## ****Course Registration – Value Stream Mapping (VSM) Analysis****

### 🎯 Objective

This document presents a Value Stream Mapping (VSM) analysis of the course registration process at a community college.  
The goals of this analysis are to:

* Improve student satisfaction
* Reduce the number of helpdesk support tickets
* Shorten the course registration cycle from approximately 3 days to under 1 day

### 🔍 1. Current-State Process Overview

#### Process Flow (Descriptive Format):

1. Student logs into the online portal
2. Searches for available courses
3. Manually checks course prerequisites
4. Selects and submits desired courses
5. System checks for schedule conflicts or errors
6. Staff manually reviews and approves course selection
7. System activates payment interface
8. System sends confirmation email

#### Process Timing & Actors:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Step | Description | Actor | Time Estimate | Type | Notes |
| 1 | Log into portal | Student | ~5 minutes | NNVA | Potential login delays |
| 2 | Search for courses | Student | 20–30 minutes | NNVA | Poor search/filter UX |
| 3 | Check prerequisites manually | Student | 30–60 minutes | NNVA | Repetitive and error-prone |
| 4 | Submit selected courses | Student | 10 minutes | VA |  |
| 5 | Conflict/error check | System | 2 minutes | VA |  |
| 6 | Manual approval | Staff | 1–2 days | Waste | Significant bottleneck |
| 7 | Activate payment | System | 2 minutes | VA |  |
| 8 | Send confirmation email | System | 1 minute | VA |  |

**Legend**:

* **VA**: Value-Added
* **NNVA**: Non–Value-Added but Necessary
* **Waste**: Pure waste (e.g., delays, rework, bottlenecks)

### ❗ Key Issues Identified in the Current Process

* High volume of manual tasks (e.g., prerequisite verification, staff approvals)
* User interface challenges during course search extend processing time
* Staff approval creates a major time bottleneck
* Lack of real-time feedback causes frequent back-and-forth with support

### 🌟 2. Future-State Process Proposal

#### Optimized Flow (Descriptive Format):

1. Student logs in via simplified authentication
2. Uses smart search with filters and recommendations
3. System displays prerequisites automatically
4. Student selects courses with real-time feedback
5. System checks for conflicts and capacity
6. System approves course selection using predefined rules
7. System activates payment and confirms registration
8. System sends immediate confirmation and notification

#### Optimized Timing & Automation:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Step | Description | Actor | Time Estimate | Notes |
| 1 | Simplified login | Student | ~2 minutes | Streamlined access |
| 2 | Smart search | Student | ~10 minutes | Improved filters & UX |
| 3 | Auto prerequisite display | System | Instant | Based on course metadata |
| 4 | Guided course selection | Student + System | ~10 minutes | Error prevention through real-time UX |
| 5 | Conflict/capacity check | System | 1 minute | Fully automated |
| 6 | Rule-based approval | System | 1 minute | Eliminates manual intervention |
| 7 | Activate payment | System | 2 minutes | Seamless handoff |
| 8 | Confirm and notify | System | 1 minute | Instant confirmation |

### 📈 Summary of Expected Improvements

|  |  |  |
| --- | --- | --- |
| Metric | Current State | Future State |
| Total registration time | ~3 days | < 1 day |
| Manual interventions | High | Very low |
| Error rate | High | Low |
| Student satisfaction | Low–Medium | High |
| Support requests | Frequent | Greatly reduced |

### 📌 Conclusion

This VSM analysis highlights critical inefficiencies in the current course registration system. By transitioning to an automated, user-friendly, and intelligent process, the college can significantly improve both operational efficiency and user satisfaction.  
These improvements will support scalability, reduce staff workload, and enhance the overall student