**Software Requirements Specification (SRS)**

**Administration & Human Resource Module - ERP System**

**Date: August 2025**

**1. Introduction**

**1.1 Purpose**

This document specifies the requirements for the Administration & Human Resource Module of the Educational ERP system, focusing on comprehensive employee lifecycle management, organizational administration, and institutional asset management.

**1.2 Scope**

The Administration & Human Resource Module manages:

* Complete employee lifecycle from recruitment to retirement
* Payroll processing and benefits administration
* Performance management and career development
* Leave management and time tracking
* Organizational structure and reporting relationships
* Asset and inventory management
* Compliance and regulatory reporting
* Employee self-service portal

**2. Functional Requirements**

**2.1 Employee Management System**

**Priority**: High

**Requirements:**

* **FR-H1.1**: System shall manage complete employee profiles and personal information
* **FR-H1.2**: System shall track employment history and position changes
* **FR-H1.3**: System shall maintain organizational chart and reporting relationships
* **FR-H1.4**: System shall support multiple employee types (faculty, staff, contractors)
* **FR-H1.5**: System shall manage employee documents and certifications
* **FR-H1.6**: System shall track visa status and work authorization for international employees
* **FR-H1.7**: System shall handle employee onboarding and offboarding workflows
* **FR-H1.8**: System shall maintain emergency contact information and security clearances

**2.2 Recruitment Management**

**Priority**: High

**Requirements:**

* **FR-H2.1**: System shall post job openings on multiple platforms
* **FR-H2.2**: System shall track applicant information and application status
* **FR-H2.3**: System shall schedule and manage interviews
* **FR-H2.4**: System shall support collaborative hiring decisions
* **FR-H2.5**: System shall generate offer letters and contracts
* **FR-H2.6**: System shall conduct background checks integration
* **FR-H2.7**: System shall track hiring metrics and recruitment analytics
* **FR-H2.8**: System shall maintain applicant communication history

**2.3 Payroll and Benefits Administration**

**Priority**: High

**Requirements:**

* **FR-H3.1**: System shall calculate salaries, wages, and overtime automatically
* **FR-H3.2**: System shall process tax deductions and statutory contributions
* **FR-H3.3**: System shall manage employee benefits enrollment and changes
* **FR-H3.4**: System shall handle retirement plan contributions and matching
* **FR-H3.5**: System shall generate pay stubs and tax documents (W-2, 1099)
* **FR-H3.6**: System shall support direct deposit and multiple payment methods
* **FR-H3.7**: System shall track and report payroll expenses by department
* **FR-H3.8**: System shall handle garnishments and special deductions

**2.4 Leave and Time Management**

**Priority**: High

**Requirements:**

* **FR-H4.1**: System shall track various leave types (vacation, sick, personal, sabbatical)
* **FR-H4.2**: System shall enforce leave policies and accrual rules
* **FR-H4.3**: System shall provide leave request and approval workflow
* **FR-H4.4**: System shall track time and attendance for hourly employees
* **FR-H4.5**: System shall integrate with biometric and card reader systems
* **FR-H4.6**: System shall generate timesheets and attendance reports
* **FR-H4.7**: System shall handle leave balances and carryover policies
* **FR-H4.8**: System shall support family and medical leave tracking (FMLA)

**2.5 Performance Management**

**Priority**: Medium

**Requirements:**

* **FR-H5.1**: System shall conduct annual and periodic performance reviews
* **FR-H5.2**: System shall set and track individual and team goals
* **FR-H5.3**: System shall support 360-degree feedback processes
* **FR-H5.4**: System shall manage professional development plans
* **FR-H5.5**: System shall track training completion and certifications
* **FR-H5.6**: System shall identify high performers and succession planning
* **FR-H5.7**: System shall handle performance improvement plans
* **FR-H5.8**: System shall generate performance analytics and reports

**2.6 Asset Management**

**Priority**: Medium

**Requirements:**

* **FR-H6.1**: System shall maintain inventory of all institutional assets
* **FR-H6.2**: System shall track asset location and assignment to employees
* **FR-H6.3**: System shall schedule and track maintenance activities
* **FR-H6.4**: System shall handle asset depreciation calculations
* **FR-H6.5**: System shall manage procurement requests and approvals
* **FR-H6.6**: System shall track warranty information and service contracts
* **FR-H6.7**: System shall generate asset reports and audits
* **FR-H6.8**: System shall support barcode/QR code asset identification

**2.7 Employee Self-Service Portal**

**Priority**: Medium

**Requirements:**

* **FR-H7.1**: System shall allow employees to update personal information
* **FR-H7.2**: System shall provide access to pay stubs and tax documents
* **FR-H7.3**: System shall enable leave request submission and tracking
* **FR-H7.4**: System shall allow benefits enrollment and changes
* **FR-H7.5**: System shall provide training catalog and enrollment
* **FR-H7.6**: System shall enable expense report submission
* **FR-H7.7**: System shall show organizational directory and contact information
* **FR-H7.8**: System shall provide performance review access and feedback

**3. Use Case Diagram - Administration & HR Module**

Administration & HR Module Use Cases

HR Manager ------------------> Manage Employee Records

-----> Process Recruitment

-----> Administer Benefits

-----> Generate HR Reports

-----> Conduct Performance Reviews

-----> Handle Disciplinary Actions

Payroll Administrator -------> Process Payroll

-----> Calculate Deductions

-----> Generate Tax Reports

-----> Handle Direct Deposits

-----> Manage Payroll Corrections

Recruiter -------------------> Post Job Openings

-----> Screen Applications

-----> Schedule Interviews

-----> Track Hiring Progress

-----> Generate Offer Letters

Employee --------------------> View Pay Stubs

-----> Request Leave

-----> Update Personal Info

-----> Enroll in Benefits

-----> Submit Expense Reports

-----> Complete Training

-----> View Performance Reviews

Department Head -------------> Approve Leave Requests

-----> Review Performance

-----> Manage Team Budget

-----> Request Asset Purchases

-----> Access Team Reports

Asset Manager ---------------> Track Asset Inventory

-----> Schedule Maintenance

-----> Process Purchase Orders

-----> Generate Asset Reports

-----> Manage Vendor Contracts

System Administrator --------> Configure HR Policies

-----> Manage User Access

-----> Set Up Workflows

-----> Monitor System Performance

**4. Class Diagram - Administration & HR Module**

Employee

├── employeeId: String

├── firstName: String

├── lastName: String

├── email: String

├── phone: String

├── address: Address

├── dateOfBirth: Date

├── hireDate: Date

├── terminationDate: Date

├── employeeType: EmployeeType

├── department: Department

├── position: Position

├── manager: Employee

├── salary: Decimal

├── status: EmployeeStatus

└── methods: updateInfo(), requestLeave(), viewPayStub()

Position

├── positionId: String

├── title: String

├── department: Department

├── grade: String

├── minSalary: Decimal

├── maxSalary: Decimal

├── jobDescription: Text

├── requirements: Text

├── isActive: Boolean

└── methods: updateSalaryRange(), assignEmployee()

Department

├── departmentId: String

├── name: String

├── parentDepartment: Department

├── head: Employee

├── budget: Decimal

├── costCenter: String

├── location: String

└── methods: addEmployee(), calculateBudget()

PayrollRecord

├── payrollId: String

├── employeeId: String (FK)

├── payPeriod: String

├── grossPay: Decimal

├── deductions: List<Deduction>

├── netPay: Decimal

├── payDate: Date

├── status: PayrollStatus

└── methods: calculateDeductions(), generatePayStub()

LeaveRequest

├── requestId: String

├── employeeId: String (FK)

├── leaveType: LeaveType

├── startDate: Date

├── endDate: Date

├── daysRequested: Integer

├── reason: String

├── status: RequestStatus

├── approvedBy: String

├── approvalDate: Date

└── methods: submitRequest(), approve(), reject()

Performance Review

├── reviewId: String

├── employeeId: String (FK)

├── reviewerId: String (FK)

├── reviewPeriod: String

├── overallRating: Integer

├── goals: List<Goal>

├── competencies: List<Competency>

├── comments: Text

├── status: ReviewStatus

└── methods: submitReview(), calculateRating()

Asset

├── assetId: String

├── assetTag: String

├── name: String

├── category: AssetCategory

├── purchaseDate: Date

├── purchasePrice: Decimal

├── currentValue: Decimal

├── location: String

├── assignedTo: Employee

├── status: AssetStatus

├── warrantyExpiry: Date

└── methods: assignToEmployee(), scheduleMainte()

JobPosting

├── jobId: String

├── positionId: String (FK)

├── title: String

├── description: Text

├── requirements: Text

├── salaryRange: String

├── postingDate: Date

├── closingDate: Date

├── status: JobStatus

├── postedBy: String

└── methods: publishJob(), closeJob()

Applicant

├── applicantId: String

├── jobId: String (FK)

├── firstName: String

├── lastName: String

├── email: String

├── phone: String

├── resumeUrl: String

├── applicationDate: Date

├── status: ApplicationStatus

├── interviewScheduled: Boolean

└── methods: scheduleInterview(), updateStatus()

Training

├── trainingId: String

├── title: String

├── description: Text

├── category: TrainingCategory

├── duration: Integer

├── instructor: String

├── maxCapacity: Integer

├── startDate: Date

├── endDate: Date

├── status: TrainingStatus

└── methods: enrollEmployee(), trackCompletion()

Expense

├── expenseId: String

├── employeeId: String (FK)

├── category: ExpenseCategory

├── description: String

├── amount: Decimal

├── expenseDate: Date

├── receiptUrl: String

├── status: ExpenseStatus

├── approvedBy: String

└── methods: submitExpense(), reimburse()

**5. Sequence Diagram - Employee Onboarding Process**

HR -> OnboardingSystem: Initialize new employee setup

OnboardingSystem -> EmployeeService: createEmployeeProfile()

EmployeeService -> Database: INSERT employee record

Database -> EmployeeService: Employee created

EmployeeService -> AccountService: createUserAccount()

AccountService -> EmailService: sendWelcomeEmail()

EmailService -> NewEmployee: Welcome email with credentials

OnboardingSystem -> DocumentService: generateDocuments()

DocumentService -> OnboardingSystem: Documents ready

OnboardingSystem -> TaskService: createOnboardingTasks()

TaskService -> NotificationService: notifyManagers()

NotificationService -> Manager: New employee notification

NewEmployee -> OnboardingPortal: Complete onboarding forms

OnboardingPortal -> EmployeeService: updateEmployeeInfo()

EmployeeService -> BenefitsService: enrollInBenefits()

BenefitsService -> PayrollService: setupPayroll()

PayrollService -> AssetService: assignAssets()

AssetService -> OnboardingSystem: Onboarding complete

**6. Sequence Diagram - Leave Request Approval**

Employee -> LeavePortal: Submit leave request

LeavePortal -> LeaveService: validateRequest()

LeaveService -> PolicyEngine: checkLeavePolicy()

PolicyEngine -> LeaveService: Policy validation

LeaveService -> Database: INSERT leave request

Database -> LeaveService: Request saved

LeaveService -> WorkflowService: initiateApproval()

WorkflowService -> NotificationService: notifyManager()

NotificationService -> Manager: Leave request notification

Manager -> ApprovalPortal: Review leave request

Manager -> ApprovalPortal: Approve/Reject

ApprovalPortal -> LeaveService: updateRequestStatus()

LeaveService -> Database: UPDATE request status

LeaveService -> CalendarService: blockCalendar()

CalendarService -> PayrollService: updateLeaveBalance()

PayrollService -> NotificationService: confirmationToEmployee()

NotificationService -> Employee: Leave approval notification

**7. Activity Diagram - Performance Review Process**

Start

↓

HR Initiates Review Cycle

↓

System Generates Review Forms

↓

Notify Employees and Managers

↓

Employee Completes Self-Assessment

↓

Manager Reviews Self-Assessment

↓

Manager Conducts Review Meeting

↓

Manager Completes Review Form

↓

[360 Feedback Required?] → Yes → Send Peer Review Requests

↓

Collect Peer Feedback

↓

Compile Feedback

↓

HR Reviews Completed Reviews

↓

[Review Approved?] → No → Return for Revision

↓

Notify Manager

↓

Return to Manager Reviews

↓

Calculate Performance Ratings

↓

Generate Performance Reports

↓

Schedule Follow-up Meetings

↓

Update Employee Development Plans

↓

Archive Review Documents

↓

Generate Analytics Reports

↓

End

**8. Activity Diagram - Asset Procurement Process**

Start

↓

Employee Requests Asset

↓

Submit Purchase Requisition

↓

Department Head Review

↓

[Approved?] → No → Reject Request

↓

Notify Requestor

↓

End

↓

Check Budget Availability

↓

[Budget Available?] → No → Request Budget Adjustment

↓

Wait for Budget Approval

↓

Generate Purchase Order

↓

Send PO to Approved Vendor

↓

Vendor Delivers Asset

↓

Receiving Department Verifies

↓

[Asset Acceptable?] → No → Initiate Return Process

↓

Contact Vendor

↓

Asset Inspection Passed

↓

Generate Asset Tag

↓

Record in Asset Management System

↓

Assign to Requesting Employee

↓

Update Asset Database

↓

Process Vendor Payment

↓

Notify Stakeholders

↓

Schedule Maintenance (if applicable)

↓

End

**9. Non-Functional Requirements**

**9.1 Performance Requirements**

* **NFR-H1**: Payroll processing shall complete within 30 minutes for 500 employees
* **NFR-H2**: Employee lookup shall return results within 1 second
* **NFR-H3**: Leave request approval shall process within 2 seconds
* **NFR-H4**: Performance review reports shall generate within 10 seconds

**9.2 Security Requirements**

* **NFR-H5**: Employee personal data shall be encrypted with AES-256
* **NFR-H6**: Access to salary information shall require special authorization
* **NFR-H7**: All HR actions shall maintain complete audit trails
* **NFR-H8**: System shall comply with employment law data retention requirements

**9.3 Compliance Requirements**

* **NFR-H9**: System shall comply with GDPR for employee data privacy
* **NFR-H10**: System shall support FMLA compliance tracking and reporting
* **NFR-H11**: System shall generate EEO-1 reports for compliance
* **NFR-H12**: System shall maintain records per legal retention requirements

**9.4 Availability Requirements**

* **NFR-H13**: Employee self-service portal shall have 99.5% uptime
* **NFR-H14**: Payroll system shall have scheduled maintenance windows
* **NFR-H15**: System shall support 24/7 access for global employees
* **NFR-H16**: Emergency contact information shall be always accessible

**10. Database Design - Key Tables**

**10.1 Employees Table**

CREATE TABLE employees (

employee\_id VARCHAR(20) PRIMARY KEY,

first\_name VARCHAR(50) NOT NULL,

last\_name VARCHAR(50) NOT NULL,

email VARCHAR(100) UNIQUE NOT NULL,

phone VARCHAR(20),

date\_of\_birth DATE,

hire\_date DATE NOT NULL,

termination\_date DATE,

employee\_type ENUM('Full-time', 'Part-time', 'Contract', 'Intern'),

department\_id VARCHAR(20),

position\_id VARCHAR(20),

manager\_id VARCHAR(20),

salary DECIMAL(10,2),

status ENUM('Active', 'Inactive', 'Terminated', 'On Leave'),

created\_date TIMESTAMP DEFAULT CURRENT\_TIMESTAMP,

FOREIGN KEY (department\_id) REFERENCES departments(department\_id),

FOREIGN KEY (position\_id) REFERENCES positions(position\_id),

FOREIGN KEY (manager\_id) REFERENCES employees(employee\_id)

);

**10.2 Leave Requests Table**

CREATE TABLE leave\_requests (

request\_id VARCHAR(20) PRIMARY KEY,

employee\_id VARCHAR(20) NOT NULL,

leave\_type ENUM('Vacation', 'Sick', 'Personal', 'Maternity', 'Paternity', 'Sabbatical'),

start\_date DATE NOT NULL,

end\_date DATE NOT NULL,

days\_requested INTEGER NOT NULL,

reason TEXT,

status ENUM('Pending', 'Approved', 'Rejected', 'Cancelled'),

approved\_by VARCHAR(20),

approval\_date DATETIME,

created\_date TIMESTAMP DEFAULT CURRENT\_TIMESTAMP,

FOREIGN KEY (employee\_id) REFERENCES employees(employee\_id),

FOREIGN KEY (approved\_by) REFERENCES employees(employee\_id)

);

**10.3 Assets Table**

CREATE TABLE assets (

asset\_id VARCHAR(20) PRIMARY KEY,

asset\_tag VARCHAR(20) UNIQUE NOT NULL,

name VARCHAR(200) NOT NULL,

category ENUM('Computer', 'Furniture', 'Equipment', 'Vehicle', 'Software'),

purchase\_date DATE,

purchase\_price DECIMAL(10,2),

current\_value DECIMAL(10,2),

location VARCHAR(100),

assigned\_to VARCHAR(20),

status ENUM('Available', 'Assigned', 'Maintenance', 'Retired'),

warranty\_expiry DATE,

created\_date TIMESTAMP DEFAULT CURRENT\_TIMESTAMP,

FOREIGN KEY (assigned\_to) REFERENCES employees(employee\_id)

);

**10.4 Payroll Records Table**

CREATE TABLE payroll\_records (

payroll\_id VARCHAR(20) PRIMARY KEY,

employee\_id VARCHAR(20) NOT NULL,

pay\_period VARCHAR(20) NOT NULL,

gross\_pay DECIMAL(10,2) NOT NULL,

federal\_tax DECIMAL(10,2),

state\_tax DECIMAL(10,2),

social\_security DECIMAL(10,2),

medicare DECIMAL(10,2),

benefits\_deduction DECIMAL(10,2),

net\_pay DECIMAL(10,2) NOT NULL,

pay\_date DATE NOT NULL,

status ENUM('Draft', 'Processed', 'Paid', 'Cancelled'),

created\_date TIMESTAMP DEFAULT CURRENT\_TIMESTAMP,

FOREIGN KEY (employee\_id) REFERENCES employees(employee\_id)

);

**11. Integration Points**

**11.1 Internal Integrations**

* Academic Module: Faculty workload and teaching assignments
* Finance Module: Budget approvals and expense tracking
* Main System: User authentication and notification services

**11.2 External Integrations**

* Payroll Services (ADP, Paychex, Workday)
* Benefits Providers (Insurance companies, 401k providers)
* Background Check Services (Sterling, HireRight)
* Time Clock Systems (Kronos, ADP Time & Labor)
* Applicant Tracking Systems (Greenhouse, Lever)
* Learning Management Systems (LinkedIn Learning, Coursera)
* Government Reporting Systems (IRS, Department of Labor)

**12. Business Rules**

**12.1 Leave Management Rules**

* Annual leave accrual: 15 days per year for first 5 years, 20 days thereafter
* Sick leave: 12 days per year, can accumulate up to 60 days
* Leave requests must be submitted 2 weeks in advance for vacation
* Manager approval required for all leave requests over 3 consecutive days
* Leave without pay requires HR director approval

**12.2 Payroll Rules**

* Payroll processed bi-weekly on Fridays
* Overtime calculated at 1.5x regular rate after 40 hours
* Benefits eligibility after 90 days of employment
* Direct deposit required for all employees
* Payroll corrections must be approved by HR manager

**12.3 Performance Management Rules**

* Annual performance reviews required for all employees
* Probationary review at 90 days for new hires
* Goals must be set within 30 days of review period start
* Performance improvement plans trigger after two consecutive poor reviews
* High performers eligible for accelerated advancement consideration

**12.4 Asset Management Rules**

* All assets over $500 must be tagged and tracked
* Annual asset inventory required
* Asset assignment requires manager approval
* Personal use of company assets prohibited without authorization
* Asset disposal requires three quotes for items over $1000

**13. Workflow Definitions**

**13.1 Employee Onboarding Workflow**

1. **Pre-boarding Phase**: HR creates employee record, sends welcome package
2. **Day 1**: IT setup, badge creation, initial documentation
3. **Week 1**: Department orientation, mentor assignment, initial training
4. **30 Days**: Check-in meeting, benefits enrollment completion
5. **90 Days**: Probationary review, full system access granted

**13.2 Performance Review Workflow**

1. **Preparation Phase**: HR sends review notifications, forms distributed
2. **Self-Assessment**: Employee completes self-evaluation
3. **Manager Review**: Supervisor conducts review meeting and completes evaluation
4. **Calibration**: HR reviews for consistency and compliance
5. **Finalization**: Final ratings assigned; development plans created

**13.3 Leave Approval Workflow**

1. **Submission**: Employee submits leave request through self-service portal
2. **Initial Review**: System validates against leave policies and balances
3. **Manager Approval**: Direct supervisor reviews and approves/rejects
4. **HR Review**: HR validates for compliance and policy adherence
5. **Finalization**: Calendar updated, payroll notified, confirmations sent

**14. Reporting Requirements**

**14.1 Operational Reports**

* Employee demographic reports
* Turnover and retention analysis
* Leave utilization reports
* Training completion tracking
* Asset utilization reports

**14.2 Compliance Reports**

* EEO-1 workforce composition report
* FMLA usage and compliance report
* Workers' compensation claims report
* Salary equity analysis report
* Benefits enrollment summaries

**14.3 Management Reports**

* Departmental headcount and cost analysis
* Performance review completion status
* Recruitment metrics and time-to-hire
* Employee engagement survey results
* Training ROI and effectiveness reports

**15. Data Migration Requirements**

**15.1 Legacy System Data**

* Employee master data with complete history
* Payroll records for current fiscal year plus 7 years historical
* Performance review data for active employees
* Asset inventory with current assignments
* Leave balances and historical usage

**15.2 Data Quality Requirements**

* Employee data validation against government ID systems
* Salary data verification against budget allocations
* Asset data reconciliation with financial records
* Leave balance verification with payroll systems

**16. Training and Change Management**

**16.1 User Training Requirements**

* HR staff: Comprehensive system administration training
* Managers: Approval workflows and reporting access
* Employees: Self-service portal navigation and functionality
* IT staff: Technical administration and troubleshooting

**16.2 Change Management Strategy**

* Phased rollout by department
* Champion network for user support
* Regular communication updates
* Feedback collection and system improvements

**17. Acceptance Criteria**

**17.1 Employee Management**

* Complete employee lifecycle management from hire to termination
* Accurate organizational chart with reporting relationships
* Document management with secure access controls
* Employee self-service functionality working correctly

**17.2 Payroll Processing**

* Accurate salary and wage calculations including deductions
* Tax compliance and proper withholding calculations
* Direct deposit processing without errors
* Pay stub generation and distribution

**17.3 Leave Management**

* Policy enforcement for all leave types
* Approval workflow functioning correctly
* Accurate balance calculations and tracking
* Calendar integration for scheduling

**17.4 Performance Management**

* Review cycle automation and tracking
* Goal setting and progress monitoring
* 360-degree feedback collection and compilation
* Performance analytics and reporting

**17.5 Asset Management**

* Complete asset lifecycle tracking
* Assignment and transfer functionality
* Maintenance scheduling and tracking
* Depreciation calculations and reporting

**17.6 Reporting and Analytics**

* All standard reports generate accurately and timely
* Custom report creation functionality
* Dashboard metrics reflect real-time data
* Compliance reporting meets regulatory requirements