

Supply, installation and Maintenance of Examination Management System

Faculty of Technology, University of Sri Jayewardenepura

National Shopping Procedure

Invitation of bids for Supply, Installation and Maintenance of Examination Management System to the Faculty of Technology

Quotation No. 2023/SJP/FOT/NS/EMS/09

**INVITATION FOR BIDS (NS)**

**FACULTY OF TECHNOLOGY, UNIVERSITY OF SRI JAYEWARDENEPURA**

**SUPPLY, INSTALLATION AND MAINTENANCE OF EXAMINATION MANAGEMENT SYSTEM TO THE FACULTY OFFICE OF THE FACULTY OF TECHNOLOGY, UNIVERSITY OF SRI JAYEWARDENEPURA**

**(2023/SJP/FOT/ NS/EMS/09)**

1. The Bursar University of Sri Jayewardenepura invites sealed bids from eligible and qualified bidders for Supply, Installation and Maintenance of Examination Management system to the use of Faculty of Technology, University of Sri Jayewardenepura.

2. Bid Bond is 2% of value of Procurement

**3. Sealed Bids should be marked “Tender for Supply, Installation and Maintenance of Examination Management System to the”** Faculty of Technology, University of Sri Jayewardenepura. on the left hand corner of the envelope and delivered to the Senior Assistant Bursar, Faculty of Technology, University of Sri Jayewardenepura, Mahenwatta, Pitipana, Homagama. or place in the tender box kept in the office of the Finance Division, Faculty of Technology, University of Sri Jayewardenepura **,** on or before **2.00 p.m 31.05.2023** Bids will be opened in the presence of the bidders’ representatives who choose to attend in person **at 2.30 p.m. on 31.05.2023.** at The Finance Division , Faculty of Technology, University of Sri Jayewardenepura ,Mahenwatta, Pitipana,Homagama. Late bids will be rejected.

Dean,

Faculty of Technology

University of Sri Jayewardenepura,

Mahahenwatta,

Pitipana,

Homagama

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**2. General Conditions of Bid**

|  |  |
| --- | --- |
| 1. Period of Validity of   quotation | Quotations shall remain valid for the period of ninety (90) days after the quotation submission deadline date. |
| 1. Format and Signing of Quotation | The quotation shall be typed or written in indelible ink and shall be  Signed by a person duly authorized to sign on behalf of the vendor. |
| 1. **Submission and Opening of Quotation** | |
| 1. Submission   of Quotation | 3.1 Vendors may submit their quotations may either be sent by registered post or be deposited in the tender box in sealed envelopes addressed to the Purchaser bear the specific identification of the contract number.  3.2 If the quotation is not sealed and marked as required, the Purchaser will assume no responsibility for the misplacement or premature opening of the quotation. |
| 1. Submission of Quotation | 4.1 Quotation must be received by the Purchaser at the following address  “ The Senior Assistant Bursar,”  Faculty of Technology,  University of Sri Jayewardenepura,  Mahenwattha,Pannipitiya  Homagama |
| 1. Late Quotation | 5.1 The Purchaser shall reject any quotation that arrives after the deadline. |
| 1. Opening of   quotations | 6.1 The Purchaser shall conduct the opening of quotation in public at the address,  6.2 A representative of the bidders may be present and mark its Attendance. |
| **B- Evaluation and Comparison of Quotation** | |
| 1. Clarifications | 7.1 To assist in the examination, evaluation and comparison of the quotations, the Purchaser may, at its discretion, ask any vendor for a clarification of its quotation. Any clarification submitted by a vendor in respect to its quotation which is not in response to a Request by the Purchaser shall not be considered.  7.2 The Purchaser’s request for clarification and the response shall be in writing. |
| 1. Responsiveness   of quotations | 8.1 The Purchaser will determine the responsiveness of the quotation  to the documents based on the contents of the quotation received.  8.2 If a quotation is evaluated as not substantially responsive to the  documents issued, it may be rejected by the Purchaser. |
| 1. Evaluation   of quotation | 9.1 The Purchaser shall evaluate each quotation that has been  etermined, to be substantially responsive.  9.2 To evaluate a quotation, the Purchaser may consider the following:  (a) the Price as quoted;  (b) price adjustment for correction of arithmetical errors;  (a) Price adjustment due to discounts offered. |
| 1. Purchaser’s Right to Accept any Quotation, and to Reject any or all Quotations | 10.1 The Purchaser reserves the right to accept or reject any quotation, and to annul the process and reject all quotations at any time prior to acceptance, without thereby incurring any liability to bidders. |
| **F: Award of Contract** | |
| 1. Acceptance   of the quotation | 11.1 The Purchaser will accept the quotation of the vendor whose offer has been determined to be the lowest evaluated bid and is substantially responsive to the documents issued. |
| 1. Notification   of acceptance | 11.1 Prior to the expiration of the period of validity of quotation, the  Purchaser will notify the successful vendor, in writing, that its  quotation has been accepted. |

# **Terms of Reference (TOR**)

**Invitation of bids for supply, installation and maintenance Examination Management System to the Faculty of Technology, University of Sri Jayewardenepura**

**BACKGROUND**

Faculty of Technology was established in January, 2016, upon the approval of the University Grants Commission and the publication of Gazette Extraordinary (No. 1948/59 Order under Section 27(1), The Universities Act, No. 16 of 1978) by the Ministry of Higher Education and Highways of Sri Lanka. The Faculty of Technology, as the leading technology faculty in Sri Lanka, is serving the nation by providing higher education opportunities for the prospective undergraduates who enroll to the Sri Lankan university system through the GCE Advanced Level Technology stream.

Among many other tasks, the Faculty of Technology carries out registration of course units, Scheduling and conducting examinations and issuing results of the end semester and final examination of the undergraduate student’s. The current system is requiring to be updated to meet the new requirements along with above mentioned tasks.

## Scope

Supply, Installation and Maintenance Examination Management System to the Faculty of Technology, University of Sri Jayewardenepura.

## Invitation to bids

Bids are invited from reputed, well-experienced and qualified software developing organizations for the supply, Installation and Maintenance Examination Management System to the Faculty of Technology, University of Sri Jayewardenepura.

## Objectives of the Assignment

The objective of this assignment is to supply, installation and maintenance examination management system for registering students and recording examination results of undergraduate students of the Faculty to improve the efficient and effective administering of the Degree Programs. In addition, it aims to maintain the responsibility, transparency and confidentiality of all activities related to Examinations.

## Scope of the Assignment

This assignment is focused on developing both an offline local server-based and a web-based Examination Management System for the Faculty of Technology, University of Sri Jayewardenepura. Additionally, a mobile application to facilitate several functions needs to be developed. The web version must be cross-browser and cross-OS compatible up to the most recent browser/OS versions, and needs to be responsive such that it renders well and is usable on a variety of devices. The mobile application should support OS compatibility including for Android and IOS platforms.

The proposed system should consist of the following modules/phases;

* 1. User Authentication/ Authorization controls
     + Manage user authority levels such as creating accounts and defining roles.
  2. Marks entering and management
     + Management related to students and courses upto GPA calculation, Self-Exam registration System, Student attendance management, Manage attendance related functions and attendance sheets, Handling exam admissions, Generation and printing of admissions for the exam with QR code validation, Self-Admission Collecting (with QR code self-validation), Exam Attendance & Marks Sheets Printing, Marks entering, Result sheets printing, GPA calculation according to the rules and regulations of the university, Transcript printing (with online QR code validation) & Relevant Report generation.
  3. Validation of marks

* + - Manage security of the marks and check the alteration of the grades, Incorporation of Encryption Standards, keys, algorithms and validation rules are required.
  1. Organizing data and backup management
     + Manage the database backups such as Automated Database Backups & Database syncing (between local and web servers).
  2. Students’ Performance and Evaluation
     + The proposed system should consist of; Login management, Student attendance management, Course enrollment, Exam registration, Field selection, Admission, Semester results, Overall results, GPA calculator, Medical management, Notice board, Student feedback, Mobile application support (Students & Lecturer), Performance and Evaluation Management System.
  3. Performance and Evaluation Service for Students (Mobile application)
     + Desired features related to Performance and Evaluation (Mobile) service for students should include; Semester results, Overall results, Repeats, Student attendance, Feedback, Notice board.
  4. Performance and Evaluation Service for Lecturers (Mobile application)
     + Desired features related to Performance and Evaluation (Mobile) service for lecturers should include; Semester Results of the students, Overall results of the students, Student attendance, Student profile.
  5. Venue Allocation and Management
     + This should mainly facilitate online viewing and allocation of venues such as halls and displaying of any clashes when allocating a venue for a lecture or a specific event by user.

## Required Functions of the proposed Examination Management System

* 1. Offline local server
     + An offline local server for entering marks (inaccessible by students) and an online web server (accessible by students) must be available.

- The data related to marks must be encrypted such that high security is ensured along with efficiency.

* 1. Marks system
     + The system should handle activities from adding a course and student enrollment to upto GPA calculation.
     + It should allow entering of marks manually and using Excel sheets.
     + It should facilitate all activities related to course management and student details management.

The system should allow addition of departments, to give authority to courses, and automate functionalities related to final results board management.

* + - The system should also have proper means of backup and restore management using a menu item in the system..
    - Related to examination management activities, it should allow generation of attendance sheets, marks sheets, GPA calculation, results sheet validation using QR code, etc.
  1. Online students’ system
     + Using the online web application, students must be able to view their profiles, semester wise/ overall marks, grades and SGPA & CGPA, register for examinations (Course enrollment and repeat courses), apply for medicals, get admissions for exams, view attendance, etc.
     + Other services required include student confirmation letters, transcript application, and performance and evaluation services.
  2. Online lecturers’ system
     + Lecturers must be able to enter marks (CA and ESA) to courses using a web-browser. The system should allow the entering of marks by the first examiner and second examiner separately, and validate them. It should facilitate viewing details of marks and status (pending/ finalized).
     + The Head of the Department should be able to give authority for respective lecturers to enter marks. Lecturers should also be able to view student profiles.
  3. Reports
     + Relevant reports (to be specified by the department during the requirement gathering process) generation must be facilitated. The system should facilitate predefined report generation as well as customizable report generation.
  4. Mobile Version
     + Mobile version for performance and evaluation services is required. It must be developed either using native Android/iOS or flutter/react native and shall not be a web-view of the brower-based application.
  5. Store relevant documents
     + There must be a capability to store relevant documents (scanned/other ) in the system. Such documents must be stored in a designated Google drive and not in the university hosted servers.

## Security features & administrator access

* 1. Proposed system should perform the security of the system and its data with https protocol. Payments and the installation of ssl certificate must be carried out by the vendor.
  2. Marks/Confidential data should be encrypted.
  3. Administrator panel restricted to access distinguished IP addresses given by the institute.
  4. An isolated network connection to the database server and computers used to enter marks which is not accessible to the student and may be hosted in the university cluster.

## Facilities granted by the Client

Relevant infrastructure (hosting space, backup snapshots of data, data and information, necessary equipment) will be facilitated by the Faculty of Technology. It is advisable for the bidder to provide required server configurations and other requirements along with the bidding document.

## Terms and Conditions

* 1. The pre-bid meeting will be held at 10.30 a.m on 22.05.2023 at the board room of the Faculty of Technology. Bidders are required to attend this meeting. Attending the pre-bid meeting is mandatory to be eligible for awarding the contract.
  2. The requirements indicated in this document are only for the bidding purpose. The selected supplier should conduct a comprehensive requirement gathering with the involvement of the end users and prepare a SRS which shall be considered as the Authorized Version for the requirement delivery.

1. Evaluation Criteria

Technical proposal evaluation criteria

1. Successful completion of similar projects (5 marks each) 15
2. System architecture 20

(provide diagram indicating users, front-end, back-end, DB,etc)

1. Technical approach and methodology 50

(Describe software development methodology, action plan, timelines, etc)

1. Transfer of knowledge 15

(Describe how to train relevant staff)

Tf = total score for technical proposal

Quotations will be evaluated based on the following criteria.

Financial score Sf = (100xFm)/Pf ; Fm = lowest price, Pf = price of the proposal

Weight for Financial proposal Fw = 0.3, Weight for technical proposal Tw = 0.7

Final score F = Sf xFw + Tf xTw

Project will be awarded to the supplier with the highest F.

* 1. Further to the above point, the developer/supplier must incorporate any requirements identified in the process of delivering the main functionalities without additional costs.
  2. The bidder must provide a reasonable rate at which new developments and maintenance will occur in future.
  3. All initial subscriptions and payments required for any services needed to develop and facilitate the system must be borne by the developer/supplier.
  4. The developer/supplier must submit an action plan along with the timeline and note that developments/deliverables will be prioritized depending on the allocated budget and available time

## Reporting Obligations

* 1. The developer/supplier is required to sign a contract with the Faculty of Technology and submit a work/action plan to the Faculty of Technology within 2 weeks of signing the contract agreement.
  2. The developer/supplier is required to conduct product demonstrations/workshops for key users.
  3. The developer/supplier is required to train an executive staff member of the Faculty on all functionalities of the system.
  4. The developer/supplier is required to provide all system level passwords including the administrator/root password of the servers and the database management systems to the Dean, /Deputy Registrar of the Faculty of Technology.
  5. Generate log reports to show user level activities.
  6. Submit a comprehensive user manual covering all functionalities of the system.
  7. The developer/supplier should provide all source codes to the Dean/Deputy Registrar of the Faculty of Technology on an agreed method and also commit each and every update to gitlab repository given by the university.

## Payment Schedule

|  |  |  |
| --- | --- | --- |
| **Step** | **Percentage (%)** | **Works to be complied** |
| 1st Step | 10 | SRS finalization and Prototype delivery |
| 2nd Step | 20 | Design, development, testing and deployment of the system and training of admin and academic staff |
| 3rd Step | 30 | Design, development, testing and deployment of the students' version and and training of students |
| 4th Step | 10 | Provide all source codes to the Dean of the Faculty on an agreed method and commit each and every update to gitlab repository given by the university  Develop a method to take backups on a specific schedule.  Prepare and handover user manuals |

|  |  |  |
| --- | --- | --- |
|  |  |  |
| 5th Step | 20 | After the date of the acceptance of the system, it should run through a complete life cycle (from registration to release of results of final year students). During this period, the developer/supplier shall resolve any bugs or other issues  encountered during normal operations of the software. |
| **6th step** | **10** | After the 1-year warranty period. One year period will be calculated from the date of the acceptance of the system. |

1. **Backups**

The system shall support backup and restore facility of the database using a menu item in the system. ba

## Performance Standard

The developer/supplier undertakes to perform the services with the highest standards, of professional and ethical competence and integrity.

## Ownership of Material

Any studies, reports or other material, databases, source codes, software or otherwise, prepared by the developer/supplier for the client under the contract shall belong to and remain the property of the client. The developer/supplier should provide all source codes to the Deputy Registrar of the Faculty of Technology and commit each and every update to gitlab repository given by the university All payments shall be released only after the all development and updates are committed to the gitlab repository of the University.

## Maintenance Services

The developer/supplier shall provide 1 year warranty for the software from the date acceptance system . Any bugs and other issues encountered during this period shall be resolved free of charge.

Update Services - On not more than two (2) occasions during each calendar month during the term of this agreement, the client shall have the right to require the developer/supplier to change each of the reports and databases appearing on the system and the developer/supplier will incorporate the updates into the system following delivery by the client of all data required to produce the updates.

The software maintenance service shall commence after the lapse of the 1 year warranty period. The developer/supplier shall rectify any bugs encountered, install any expired ssl certificates (vendor shall pay for the certificates), update apps (both mobile and web/offline local) to the latest operating system versions and provide technical support during the maintenance service period.

Any new requirements shall be developed at a reasonable rate agreed to by both parties. The source codes of newly developed modules, together with the original source, shall be provided to the client and commit each and every update to the gitlab repository given by the university

## Assignment

The developer/supplier shall not assign this contract or subcontract any portion of it without the client's prior approval.

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The developer/supplier shall not assign this contract or subcontract any portion of it without the client's prior approval.

**18**. Technical Specifications & Compliance

The scope of the Web Based Examination Management System would include a system study, design, development, testing and deployment of respective systems for the University’s Examination Operational system. The system should be fully functional to provide all the information desired by the Faculty and upgrade the existing systems controls, procedures adopted, working methods and applications, information provided and the system

**Getting Reports**

1. Getting Admission Cards for each student

2. Getting Attendance sheet for each subject during the examination

3. Getting Semester Wise Result sheet for each student with GPA

4. Real time GPA calculation

5. Academic Transcript

6. Generating Time Table

7. Generating Continuous Assessment Results

8. And more necessary reports …

**Additional requirements**

 The system must be facilitate to execute on modern operating systems and to adapt changing technologies.

 Vendor should visit the site and do the need assessment of the user requirements by looking at the physical set up at the examination division of the Faculty.

 The system must be secured with

Authentication

Access Control

Auditing

Encryption

Backup

Log maintenance

Backup on deleted data

Session management

High availability

Disaster recovery (mention disaster recovery procedure)

Additional security measures should be available to handle critical situations.

Operating Manual should be provided with software programmer in Hard and soft copies

## Section II - Price Schedule

**Supply, Installation and Maintenance Examination Management System to the**

**Faculty of Technology, University of Sri Jayewardenepura Price Schedule**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **1** | **2** | **3** | **4** | **5** | **6** | **7** |
| **Line Item No.** | **Description of Goods** | **Quantity** | **Unit Price Rs.** | **Total Price for Item [excluding VAT]**  **Rs.** | **VAT**  **Rs.** | **Total Price for Item [including VAT]**  **Rs.** |
| 1. | Web based  Examination Management System to the Faculty of Technology (not accessible to the students) | LOT |  |  |  |  |
| 2. | Performance and Evaluation Service Mobile application – accessible to Students and Lecturers | LOT |  |  |  |  |
| 4. | Maintenance and services charges (after 1 year warranty period)  (shall not be more than 15% of the total development cost). | LOT |  |  |  |  |
| 5. | Any other charges |  |  |  |  |  |
| **Total** | | |  |  |  |  |

**Total Cost (In Word) : Name & Address of the Organization :**

**Signature (With Rubber Seal) : Date :**

**BID BOND**

Vice Chancellor,

University of Sri Jayewardenepura,

Gangodawila,

Nugegoda

1. We the undersigned Bank in order to allow Messrs.................................................... (Name and

Addresses of the Bidder to supply Installation and Maintenance of Examination Management system to the Faculty of Technology, University of Sri Jayewardenepura waving all objections, restrictions and defenses on the part of the said Messer’s.............................................................................................................

(Name of the Bidder) or any third party, hereby irrevocably and independently guarantee to pay you on demand and without reference to the Bidder or obtaining his consent or approval thereof an amount up to a total sum of Rs. …………………………………

2. We shall effect payment to you on demand against your written statement to the effect that the Bidder

(a) Has withdrawn his Bid after the closing of Bids and before the expiration of its validity period of one hundred and fifty (150) days; or

(b) Being the successful Bidder has failed to give the Bonds that may be required for the due faithful performance of the Contract; or

(b) Being the successful Bidder has failed to enter into a written Contract with the University of Sri Jayewardenepura in accordance with the Bid submitted and award made.

(c) Does not accept the correction of errors in accordance with the instruction to bidders

3. It is fully understood that the guarantee takes effect from the date of the closing of the Bid on

…………… 2023 and shall remain valid for a period of one hundred and fifty (150) days thereafter and during the period of any extension thereof that may be agreed upon BETWEEN the University of Sri Jayewardenepura AND the Bidder.

4. Notwithstanding anything to the contrary hereinbefore contained if the Bidder is successful in his Bid, this Guarantee shall remain in full force and effect after the period of one hundred and fifty (150) days until the Bidder shall have entered into the written Contract and furnished the necessary

Performance Bonds. ……….…………....................................................................................................

………………………………………………………………………………………….…...................

5. All claims under this Guarantee must be submitted to us within thirty (30) working days after the expiry date of this Guarantee.

6. You shall be at liberty either by one action to sue the Bidder and us and also any other person or persons all jointly and severally or to proceed in the first instance against us only and we hereby

renounce the right to claim that the Bidder should be excused or proceeded against by action in the first instance and the right to claim that you should divide your claim and bring actions against us or any other person or persons whomsoever, each for his portion pro-rata; and the right to claim in any action brought against all or each or any of us with or without all or any other person that you should only recover from us a pro-rata share of the amount claimed and all other rights and benefits to which sureties are or may be by law entitled it being agreed and understood that we are liable in all respects hereunder as if we are Principal Debtors to the extent aforementioned including the liability to be sued before recourse is had against the Bidder.

7. We further undertake to make all payments due hereunder by Bank draft or cheque drawn in favor of “Bursar University of Sri Jayewardenepura”.

8. It is understood that you will return this Guarantee to us on its expiry, provided that no claim is payable, but if claim is payable, this Guarantee will only be returned after settlement of the total amount claimed herein.

Dated this …............. day of …......... 2023.

Signed …........... in the capacity of …........................................

Duly authorized to sign for and on behalf of

…..................................................................................................

**Contract Agreement**

THIS CONTRACT AGREEMENT is made the *[ insert:* ***number*** *]* day of *[ insert:* ***month*** *]*, *[ insert:* ***year*** *]*.

BETWEEN

(1) The University of Sri Jayewardenepura, a Higher Educational Institution and having its principal place of business at Gangodawila ,Nugegoda (hereinafter called “the Purchaser”), and

(2) *[ insert name of Supplier ]*, a corporation incorporated under the laws of *[ insert: country of Supplier ]* and having its principal place of business at *[ insert: address of Supplier ]* (hereinafter called “the Supplier”).

WHEREAS the Purchaser invited bids for certain Goods and ancillary services, viz., Supply, Installation and Maintenance of Examination Management system Software Program to the University of Sri Jayewardenepura and has accepted a Bid by the Supplier for the supply of those Goods and Services in the sum of *[insert Contract Price in words and figures, expressed in the Contract currency (ies) ]* (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 constitute the Contract between the Purchaser and the

Supplier, and each shall be read and construed as an integral part of the Contract:

(a) This Contract Agreement

(b) Contract Data

(c) Conditions of Contract

(d) Technical Requirements (including Schedule of Requirements and Technical

Specifications)

(e) The Supplier’s Bid and original Price Schedules

(f) The Purchaser’s Notification of Award

(g) Bids submission form

3. This Contract shall prevail over all other Contract documents. In the event of any discrepancy or inconsistency within the Contract documents, then the documents shall prevail in the order listed above.

4. 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.

5. 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 the laws of *Democratic Socialist Republic of Sri Lanka* on the day, month and year indicated above.

For and on behalf of the Purchaser

Signed: *[insert signature]*

in the capacity of Vice Chancellor, University of Sri Jayewardenepura,Gangodawila,Nugegoda.

in the presence of *……………………………*

For and on behalf of the Supplier

Signed: *[insert signature of authorized representative(s) of the Supplier]*

in the capacity of *[ insert title or other appropriate designation ]*

in the presence of *[ insert identification of official witness*