

CHAPTER-7
SCOPE OF EXAMINATION WORK

The detailed Scope of Work for Pre and Post work of UG & PG (Regular) of the E-Bid, as here under:-

Vishvakarma Skills University

University invites Tenders from reputed Software Firms and System Integrators providing solutions and services with proven experience in Designing, Developing, Customizing, Implementing & Maintaining End to End Examination Processing and Student Information Management System on outsource basis. The complexity of the working environment at the site necessitates standardized process flows, online reporting, project monitoring and status updates, project planning and execution, maintaining the details of the students etc. as a part of this engagement.

Nature of Work:

Carryout the systems-study at the premises of the University.

1. Understanding the nature of information that is to be maintained in all master data.
2. Understanding rules and regulations governing admission, enrolment, credit system, conducting of examination, and evaluation and result processing.
3. Review of existing processes, procedures, and systems. Review of extant rules, procedures, legislative documents and program related documentation.


The University will constitute a Steering Committee for periodical monitoring of the assignment and for providing the necessary guidance and coordination from time to time.

SCOPE OF WORK

I. Management Information System Design, Development and Implementation

1. Design, development, implementation, execution, maintenance and hosting of the Management Information System (MIS) to provide a secure online web-based interface related to VSU and thereby reducing the paper work, and automating the processes for providing better services and effective administration. The system shall cater to requirements of stakeholders including (1) Students (including all On-Campus, Affiliated Collegiate Regular Students, and Concurrent enrolled students), (2) Affiliated College and Institutions.
2. The scope of the work under MIS project includes providing consultancy, holding discussions with university administration, planning, designing, developing software, customizing software, providing hosting space for installation of software and databases, creating databases making it functional, maintenance handling and security

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of data, automation of all operations, maintenance and improvement in software based on feedback, training of university staff, ensuring smooth operations and providing trained staff for operational support for a period of 3 years from the date of work order. The hardware required at university Desktop printer, furniture will be provide by University and UPS Scanner/Barcode Scanner will be arrange by Service provider.

The MIS will consist of following well integrated module/components.

1. Comprehensive On-Campus and Affiliated Collegiate Student Information System [Enrolment, Examination Registration, Credit Register, all examination related databases creation, maintenance and data analysis and providing interface to students including SMS Service and Management System]
2. Concurrent Students Management System [Enrolment, Examination Registration, Credit Register, all examination related databases creation, maintenance and data analysis including SMS Service and Management System]
3. Affiliated College Management Information System [Affiliation Application, College Records and Interface for College on MIS]
4. Examination Management System [Pre-Examination work, Examination Centre Management, Post-Examination Work, Result Preparation, Grade-Sheet Printing]
5. Scanning and Coding of Answer-books and On-Screen Marking System
6. Examination Result Processing System including Evaluation and Evaluators Management system
7. Integration with Online Payment Gateways, Electronic Transaction Facilities of Bankers and E-Mitra]
8. Integration with other portals for pushing data on depositories.
9. Process of APAR ID for the Students.
10. Digi locker-facility & data management for the Sum.

II. Essential Features of Management Information System.

1. The Management Information System developed by the firm shall include user friendly application for online filling of affiliation application, enrolment application, examination application form. For filing drop boxes populated with duly approved names of examination, name of the papers, paper codes, subjects, colleges, types and other fields as approved by University be incorporated.
2. Provisions be made in the system for online filling of application form either by students or by authorities of affiliated colleges so that they can upload information

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& download various reports and statements wherever necessary and as per direction of University.

3. System must store photograph, signature etc. of the students in JPG format ensuring good colour picture by analyzing picture. Data safety & security shall be the responsibility of the firm.
4. Typically, each course is divided into a number of semesters. The student is required to enrol for each semester at the beginning of the semester, and register in different component of courses. System should automatically verify such details and ready for online registration for continuing students in subsequent semesters.
5. System should be able to generate pre-filled exam form based on eligibility for the examination, subjects/papers selected at the time of registration for a given semester and results of the previous semester examination.
6. Introduce web enabled applications to capture student data, examination data, internal marks/Practical marks, centralized capturing of theory marks, coding/decoding, etc. as per University's requirement
7. System should provide the facility to generate eligibility report for eligible, provisional eligible, not eligible and pending students.
8. System development involve designing of logic for coding / decoding of roll number, providing secured web-based application to constituent units and affiliated colleges to collect, submit and display exam related information.
9. Software to have enough security procedures for full proof operations. All login/ access should be based on OTP authentication Mailing System.
10. Design, Development, Implementation, execution, maintenance and hosting of applications to facilitate the working of examination centres as per the University requirements, providing panel with admin capability. List of examination centres will be provided by the University. Firm will create the login account and password to each examination centre and admin account.
11. System shall have provision for the following reports of concerned examination centre be available for viewing, downloading, printing through examination centre login panel-(1) Roll list (ii) Registration Summary (iii) Alphabetic list (iv) question paper and answer book requirement statement through web-based application and to download and print Invigilator dairy. (v) result of regular students of center, (vi) tabulation register of the regular students of the centre and (vii) any other document or reports as specified by the university (viii) with provision for submission of online



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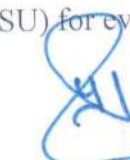
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absentee statement of each paper of each program of examination in the approved format. The facility to upload scanned documents, be incorporated.

12. To make provision for colleges to download/print Admission Card; to download and print candidate list and to prepare Question Paper & Answer sheet requirement/indent.
13. The work involves designing databases, creation of databases, updating databases, their maintenance, and ensuring data security as per directions of the university for different component of the MIS. Provision be made for Devnagri script in the system for Name of candidates, fathers name & mothers name in application forms, databases in English, mark-sheets, pdf printout to be taken by students, tabulation registers, and all statements wherever specified by university.
14. Necessary Integration with Online Payment Gateway services provided by Service Provider approved by University for direct transfer of money to the University Account shall be responsibility the firm.
15. System shall have provision to enter Continuous Assessment/Theory/ Practical /Self type course evaluation marks through the web-based/mobile based application.
16. System shall have provision for Department to enter Absence in an examination and Unfair Means case Registration through the web-based application.
17. Work involves scanning of answer-books at designated centres, uploading of the scanned Answer Booklet data into firm's server and integration of scanned answer book with online screen marking system deployed by the firm and updating award of marks for results processing including manpower and machinery used for scanning and hosting. Necessary space and electricity for the Scanning work will be provided by the VSU.
18. Scanning should be done with cutting the spine of the Answer books by trained manpower of Service Provider. All the pages of the Answer books should be accounted for and identified with the unique ID number. Scanned answer sheets must be stored in the proper manner. Scanning process should have the ability to read Barcode/QR code of the answer sheet/ questions. This data shall be mapped to the database at server.
19. The on-Screen Marking software should have provision to allocate time (as per approved by VSU) for evaluation for each question & record time spent on each



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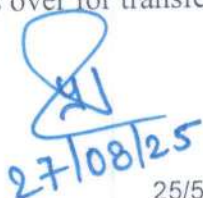
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question to be checked by the evaluator. It shall have check box to ensure that evaluator has visited each and every page/question of an answer book.

20. All the computers of Scanning Centers should not be loaded/ installed with any application or tool that has no utility for Scanning or Evaluation work. Preferably, fresh installation of all the software including system software after necessary customizations should be done before scanning work. The dedicated UPS system would also be arranged by the Service Provider at the place of scanning centre. The Selected Agency would ensure local server deployment. All the manpower involved in the scanning work should be engaged by the Service provider and the secrecy of the Answer Books will be the responsibility of the service provider agency.
21. Providing unique id to all evaluators/Examiners for online screen marking using internet access after due authentication each time of login using OTP. Tracking individual answer book page during evaluation shall be an essential feature. Capturing theory marks on screen in front of examiners. Freezing of theory marks on confirmation from examiners. Generation of remuneration bill.
22. System must have Examination Result Processing system in tune with Choice Based Credit System regulations and other regulation with support for Manual Mark/Grade Import for result processing.
23. System shall have provision to print grade cards for each semester with Display of Photograph and Signature of CE on Grade Statement. It shall also have provision (i) to print Transcript/consolidated statement, (ii) Merit List Generation, Based on Grade System (iii) Student wise and paper wise data export in excel. (iv)provision to print list of eligible students for convocation, (v) Provision to provide data for printing degree certificate/Migration Certificate/Bonafied Certificate/Ph.D. Registration Certificate to the printers system, (vi) provision to generate reports / statistics as per university requirements, (vii) Providing data to the University for posting of results on the internet, (viii) preparation of Tabulation Register and printing three copies of Tabulation Registers, (ix) generation of Exception Report if required,
24. System shall have provisions for preparation and supply of final database, after examination is over for transfer to university and to push same on depositories.



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III Essential Documents of Management Information System

The following documents including, but not limited to, will be submitted for a signoff of application architecture and development methodology:


- a) Details of validation rules and constraints like Integrity Checks etc. to be applied.
- b) Format of all input screens including data entry requirements.
- c) Format of all reports including exam-wise/day-wise fee collected that would be generated by the system.
- d) Business logic used for all reports and functions.
- e) Access control mechanisms, data security and audit trails to ensure that databases are not tampered or modified by unauthorized users. The following guidelines need to be observed for security Build a complete audit trail of all transactions (add, update and delete) using transaction log reports, so that errors in data, intentional or otherwise, can be traced and reversed, (ii) the most appropriate level of security commensurate with the value to that function for which it is deployed must be chosen, (iii) Access Controls must be provided to ensure that the databases are not tampered or modified by the system operators, (iv) Implement data security to allow for changes in technology and business needs, (v) compliance of ISO 27001:2013 or above security standards.
- g) Hardware Deployment Architecture, Network Design, Security Architecture etc. For the Project. Plans for User Acceptance Tests and System Integration Tests in a replica environment including Stress Tests and plans.
- h) Detailed Project Implementation Plan, component-wise activity schedule, etc. The Implementation Agency shall be solely responsible for the architecture of the system implemented to satisfy all features, functions and performance as described in this document including sizing of the required hardware. System architecture description provided in this document is for reference only. The Implementation Agency should ensure all possible and required improvements. The application design shall be such as to require the minimal installation, if at all, at the user's end, besides the Internet Browser and shall support all common browsers (like Internet explorer, Mozilla, Chrome etc.). Firms shall also design the Frontend and Backend portals for the Project and will integrate the same with existing portal of VSU as per directions. User's involvement will also be ensured during finalization of user interfaces, the mode of data entry, storage and retrieval, outputs reports, queries and the application design as a whole.

Online Work:

1. Design, development, implementation, execution, maintenance and hosting of student friendly application for online filling of application form for all kind of examinations such as main exam/suppl. exam/revaluation. Approximate 30,000/- students The Management Information System developed by the firm shall include duly approved names of examination, name of the papers, paper codes, subjects, colleges, types and other fields as approved by Controller of Examination (as per schedule decided by the University).
2. For regular students Design, development, implementation, execution, maintenance and hosting of student friendly application for online filling of application form by



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- authorities of affiliated colleges to upload information & download various reports and statements wherever necessary and as per direction of Controller of Examinations.
3. Storing photograph, signature etc. of the candidates in JPG or desired format after ensuring that proper quality picture has been uploaded by analyzing picture.
 4. Design, creation of Database, maintenance and updation with data security in duly approved manner as per directions of Controller of Examination and as per the approved scheme for examination Management Information System.
 5. Printing of challan as per the bank's/E-Mitra requirement and as instructed by the office with proper fees by giving unique challan number. Necessary Integration with Online Payment Gateway services provided by Service Provider approved by University for direct transfer of money to the University Account shall be responsibility of the firm. The firm will have to comply directions from Controller of Examination in this regard.
 6. Provision for Devnagri script in the system for Name of candidates, fathers name & mothers name in application forms, databases in Unicode, mark-sheet, pdf printout to be taken by students, tabulation registers, and all statements wherever specified by Controller of Examination.
 7. Design, Development, Implementation, execution, maintenance and hosting of applications to facilitate the working of examination centres as per the Vishvakarma Skills University requirements, panel with admin capability. List of examination centres will be provided by the University. Firm will create the login account and password to each examination centre and admin account. Data safety & security shall be the responsibility of the firm.
 8. The following reports of concerned examination centre must be available for viewing, downloading, printing through examination centre login panel-
(i) Roll list (ii) Registration Summary (iii) Alphabetic list (iv) any other document or reports as specified by the university (v) with provision for submission of online absentee statement of each paper of each program of examination in the approved format. The facility to upload scanned documents, if required.

Pre Examination Work:

1. Feeding/Scanning of barcodes/Form no. of the forms through Institutions and university. (Within three days as and when sent by the University office)
2. Allotment of Unique student ID to the students admitted in First semester/Part-1/Previous of a course.
3. Printing of the checklist as per the scheme in two copies (Within three days of scanning of the Data).
4. Updating of the data and providing updated list (Within seven days)
5. Generation of Roll no after getting all the forms, check list and updation list. As per direction of the University.
6. Providing basic Roll List as per direction of Vishvakarma Skills University.

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7. Providing Numerical Return College/examination centre wise/consolidated/paper wise in 3 copies as and when required.
8. Providing Question Paper statement subject wise/college wise/examination centre wise and consolidated in 3 copies as and when required.
9. Roll list in 3 copies with 2 carbon copy.
10. Registration summary in 3 copies.
11. Admission card online in two copies (one for candidates and one for exam. centre) and intimation for conserving.
12. Alphabetical sorted roll lists (Theory & Practical) as required.
13. The statement of student's no. appearing at each examination centre in each paper of exam in a particular class.
14. Generation of enrolment certificate for institutes.
15. Printing of enrolment register with soft copy, within 15 days from the commencement of the exam.
16. Supply of Statistics as per desired by Controller of Examinations.
17. Examination fees statement for the forms received, within 15 days from the commencement of the exam.
18. Centre wise attendance sheet in triplicate for each paper of examination where coding is done.
19. The marks filling should be done online, in this case instruction page with login id, password and other related material should be supplied.

Note: Required to be modified as per the current pattern of online submission of Marks OR better procedure.

20. Supply of Centre wise, date and session wise written answer books packets stickers as per approved format and provide date wise collection list giving unique number to each packet (3 Copies) before starting of the examinations.
21. Punching of data of packets collected, coding of answer books is to be done. scanned coded answer book, award sheets updated and make available through restricted access login the various report for university administration for overall monitoring of the process and consolidated view of the progress in post examination.
22. Reconciliation of Bank/E-Mitra statement/data with fee collected and identification of Application received without fee.
23. Sending SMS/e-mail to the students as and when required by the Controller of Examination.
24. Preparation of practical carry forward marks list in two copies.
25. The contract period for the above work shall be three years and extendable for one more year with mutual consent. In this period, if some modifications/changes are required by the university then it will be binding of the firm to implement such modification.



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IV Post Examination Work:

1. Preparations & compilation of marks list in two copies after compiling the data for each student for Semester Exams of as per "Scheme of Examination" of each course.
2. Evaluation through double scanning of answer-sheets.
3. Posting of marks awarded by examiners on answer/award sheets, through double scan or through double punching.
4. Providing Exception Report.
5. Preparation of the result as per the scheme of examination in each course.
6. Preparation of T.R. in 3 copies with in 7 days from the declaration of the result. (Two binded copies in plastic coated hard binding TR's as per direction of the Controller of Examinations). Also provide two soft copies.
7. Mark sheets with nomenclature of papers & photographs on laser printer of individual candidate printed on pre-numbered mark sheets of 90 gsm A-4 sized paper and as per prescribed format. A mark sheets number will also be generated which will be printed both in mark sheet and tabulation register. The abbreviations of the result codes should be mentioned in the bottom of the Mark sheet.
8. Preparation of Provisional certificates of Exit Semester after revaluation candidates on 80 gsm paper (Size 20 x 20 cms) consolidated marksheet.
9. Supply of TRs/ Marksheets and Provisional certificate of students college-wise.
10. Providing data to the University for posting of results on the internet. (Encrypted)
11. Statistical summary as per the approved format.
12. Tabulation registers for RL candidate.
13. The statement of RL candidates of each class should be supplied within 7 days from the declaration of the result.
14. Paper-wise absentee list of candidates.
15. Preparation of result T.R.'s, marks sheets etc. for the RL candidates and absentee 55 candidates on weekly basis.
16. Providing all information e.g. T.R., Merit lists, Highest marks etc. in Electronic form and in Removable Disk.
17. An MIS system be generated by the firm and firm will report to CE/Registrar/VC office.
18. Providing all the data in a removable Hard Disk.
19. Preparation of Consolidated Marksheet of final year with name of the papers with code numbers of the relevant syllabus.
20. Preparation of marksheets of all semester Scheme examination with SGPA/CGPA.
21. Preparation of Migration Certificate on demand by the students through online request.

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22. Supply of complete data base of all the students after declaration of results in the prescribed format which will be provided by Controller of Examination.

V Revaluation

1. Hosting of data of each candidate for submission of revaluation form as per the conditions framed by the University along with the challan.
2. Software to be developed to receive the forms of the candidates whose result is declared at a later stage with the challan.
3. Printing of check list of all the forms received.
4. Updating of data as per the check list corrections.
5. Preparation of list paper wise/packet wise for fetching copies for revaluations.
6. Receipt of flaps and preparations of database for actual roll numbers and fictitious roll numbers.
7. Preparation of revaluation result as per the scheme.
8. Preparation of TR/Mark-sheets.



The process mentioned in item number Total NO- ? of Revaluation keeps repeating till the last result is out.

VI Answer book Scanning-(Under R.T.I. Act-2005)

1. The firm will develop Web application for obtaining student requests for a Scanned copy of their answer books.
2. The firm will provide manpower, UPS and scanners required for scanning the work of Answer books of students in the University premises.
3. Space, Furniture, Electricity and Internet facilities will be provided by the University.
4. The firm will send Login credentials to students through SMS/e-mail messages.
5. The firm will provide different MIS reports as per University requirements.

VII Theory and Practical Bill Management System -

1. The module will be an extension of the current Theory/Practical Bill generation module.
2. Modules should have a login account for the Secrecy and Accounts and Finance Sections.
3. Login accounts for every desk of Secrecy dealing with the secrecy work of different examinations.
4. Login account for Section Officer and Assistant Registrar. Answer book practical bills generated will appear in the relevant desk account.
5. Here the relevant desk will have the facility to approve the answer book and question paper bill. Provision for remark should be there. Bills approved by the

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relevant desk must be visible in relevant Section Officer and Assistant Registrar accounts for approval.


6. AR accounts can generate different MIS as per their requirement Bills approved by secrecy will appear in A&F relevant desk accounts. Account must have a provision of correction and approval Bills approved by the desk will be available for approval in the Section Officer (A&F) account and Assistant Registrar (Secrecy).
7. Both SO/AR can generate Different MIS as per requirement. The module must be integrated with the payment gateway for the transfer of the bill amount in the examiner's account.

VIII Preparation and supply of final database, after merging all the revaluation results, corrections for further use in next exam.

IX Preparation and supply of final year passed students data for awarding degree in a Excel Sheet in Hindi (Devnagri Script) and English.

X All formats will be approved by the examination section.

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