**F: SIX ELEMENT ANALYSIS (TO BE)**

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| **System Roles** | | | | | | |
| **Process** | **Human** | **Non-computing hardware** | **Computing hardware** | **Software** | **Database** | **Communication & Network** |
| |  | | --- | | **Mapping Course outcomes(COs) to Program Learning Outcomes (PLOs)** | | **Higher Authorities:**  1. Receive the accreditation manual from UGC.  2. Upload the accreditation manual to SPMS.  **Department :**  1. Receive the accreditation manual from SPMS.  2. Updates the accreditation manual with required PLOs.  **Faculty:**  1. Receive updated accreditation manual through SPMS server.  2. List course content.  3. List Course Outcomes (COs).  4.Map Course Content to Course Outcomes(COs)  5.Make first  Version of Course Assessment Report.  6.Map assessments and assessment  questions to COs and PLOs in related  tables in the front end for each  Course.  7. Design course assessment using Course Outline, Course Content and Course Outcomes in the SPMS. | **Pen and Paper:**  1. Used for taking notes for new ideas. | **Computer/ Phone:**  1. Used for Higher Authorities to upload accreditation manual on SPMS.  2. Used for Department to update accreditation manual with required PLOs.  3.Used by Faculty  To make softcopies of Course Outcomes (COs) of the specific courses they are experts in and to map COs with PLOs.  **Printer:**  1. To print out hardcopies of Course Outcomes (COs) if needed. | **SPMS Higher Authorities frontend:**  1. Higher Authorities uses it to upload accreditation manual from the UGC to SPMS.  **SPMS Department frontend:**  1. Department uses it to update accreditation manual with required PLOs.  **SPMS Faculty frontend:**  1.Used by  The faculties to list, edit and map COs and PLOs and display course assessment report. | **SPMS :**  1. The required files, documents and reports created by the authorities, the department and the faculty for the map of COs and PLOs are stored in a data base. | **Internet:**  1. SPMS is an online web application for which all packets and requests online are transmitted.  **Mail:**  1. Email is primarily used for communication.  **Phone:**  1. May be used for communication. |
| **Student Assessment Data** | **Faculty:**  1. Log into SPMS faculty dashboard.    2. Faculty will be shown the courses they have/had for every semester under.  3. Select course (and section thereof).  4. Create (quiz/ exam/ project)  5. For each student, each student’s score for each question  6. Save the scores for that assessment. | **A4 paper:**  1. Used for recording student’s on-site response to Exam/ Quiz/ Project questions.  **Google Forms**  1. Used for recording a student's remote response to the questions. | **Computer/ Phone:**  1. Used for accessing the SPMS frontend. | **SPMS faculty frontend:**  1. Provides user interface for the faculty to enter student assessment data. | **SPMS :**  1. Stores student assessment data and derives student assessment information.  2. Sends email notifications to students at the end of each major assessment.  **Google Classroom:**  1. Import assessment data from google forms (or classroom, depending on their API), manually or automatically. | **Internet:**  1. SPMS is an online web application for which all packets and requests online are transmitted.  **Email:**  1. Email is the primary method of notifying the students about major assessment stages. |
| **Creating & Submitting OBE Report** | **Faculty:**  1. Uses SPMS App to make an OBE Mark sheet and Course Assessment Reports.  2. Log in SPMS.  3. Go to Courses  4. Each course has the "OBE Mark sheet”  5. The COs and PLOs will be mapped and mapped to specific questions in the CO and PLO Mapping phase.  6. This reports can be saved in the database by the Faculty. |  | **Computer/ Phone:**  1. Used for accessing the SPMS frontend.  **Cloud Server:**  1. Store processed/ grouped data back into SPMS.  2.Calculate CO percentages and determines success | **SPMS Assessment**  **Algorithm:**  1. Dynamically derive course evaluation information (e.g. on the accomplishment of CO and PLO) on the basis of course evaluation data and PLO-CO mapping. | **SPMS :**  1. Recover and table the PLO/CO performance data for a certain course and student(s).  2. The results analysis for students comes from the tabled data.  3. Store and collect required reports | **Internet:**  1. SPMS is an online web application for which all packets and requests online are transmitted. |
| **Preview Grades and Transcripts** | **Students**  1. Log into IRAS.  2. Search semester wise result for intended semester.  3. See grades for specific semesters.  4. Download transcript through browser.    5. Log into SPMS.  6. The option for each course will include its course name, ID and faculty name, alongside your comments.  7. The menu also includes a list of COs and PLOs.  8. Students can check grades and their performance for individual courses. | **Pen and Paper:**  1. Transcripts that are tabulated can be printed on paper. Hard copying is utilized in applications and other documents as the primary source of truth. | **Computer/**  **Phone:**  1. Used for accessing SPMS and IRAS.  **Printer:**  1. Used to print the tabulated transcript. | **SPMS Student frontend:**  1. Stores the list of PLOs and COs for a specific student.  2. Stores grades of each completed course.  **IRAS:**  1. Generate student transcript. | **SPMS:**  1. In order to store, maintain, update and receives each student's list of COs and PLOs, grade information for the student, and transcript in SPMS a database management service is utilized.  2. A remote web server is available to provide the user interface and website pages. | **Internet:**  1. SPMS is an online web application for which all packets and requests online are transmitted.  **Email:**  1. Softcopies may be emailed to students. |
| **Student and Faculty account details** | **Registrar Office:**  1. For creation or change account data sends user information/data to Admin.  **Admin:**  1. Logs into SPMS dashboard.  2. Creating new account/managing existing account.  3. Fills up the information required/edits the information fields of existing account.  4. Saves the new account/edited details. | **Pen and Paper:**  1. May be used for writing/ copying student/ faculty’s vital login information for account creation.  2.Hard copies | **Computer:**  1. Used for accessing and adding/editing data to SPMS/IRAS. | **IRAS:**  1.Provides user interface for add/managing accounts    **SPMS:**  1. Provides UI for the add/edit account data.  2. Shows new account input information fields.  3.If existing account, shows list of accounts & search bar for account search  4.Provides editing of information fields  5. provide option to save account information/data. | **IRAS Database:**  1. To save, maintain, update and receive account data, a database management service is utilized.  **SPMS Database:**  1. To save, maintain, update and receive account data, a database management service is utilized. | **Internet:**  1.SPMS is an online web application for which all packets and requests online are transmitted.  2. The internet access will be used for user interface and website pages.  **Manual**:  1. The Registrar's Office sends physical copies of user information to the Admin. |
| **View OBE report and Mark Sheet** | **Faculty:**  1.Log into SPMS faculty dashboard  3. Specify the scope and duration for the report on the performance assessment (entire course or individual student)  4.Download report in PDF form  **Student:**  1.Log into SPMS student dashboard  2. View OBE mark sheet in browser.  3. Get details about the selected semester performance.  4.Download report in PDF form  **Higher Authorities:**  1. Log into SPMS Higher Authorities dashboard.  2. View OBE Mark sheets, searchable by year, courses, and faculty.  3. View individual student reports. | **Pen and paper:**  1. Used for note-taking. | **Cloud Server:**  1.Receive and process incoming requests  **Computer/ Phone:**  1. View reports.  2. Save reports from browser to device | **SPMS Faculty frontend:**  1.Provide user interface for online Faculty navigation  2. Show specific reports on request.  3. Sort report data in customizable ways (by PLO, by CO, by semester, by course, by time)  **SPMS Student frontend:**  1. Provide user interface for online Student navigation.  2. Show specific reports | **SPMS:**  1. Recover PLO/CO accomplishment statistics from SPMS and compile them for a given course and student(s).  2. The results and analyses are derived from the tabled data. | **Internet:**  1. SPMS is an online web application for which all packets and requests online are transmitted. |