**SOS VEDIC ACADEMY**

**System Requirements Document**

**Academy Management System**

**Version:** 1.0  
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**Document Type:** Functional Requirements Specification

**1. EXECUTIVE SUMMARY**

**1.1 Purpose**

Development of a comprehensive Learning Management System (LMS) for SOS Vedic Academy to manage the complete lifecycle of Vedic Astrology education, from student enrollment to professional certification.

**1.2 Scope**

The system will manage:

* 4 certification levels (Foundation to Master)
* 30-month curriculum with 116 weeks of content
* Student enrollment, progress tracking, and assessment
* Faculty management and mentorship programs
* Payment processing and financial management
* Learning resources and live sessions
* Career support and certification issuance

**1.3 Target Users**

* **Students:** 500-5000 concurrent enrollments
* **Faculty/Mentors:** 50-200 instructors
* **Administrators:** 10-20 staff members
* **External Stakeholders:** Employers, verification agencies

**2. CORE MODULES OVERVIEW**

| **Module Code** | **Module Name** | **Primary Function** |
| --- | --- | --- |
| CUR | Curriculum Management | Course structure, content organization |
| STU | Student Management | Enrollment, progress, certifications |
| ASM | Assessment Management | Exams, evaluations, grading |
| FAC | Faculty & Mentorship | Instructor management, mentoring |
| RES | Learning Resources | Content library, materials |
| PAY | Payment & Finance | Fee collection, invoicing |
| COM | Communication | Live sessions, forums, messaging |
| CAR | Career Support | Job placement, professional profiles |
| PLT | Platform Features | Tools, integrations, SOS Astro |
| QUA | Quality Assurance | Feedback, ratings, compliance |

**3. DETAILED MODULE REQUIREMENTS**

**3.1 CURRICULUM MANAGEMENT MODULE (CUR\_)**

**3.1.1 Functional Requirements**

**FR-CUR-001: Certification Level Management**

* Define and manage 4 certification levels with distinct characteristics
* Configure duration (months/weeks/days), fees, and passing criteria
* Support level sequencing and prerequisites
* Enable level activation/deactivation

**FR-CUR-002: Curriculum Structure**

* Organize curriculum into hierarchical structure: Level → Month → Week → Topic
* Assign theory, practical, and self-study hours to each week
* Define week start/end ranges within months
* Support curriculum versioning and updates

**FR-CUR-003: Topic Management**

* Create and organize topics within weeks
* Define topic order and learning objectives
* Mark topics as core or supplementary
* Link topics to learning resources

**FR-CUR-004: Practical Exercises**

* Define hands-on exercises for each week
* Specify difficulty levels (Beginner to Master)
* Estimate exercise duration
* Link exercises to assessment criteria

**3.1.2 Non-Functional Requirements**

* Support curriculum for up to 10 certification levels
* Load curriculum data in < 2 seconds
* Support concurrent curriculum updates by multiple administrators

**3.2 STUDENT MANAGEMENT MODULE (STU\_)**

**3.2.1 Functional Requirements**

**FR-STU-001: Student Registration & Profile**

* Online registration with email verification
* Profile management (personal info, contact details)
* SOS Astro platform account integration
* Multi-country support with timezone handling

**FR-STU-002: Enrollment Management**

* Enroll students in specific certification levels
* Support multiple package types (Complete, Level-by-Level, Fast-Track)
* Track enrollment status (Enrolled, In Progress, Completed, Dropped, On Hold)
* Calculate expected completion dates based on package duration

**FR-STU-003: Progress Tracking**

* Track week-by-week completion percentage
* Record start and completion dates for each week
* Support status tracking (Not Started, In Progress, Completed, Skipped)
* Generate progress reports and dashboards

**FR-STU-004: Assessment Tracking**

* Record student assessment attempts and scores
* Calculate percentages and pass/fail status
* Support multiple attempts with attempt numbering
* Link assessments to evaluating faculty

**FR-STU-005: Certification Issuance**

* Generate unique certificate numbers
* Issue blockchain-verified digital certificates
* Provide verification URLs for external validation
* Support certificate revocation with reason tracking

**FR-STU-006: Student Dashboard**

* Display current level and progress
* Show upcoming assessments and deadlines
* Access learning resources and schedules
* View payment status and outstanding fees

**3.2.2 Non-Functional Requirements**

* Support 5,000+ concurrent active students
* Dashboard load time < 3 seconds
* 99.9% uptime for student portal
* Mobile-responsive design for all student interfaces

**3.3 ASSESSMENT MANAGEMENT MODULE (ASM\_)**

**3.3.1 Functional Requirements**

**FR-ASM-001: Assessment Type Configuration**

* Define assessment types (Written Exam, Practical Exam, Case Study, etc.)
* Configure assessment parameters (duration, max marks, quantity)
* Link assessments to certification levels

**FR-ASM-002: Assessment Scheduling**

* Schedule assessments for students based on progress
* Support multiple assessment dates per level
* Send automated reminders to students

**FR-ASM-003: Assessment Delivery**

* Online assessment platform for written exams
* Chart analysis submission for practical exams
* Case study report uploads
* Live consultation recording and evaluation

**FR-ASM-004: Grading & Evaluation**

* Faculty grading interface with rubrics
* Automated scoring for objective questions
* Manual evaluation for subjective assessments
* Feedback provision to students

**FR-ASM-005: Assessment Analytics**

* Pass/fail rates by level and assessment type
* Average scores and performance trends
* Individual student performance analysis
* Faculty evaluation workload tracking

**3.3.2 Non-Functional Requirements**

* Support simultaneous assessments for 200+ students
* Secure assessment delivery (no cheating mechanisms)
* Assessment data backup every 15 minutes during active exams
* Support multiple question types (MCQ, Short Answer, Essay)

**3.4 FACULTY & MENTORSHIP MODULE (FAC\_)**

**3.4.1 Functional Requirements**

**FR-FAC-001: Faculty Profile Management**

* Comprehensive faculty profiles (bio, experience, specialization)
* Track traditional lineage and published works
* Designate lead faculty vs. guest faculty
* Faculty availability and schedule management

**FR-FAC-002: Mentor Assignment**

* Automated mentor-student matching based on level
* Enforce mentor-student ratios (1:25 for Foundation, 1:5 for Master)
* Support manual mentor reassignment
* Track active and completed mentorship relationships

**FR-FAC-003: Mentorship Session Management**

* Schedule one-on-one and group mentorship sessions
* Support session types (One-on-One, Group, Emergency, Project Review)
* Record session notes and topics discussed
* Student feedback rating for sessions

**FR-FAC-004: Faculty Dashboard**

* View assigned students and mentees
* Access pending assessment evaluations
* Schedule availability and session calendar
* Performance metrics and student feedback

**FR-FAC-005: Faculty Workload Management**

* Track teaching hours and mentorship sessions
* Monitor evaluation pending items
* Balance workload across faculty members

**3.4.2 Non-Functional Requirements**

* Support 200+ faculty members
* Real-time mentor availability updates
* Integration with calendar systems (Google Calendar, Outlook)

**3.5 LEARNING RESOURCES MODULE (RES\_)**

**3.5.1 Functional Requirements**

**FR-RES-001: Resource Repository**

* Centralized library for all learning materials
* Support multiple resource types (Video, Document, PDF, Audio, Interactive)
* Categorize resources by type and topic
* Version control for updated resources

**FR-RES-002: Resource-Week Mapping**

* Link resources to specific curriculum weeks
* Define mandatory vs. optional resources
* Specify resource sequence/order within weeks

**FR-RES-003: Resource Access Control**

* Control access based on enrollment status
* Premium resource access for paid students only
* Progress-based unlocking of resources

**FR-RES-004: Resource Analytics**

* Track resource views and completion rates
* Identify most/least accessed resources
* Student engagement metrics per resource

**FR-RES-005: Content Upload & Management**

* Faculty content upload interface
* Support bulk upload for multiple files
* Automatic transcoding for video content
* CDN integration for fast delivery

**3.5.2 Non-Functional Requirements**

* Support 5TB+ of learning content
* Video streaming with adaptive bitrate
* 99.9% content availability
* Global CDN for fast access (< 5 second load time)

**3.6 PAYMENT & FINANCE MODULE (PAY\_)**

**3.6.1 Functional Requirements**

**FR-PAY-001: Package Management**

* Define course packages with pricing
* Configure payment plans and installments
* Apply discounts and promotional offers
* Support multiple currencies (USD primary)

**FR-PAY-002: Payment Processing**

* Integrate payment gateways (Stripe, PayPal, Razorpay)
* Support multiple payment methods (Credit/Debit cards, Bank Transfer)
* Generate unique transaction IDs
* Send payment confirmation emails

**FR-PAY-003: Installment Management**

* Track installment schedules for payment plans
* Send payment reminders before due dates
* Handle partial payments and outstanding balances
* Support early payment discounts

**FR-PAY-004: Invoice Generation**

* Generate invoices for each payment
* Downloadable PDF invoices
* Include tax information (as applicable)
* Support invoice customization

**FR-PAY-005: Financial Reporting**

* Revenue reports by month, package, and level
* Outstanding payment tracking
* Refund management and tracking
* Payment reconciliation reports

**FR-PAY-006: Refund Management**

* Process refund requests with approval workflow
* Track refund reasons and amounts
* Update enrollment status post-refund

**3.6.2 Non-Functional Requirements**

* PCI DSS compliance for payment processing
* Secure storage of payment information
* Real-time payment status updates
* Support 1,000+ transactions per day

**3.7 COMMUNICATION & COLLABORATION MODULE (COM\_)**

**3.7.1 Functional Requirements**

**FR-COM-001: Live Session Management**

* Schedule live Q&A, workshops, and guest speaker sessions
* Integrate video conferencing (Zoom, Google Meet)
* Record sessions for later viewing
* Track session attendance

**FR-COM-002: Attendance Tracking**

* Automatic attendance marking via join/leave times
* Participation rating by instructors
* Attendance reports per student

**FR-COM-003: Discussion Forums**

* Level-specific and general discussion forums
* Topic creation and post threading
* Upvote/downvote functionality
* Mark posts as solutions
* Pin important topics
* Lock closed discussions

**FR-COM-004: Direct Messaging**

* Student-faculty direct messaging
* Student-mentor messaging
* Message notifications (email, push)

**FR-COM-005: Announcements**

* Broadcast announcements to all students or specific levels
* Email and in-app notifications
* Announcement archive

**FR-COM-006: Notifications**

* Assignment deadlines
* Assessment schedules
* Payment reminders
* New resource availability
* Forum replies and mentions

**3.7.2 Non-Functional Requirements**

* Support 500+ concurrent live session attendees
* Real-time messaging with < 2 second latency
* Email delivery rate > 98%
* Mobile push notification support

**3.8 CAREER SUPPORT MODULE (CAR\_)**

**3.8.1 Functional Requirements**

**FR-CAR-001: Career Pathway Definition**

* Define career paths (Independent Consultant, Teaching, Corporate, etc.)
* Link pathways to required certification levels
* Provide average income ranges

**FR-CAR-002: Professional Profile**

* Create professional astrologer profiles on SOS Astro platform
* Display certifications and specializations
* Client review and rating system

**FR-CAR-003: Job Board**

* Post astrology job opportunities
* Student job application tracking
* Employer connection facilitation

**FR-CAR-004: Career Tracking**

* Track student employment status post-certification
* Record job titles, companies, and income ranges
* Success story collection

**FR-CAR-005: Practice Setup Support**

* Business setup guidance resources
* Marketing and promotion tools
* Client management system access

**3.8.2 Non-Functional Requirements**

* Integration with SOS Astro professional network
* Public profile page load time < 2 seconds
* Support 10,000+ professional profiles

**3.9 PLATFORM FEATURES MODULE (PLT\_)**

**3.9.1 Functional Requirements**

**FR-PLT-001: SOS Astro Integration**

* Seamless login between Academy and SOS Astro platform
* Share birth chart library access
* Integrated chart calculation tools
* Practice chart library (1000+ charts)

**FR-PLT-002: Mobile Applications**

* iOS and Android native apps
* Offline content access
* Push notifications for updates
* Mobile-optimized video playback

**FR-PLT-003: Learning Dashboard**

* Progress visualization (charts, graphs)
* Upcoming deadlines and tasks
* Recent activity feed
* Quick access to resources

**FR-PLT-004: Practice Tools**

* Chart analysis simulator
* Quiz and self-assessment tools
* Flashcards for terminology
* Case study analyzer

**FR-PLT-005: Reporting & Analytics**

* Student progress reports
* Faculty performance reports
* Financial reports
* Engagement analytics

**3.9.2 Non-Functional Requirements**

* Cross-platform compatibility (Web, iOS, Android)
* Offline mode for mobile apps (sync when online)
* Data synchronization within 5 minutes
* Support 10,000+ daily active users

**3.10 QUALITY ASSURANCE MODULE (QUA\_)**

**3.10.1 Functional Requirements**

**FR-QUA-001: Student Feedback Collection**

* Post-course feedback surveys
* Weekly content feedback
* Faculty evaluation ratings
* Platform usability feedback

**FR-QUA-002: Feedback Analysis**

* Aggregate ratings by level, week, faculty
* Sentiment analysis of text feedback
* Trend identification over time
* Actionable insights dashboard

**FR-QUA-003: Quality Metrics**

* Student satisfaction scores (target > 4.5/5.0)
* Course completion rates (target > 85%)
* Assessment pass rates
* Time-to-completion tracking

**FR-QUA-004: Continuous Improvement**

* Curriculum review based on feedback
* Faculty performance improvement plans
* Resource effectiveness analysis

**FR-QUA-005: Compliance & Accreditation**

* Track accreditation requirements
* Generate compliance reports
* Audit trail for all system activities

**3.10.2 Non-Functional Requirements**

* Anonymous feedback support
* Feedback response rate > 60%
* Real-time quality dashboards
* Historical data retention for 5+ years

**4. SYSTEM-WIDE REQUIREMENTS**

**4.1 Security Requirements**

**SR-001: Authentication & Authorization**

* Multi-factor authentication (MFA) for all users
* Role-based access control (RBAC) - Student, Faculty, Admin, Super Admin
* Session timeout after 30 minutes of inactivity
* Password complexity requirements (min 8 chars, special chars, numbers)

**SR-002: Data Protection**

* Encrypt sensitive data at rest (AES-256)
* Encrypt data in transit (TLS 1.3)
* Regular security audits and penetration testing
* GDPR and data privacy compliance

**SR-003: Backup & Recovery**

* Daily automated backups with 30-day retention
* Point-in-time recovery capability
* Disaster recovery plan with RTO < 4 hours, RPO < 1 hour

**4.2 Performance Requirements**

**PR-001: Response Time**

* Page load time < 3 seconds for 95% of requests
* API response time < 500ms for 90% of requests
* Video streaming start time < 5 seconds

**PR-002: Scalability**

* Support 5,000 concurrent active students
* Handle 10,000 daily active users
* Scale to 50,000+ total registered users

**PR-003: Availability**

* 99.9% uptime (less than 8.7 hours downtime per year)
* Scheduled maintenance windows (max 4 hours per month)
* Load balancing and auto-scaling

**4.3 Usability Requirements**

**UR-001: User Interface**

* Responsive design for desktop, tablet, mobile
* Accessibility compliance (WCAG 2.1 Level AA)
* Multi-language support (English primary, Hindi, Spanish future)
* Intuitive navigation with max 3 clicks to any feature

**UR-002: User Experience**

* Onboarding tutorial for new students
* Contextual help and tooltips
* Video tutorials for complex features
* 24/7 customer support (chat, email, phone)

**4.4 Integration Requirements**

**IR-001: Third-Party Integrations**

* Payment gateways (Stripe, PayPal, Razorpay)
* Video conferencing (Zoom, Google Meet)
* Email service (SendGrid, AWS SES)
* SMS notifications (Twilio)
* Analytics (Google Analytics, Mixpanel)
* Cloud storage (AWS S3, Google Cloud Storage)

**IR-002: API Requirements**

* RESTful API for external integrations
* API documentation (OpenAPI/Swagger)
* API rate limiting and authentication (OAuth 2.0)
* Webhook support for real-time events

**5. USER ROLES & PERMISSIONS**

| **Role** | **Permissions** |
| --- | --- |
| **Super Admin** | Full system access, configuration, user management |
| **Administrator** | Curriculum management, enrollment, reports, no system config |
| **Lead Faculty** | Content creation, grading, mentorship, analytics |
| **Faculty/Mentor** | Teaching, grading assigned students, mentorship sessions |
| **Student** | Access enrolled content, submit assignments, assessments, forum participation |
| **Guest** | Browse course information, registration only |

**6. IMPLEMENTATION PHASES**

**Phase 1: Core Foundation (Months 1-3)**

* User authentication and authorization
* Student registration and profile management
* Curriculum structure setup (CUR module)
* Basic admin dashboard

**Phase 2: Learning & Assessment (Months 4-6)**

* Learning resources module (RES)
* Assessment management (ASM)
* Student progress tracking
* Faculty assignment

**Phase 3: Communication & Mentorship (Months 7-9)**

* Live session integration
* Discussion forums
* Mentorship module (FAC)
* Messaging system

**Phase 4: Financial & Career (Months 10-12)**

* Payment processing (PAY)
* Invoice generation
* Career support module (CAR)
* Professional profiles

**Phase 5: Quality & Optimization (Months 13-15)**

* Quality assurance module (QUA)
* Advanced analytics and reporting
* Mobile app development
* Performance optimization

**Phase 6: Launch & Scale (Month 16+)**

* Beta testing with pilot cohort
* Phased rollout to full audience
* Continuous improvement based on feedback
* Scale infrastructure

**7. SUCCESS METRICS**

| **Metric** | **Target** | **Measurement** |
| --- | --- | --- |
| Student Enrollment | 1,000 students in Year 1 | Monthly enrollment tracking |
| Course Completion Rate | > 85% | Completion rate per level |
| Student Satisfaction | > 4.5/5.0 | Post-course surveys |
| Assessment Pass Rate | > 80% | First-attempt pass rate |
| Platform Uptime | > 99.9% | System monitoring |
| Payment Success Rate | > 95% | Transaction success rate |
| Faculty Retention | > 90% | Annual retention rate |
| Employment Rate | > 90% within 6 months | Graduate tracking |

**8. RISKS & MITIGATION**

| **Risk** | **Impact** | **Mitigation Strategy** |
| --- | --- | --- |
| Low initial enrollment | High | Aggressive marketing, free trial periods |
| Faculty shortage | Medium | Early recruitment, attractive compensation |
| Technical issues during live sessions | High | Redundant systems, backup video platforms |
| Payment gateway failures | High | Multiple payment gateway integrations |
| Content quality concerns | Medium | Rigorous content review process, expert panel |
| Security breaches | High | Regular audits, penetration testing, insurance |
| Poor user adoption | Medium | User training, onboarding support, UX improvements |

**9. ASSUMPTIONS & DEPENDENCIES**

**Assumptions**

* Students have basic computer literacy and internet access
* Faculty can dedicate 20-30 hours per week
* SOS Astro platform API is stable and available
* Market demand for Vedic astrology education exists

**Dependencies**

* SOS Astro platform integration readiness
* Third-party service availability (payment, video, email)
* Faculty recruitment and onboarding completion
* Curriculum content creation on schedule

**10. APPENDICES**

**10.1 Database Schema Summary**

* **10 Module Categories:** CUR, STU, ASM, FAC, RES, PAY, COM, CAR, PLT, QUA
* **40+ Database Tables** with proper normalization (3NF)
* **Relational Integrity** maintained via foreign keys
* **Scalable Design** supporting growth to 50,000+ users

**10.2 Technology Stack Recommendations**

* **Backend:** Node.js/Python with Express/Django
* **Database:** PostgreSQL (primary), Redis (caching)
* **Frontend:** React.js/Vue.js with responsive design
* **Mobile:** React Native or Flutter
* **Cloud:** AWS/Google Cloud/Azure
* **Video:** AWS MediaConvert, Vimeo, or Wistia
* **Payments:** Stripe, PayPal, Razorpay

**10.3 Compliance Requirements**

* GDPR (for EU students)
* PCI DSS (for payment processing)
* WCAG 2.1 Level AA (accessibility)
* ISO 27001 (information security)

**DOCUMENT APPROVAL**

| **Role** | **Name** | **Signature** | **Date** |
| --- | --- | --- | --- |
| Project Sponsor |  |  |  |
| Product Owner |  |  |  |
| Technical Lead |  |  |  |
| Business Analyst |  |  |  |

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