Phase 1: Project Planning and Detailed Design (October 1 - October 15)

Sub-phase 1.1: Project Planning

* Finalizing project scope and objectives:
  + Importance: Establishing a clear scope and objectives to guide the entire project towards the desired outcome.
  + Action Item: Documenting the project scope, objectives, and getting stakeholders' approval.
* Allocating resources and setting up a timeline for each phase:
  + Importance: Ensuring that adequate resources and time are allocated for every phase to meet the project deadlines.
  + Action Item: Creating a detailed project schedule, assigning resources, and setting deadlines for each phase.
* Identifying risks and mitigation strategies:
  + Importance: Anticipating potential issues and preparing solutions in advance to prevent project delays.
  + Action Item: Conducting risk assessment, documenting identified risks and developing mitigation strategies.

Sub-phase 1.2: Detailed Design

* Designing database schema, RESTful APIs, and user interfaces:
  + Importance: Laying the technical foundation for system development.
  + Action Item: Creating designs for database schema, APIs, and UI, and getting them reviewed by technical leads.
* Finalizing the system architecture:
  + Importance: Establishing a robust architecture to ensure system scalability, reliability, and performance.
  + Action Item: Documenting system architecture and getting approval from architecture review board.
* Preparing a technical specification document:
  + Importance: Providing a comprehensive reference for developers to follow during the development phase.
  + Action Item: Compiling all technical specifications into a document and sharing it with the development team.

Phase 2: Development (October 16 - November 25)

Sub-phase 2.1: Backend Development

* Setting up the server, databases, and APIs:
  + Importance: Creating a stable backend environment for development.
  + Action Item: Configuring servers, setting up databases, and implementing APIs as per design.
* Implementing the business logic for user registration, application submission, course management, etc.:
  + Importance: Building the core functionalities of the system as per requirements.
  + Action Item: Coding business logic, validating functionality against requirements, and reviewing code for quality assurance.
* Developing the automated notification system:
  + Importance: Keeping users informed about significant events within the system.
  + Action Item: Designing, developing, and testing the notification system to ensure reliable delivery of notifications.

Sub-phase 2.2: Frontend Development

* Designing and developing user interfaces:
  + Importance: Creating intuitive and user-friendly interfaces.
  + Action Item: Building UI as per design, ensuring responsiveness, and getting user feedback for improvements.
* Implementing client-side logic:
  + Importance: Ensuring smooth user interactions and real-time updates.
  + Action Item: Writing client-side scripts, validating input, and optimizing performance.
* Ensuring usability and accessibility standards:
  + Importance: Making the system accessible to all users, including those with disabilities.
  + Action Item: Conducting usability and accessibility testing, and making necessary adjustments.

Sub-phase 2.3: Integration

* Integrating frontend with backend services:
  + Importance: Ensuring seamless interaction between user interfaces and backend services.
  + Action Item: Integrating APIs, testing data flow, and ensuring error-free communication.
* Implementing necessary authentication and authorization mechanisms:
  + Importance: Protecting system resources and data through proper access control.
  + Action Item: Setting up authentication and authorization protocols, testing for security vulnerabilities.

Phase 3: Testing (November 26 - December 1)

Sub-phase 3.1: Unit Testing

* Testing individual components to ensure they work as expected:
  + Importance: Verifying the correctness of each software component.
  + Action Item: Writing and executing unit tests, identifying and fixing bugs.

Sub-phase 3.2: Integration Testing

* Ensuring that the integrated components work together as expected:
  + Importance: Validating the interaction between different system components.
  + Action Item: Designing and conducting integration tests, identifying and rectifying integration issues.

Sub-phase 3.3: User Acceptance Testing (UAT)

* Conducting UAT to ensure that the system meets the requirements and expectations of the end-users:
  + Importance: Gaining user approval that the system is ready for production.
  + Action Item: Preparing UAT environment, executing UAT, collecting feedback, and making necessary adjustments.

Phase 4: Deployment (December 2 - December 3)

Sub-phase 4.1: Pre-Deployment

* Setting up the production environment:
  + Importance: Preparing a stable environment for live deployment.
  + Action Item: Configuring the production server, setting up databases, and ensuring all necessary systems are operational.
* Performing a final review of the system:
  + Importance: Ensuring the system is ready for live usage.
  + Action Item: Conducting a final review, checking for any pending issues, and obtaining deployment approval.

Sub-phase 4.2: Deployment

* Deploying the system to the production environment:
  + Importance: Transitioning the project to a live environment for user access.
  + Action Item: Executing deployment plan, monitoring system behavior, and ensuring smooth transition.
* Verifying the deployment:
  + Importance: Confirming successful deployment and functionality in the live environment.
  + Action Item: Conducting smoke tests, verifying deployment success, and confirming operational status.

Phase 5: Post-Deployment and Support (December 4 - December 7)

Sub-phase 5.1: Post-Deployment Monitoring

* Monitoring system performance:
  + Importance: Ensuring the system operates as expected in the live environment.
  + Action Item: Setting up monitoring tools, analyzing system performance, and making necessary optimizations.
* Ensuring data integrity and system security:
  + Importance: Protecting data and ensuring system resilience against threats.
  + Action Item: Conducting security audits, monitoring data integrity, and implementing necessary security measures.

Sub-phase 5.2: User Support

* Providing user support and training:
  + Importance: Assisting users in utilizing the system effectively.
  + Action Item: Setting up a helpdesk, providing training sessions, and creating user guides.
* Addressing any post-deployment issues or bugs:
  + Importance: Ensuring a bug-free and smooth user experience post-deployment.
  + Action Item: Collecting user feedback, identifying issues, and providing timely fixes.

Phase 6: Documentation and Project Closure (December 8 - December 9)

Sub-phase 6.1: Documentation

* Finalizing all project documentation:
  + Importance: Providing comprehensive information for future reference and maintenance.
  + Action Item: Updating all project documentation, including technical and user documentation.
* Ensuring that all technical and user documentation is complete and up-to-date:
  + Importance: Leaving a reliable reference for future project teams and end-users.
  + Action Item: Reviewing and finalizing documentation, ensuring it reflects the final system state.

Sub-phase 6.2: Project Closure

* Conducting a project review:
  + Importance: Evaluating the project to understand its effectiveness and areas of improvement.
  + Action Item: Conducting a project review meeting, analyzing performance metrics, and collecting feedback.
* Evaluating the project process and outcome:
  + Importance: Understanding the project's strengths and weaknesses for future improvement.
  + Action Item: Analyzing project processes, identifying what worked well and what didn't, and documenting findings.
* Gathering feedback for future projects:
  + Importance: Learning from the project to improve future project execution.
  + Action Item: Conducting surveys, gathering feedback from stakeholders, and preparing a lessons learned document.

Phase 7: Buffer (December 10 - December 14)

Sub-phase 7.1: Additional Testing and Bug Fixing

* Conducting additional tests if necessary:
  + Importance: Ensuring all aspects of the system are thoroughly tested and ready for use.
  + Action Item: Identifying areas that require additional testing, conducting tests, and addressing any discovered issues.
* Fixing any newly discovered bugs:
  + Importance: Delivering a bug-free system to the users.
  + Action Item: Documenting and fixing any bugs discovered, ensuring system stability.

Sub-phase 7.2: Final Review

* Conducting a final review of the system:
  + Importance: Ensuring that all project goals have been met and the system is ready for use.
  + Action Item: Conducting a comprehensive review, making any necessary adjustments, and obtaining final approval for project closure.