIFICATION STATEMENT

1. Name and Address of Bidder

- A. Name of Bidder _____
- B. Address of Head Office _____

- C. Number of full-time Engineers _____
- D. Number of full time Sales Reps. _____
- E. Date Established and / or Registered _____
- F. Capital cash/revolving fund _____
- G. Origin / Country _____
- H. Project In-charge _____
- I. Section/Department/Division _____
- J. Telefacsimile Number _____
- K. Email Address _____
- L. Telephone Number _____
- M. Mobile Number _____

We hereby certify to the best of our knowledge that the foregoing statement are true and correct and all available information and data have been supplied and that we agree to show documentary proof thereon upon your request.

Date

Name & Address of the Original Equipment Manufacturer (Signature)

(In the Capacity of)

Note: This letter of authority should be on the letterhead of the Bidder.

6. POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS, that **(Name of Bidder)**, a corporation duly organized and existing under the laws of _____, with its principal place of business at **(Address of Bidder)**, does hereby constitute, designate and appoint **(Name and Designation of Representative of the Bidder)**, whose specimen signature is shown below, as our true and lawful attorney-in-fact, in our name, place and stead, with full powers of substitution and revocation, to sign and submit the tender documents and all documents related to the Bid invited on _____, 2021 by University of Engineering & Technology, Peshawar, and to do any and all acts and deeds as the said attorney-in-fact may deem requisite, necessary or proper to be done in connection therewith, all in our name and on our behalf hereby ratifying and confirming all that the said attorney-in-fact shall do pursuant to the power hereunder granted.

This Power of Attorney has been drawn up in the city of _____, on this _____ the day of _____, 2021 and shall remain in full force and effect until our further notice.

Name of Bidder _____
(Name of duly authorized representative to sign)

Specimen Signature

(Rank or Position)

7. REFERENCE LIST OF SIMILAR INSTALLATIONS

Name of Purchaser/ Institution	Purchase order No. and date	Description of order	Value of order	Year of completion

Note: This should be on the letterhead of the Bidder and should be signed by a duly authorized person.

8. INSTALLATION/COMMISSIONING/TRAINING UNDERTAKING BY ORIGINAL EQUIPMENT MANUFACTURER

We **(Name of Original Equipment Manufacturer)**, a manufacturer duly organized under the law of **(Name of Country)** and having its principal place of business at **(Address of Original Equipment Manufacturer)** hereby undertake that we are exclusively responsible for the successful Installation, Commissioning, and Training for the equipment offered by us/ our local agent for your Invitation for Bids Reference Number _____ dated _____.

If for any reason, such as travel restrictions imposed by our government etc., we are unable to send our engineers/supervisors to perform the installation, commissioning, and training for our equipment at the Purchaser's designated premises, then we are exclusively responsible for all the costs inclusive of all associated expenses for seven (7) days detailed training of at least two (2) technical personnel of the Purchaser at our premises at **(Original Equipment Manufacturer premises Address)** for each lot secured as per the Purchaser tender documents.

Any and all costs associated with successful installation, commissioning, and training has been included in our aforementioned quotation.

Date

Name & Address of the Original Equipment Manufacturer _____ (Signature)

Note: This letter should be on the letterhead of the Original Equipment Manufacturer and should be signed by a duly person.

9. INTEGRITY PACT

Declaration of fees, commission and brokerage etc. payable by the suppliers of goods, services & works in contracts worth Rs. 10.00 million or more

Contract No. _____ Dated _____ Contract Value: *[To be filled in at the time of signing of Contract]* Contract Title: _____

[name of Supplier] hereby declares that it has not obtained or induced the procurement of any contract, right, interest, privilege or other obligation or benefit from University of Engineering & Technology, Peshawar through any corrupt business practice.

Without limiting the generality of the foregoing, [name of Supplier] represents and warrants that it has fully declared the brokerage, commission, fees etc. paid or payable to anyone and not given or agreed to give and shall not give or agree to give to anyone within or outside Pakistan either directly or indirectly through any natural or juridical person, including its affiliate, agent, associate, broker, consultant, director, promoter, shareholder, sponsor or subsidiary, any commission, gratification, bribe, finder's fee or kickback, whether described as consultation fee or otherwise, with the object of obtaining or inducing the procurement of a contract, right, interest, privilege or other obligation or benefit in whatsoever form from University of Engineering & Technology, Peshawar, except that which has been expressly declared pursuant hereto.

[name of Supplier] certifies that it has made and will make full disclosure of all agreements and arrangements with all persons in respect of or related to the transaction with University of Engineering & Technology, Peshawar and has not taken any action or will not take any action to circumvent the above declaration, representation or warranty.

[name of Supplier] accepts full responsibility and strict liability for making any false declaration, not making full disclosure, misrepresenting facts or taking any action likely to defeat the purpose of this declaration, representation and warranty. It agrees that any contract, right, interest, privilege or other obligation or benefit obtained or procured as aforesaid shall, without prejudice to any other rights and remedies available to UET, Peshawar under any law, contract or other instrument, be voidable at the option of University of Engineering & Technology, Peshawar.

Notwithstanding any rights and remedies exercised by University of Engineering & Technology, Peshawar in this regard, [name of Supplier] agrees to indemnify, University of Engineering & Technology, Peshawar for any loss or damage incurred by it on account of its corrupt business practices and further pay compensation to University of Engineering & Technology, Peshawar in an amount equivalent to ten times the sum of any commission, gratification, bribe, finder's fee or kickback given by [name of Supplier] as aforesaid for the purpose of obtaining or inducing the procurement of any contract, right, interest, privilege or other obligation or benefit in whatsoever form from University of Engineering & Technology, Peshawar.

Name of Purchaser:
Signature:[Seal]

Name of Seller/Supplier:
Signature:[Seal]

10. LETTER OF BID (BID FORM)

(To be submitted with financial bid)

Procurement Reference No: _____

To:

The Project Director Jalozai Campus,
University of Engineering & Technology, Peshawar

Gentlemen and/or Ladies:

Having examined the tender, the receipt of which is hereby duly acknowledged, we, the undersigned, offer to establish state-of-the-art laboratories with brand new equipment with standard accessories; and to install, commission, test operate the equipment and train the University personnel on the operation and maintenance of such equipment in conformity with the said tender documents for the sum of [_____ *total bid amount in words and figures*] or such other sums as may be ascertained in accordance with the Schedule of Prices attached herewith and made part of this Bid.

We undertake, if our Bid is accepted, to setup state-of-the-art laboratories and to supply and install the equipment with standard accessories in conformity with the said tender documents.

If our bid is accepted, we undertake to provide a performance security in the form, in the amounts, and within the times specified in the Tender Documents.

We agree to abide by this Bid for the Bid Validity Period specified in Clause 16.1 of the Bid Data Sheet and it shall remain binding upon us and may be accepted at any time before the expiration of that period.

Until a formal Contract is prepared and executed, this Bid, together with your written acceptance thereof and your notification of award, shall constitute a binding Contract between us.

We understand that you are not bound to accept the lowest or any bid you may receive.

Dated this _____ day of _____ 20_____.

[signature]

[in the capacity of]

Duly authorized to sign Bid for and on behalf of _____

11. PRICE BREAKDOWN SCHEDULE

Name of Bidder _____ Procurement Reference Number
_____.

Lot Number and Name: _____

1	2	3	4	5	6
Item No	Description	Country of origin	Quantity	Unit price CPT Peshawar	Total price CPT Peshawar
Grand Total					

Signature of Bidder _____

Note: In case of discrepancy between unit price and total, the unit price shall prevail.

12. FORM OF BID SECURITY

[Name and address of guarantor]

Date: _____

Beneficiary: To:

The Project Director Jalozei Campus,
University of Engineering & Technology, Peshawar

BID GUARANTEE No.: _____

We have been informed that [name of the Bidder] (hereinafter called "the Bidder") has submitted to you its bid dated (hereinafter called "the Bid") for supply, installation and commissioning of labs equipment of Electrical Engg Department at University of Engineering & Technology, Peshawar Campus- Pakistan under Procurement Reference Number _____.

Furthermore, we understand that, according to your conditions, bids must be supported by a bid guarantee.

At the request of the Bidder, we [_____ name of guarantor] hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of [_____ amount in figures]([_____ amount in words]) upon receipt by us of your first demand in writing accompanied by a written statement stating that the Bidder is in breach of its obligation(s) under the bid conditions, because the Bidder:

- (a) has withdrawn its Bid during the period of bid validity specified by the Bidder in the Form of Bid; or
- (b) does not accept the correction of errors in accordance with the Instructions to Bidders (hereinafter "the ITB") of the IFB; or
- (c) having been notified of the acceptance of its Bid by the Purchaser during the period of bid validity, (i) fails or refuses to execute the Contract Form, if required, or (ii) fails or refuses to furnish the performance security, in accordance with the ITB.

This guarantee will expire: (a) if the Bidder is the successful bidder, upon our receipt of copies of the contract signed by the Bidder and the performance security issued to you upon the instruction of the Bidder; or (b) if the Bidder is not the successful bidder, upon the earlier of (i) our receipt of a copy of your notification to the Bidder of the name of the successful bidder; or (ii) twenty-eight days after the expiration of the Bidder's Bid.

Consequently, any demand for payment under this guarantee must be received by us at the office on or before that date.

[Signature(s)]

13. CONTRACT FORM

THIS AGREEMENT made the _____ day of _____ 20_____ between University of Engineering & Technology, Peshawar- Pakistan (hereinafter called “the Purchaser”) of the one part and [name of Supplier] of [city and country of Supplier] (hereinafter called “the Supplier”) of the other part:

WHEREAS the Purchaser invited bids for supply, installation, commissioning and its training of certain goods on turn-key basis, its relevant activities & ancillary services, viz. Electrical brand new labs equipment on CPT Peshawar basis and has accepted a bid by the Supplier for the supply of those goods and services in the sum of [_____contract price in words and figures] (hereinafter called “the Contract Price”).

NOW THIS AGREEMENT WITNESSETH AS FOLLOWS:

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the Conditions of Contract referred to.
2. The following documents shall be deemed to form and be read and construed as part of this Agreement, viz.:
 - (a) the Bid Form and the Price Schedule submitted by the Bidder;
 - (b) the Schedule of Requirements;
 - (c) the Technical Specifications;
 - (d) the General Conditions of Contract;
 - (e) the Special Conditions of Contract; and
 - (f) the Purchaser’s Notification of Award.
3. In consideration of the payments to be made by the Purchaser to the Supplier as hereinafter mentioned, the Supplier hereby covenants with the Purchaser to provide the goods and services and to remedy defects therein in conformity in all respects with the provisions of the Contract
4. The Purchaser hereby covenants to pay the Supplier in consideration of the provision of the goods and services and the remedying of defects therein, the Contract Price or such other sum as may become payable under the provisions of the contract at the times and in the manner prescribed by the contract.

IN WITNESS whereof the parties hereto have caused this Agreement to be executed in accordance with their respective laws the day and year first above written.

Signed, sealed, delivered by _____ the _____
(for the Purchaser)

Signed, sealed, delivered by _____ the _____
(for the Supplier)

14. PERFORMANCE SECURITY FORM

_____ [Name, and Address of guarantor]

Beneficiary: To:

The Project Director Jalozei Campus,
University of Engineering & Technology, Peshawar

Date: _____

PERFORMANCE GUARANTEE No.: _____

We have been informed that [_____ name of guarantor] has entered into Contract No. [_____ reference number of the contract] dated _____ with you, for supply, installation and commissioning of Electrical brand new labs equipment on CPT Peshawar basis (hereinafter called "the Contract").

Furthermore, we understand that, according to the conditions of the Contract, a performance guarantee is required.

At the request of the Guarantor, we [_____] hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of [_____ amount in figures] (_____) [amount in words]¹ upon receipt by us of your first demand in writing accompanied by a written statement stating that the Guarantor is in breach of its obligation(s) under the Contract, without your needing to prove or to show grounds for your demand or the sum specified therein.

This guarantee shall expire no later than the ____ day of _____, 20____, and any demand for payment under it must be received by us at this office on or before that date.

[Signature(s)]

¹ The Guarantor shall insert an amount representing the percentage of the Contract Price specified in the Contract and denominated either in the currency (i.e.) of the Contract or a freely convertible currency acceptable to the Purchaser.