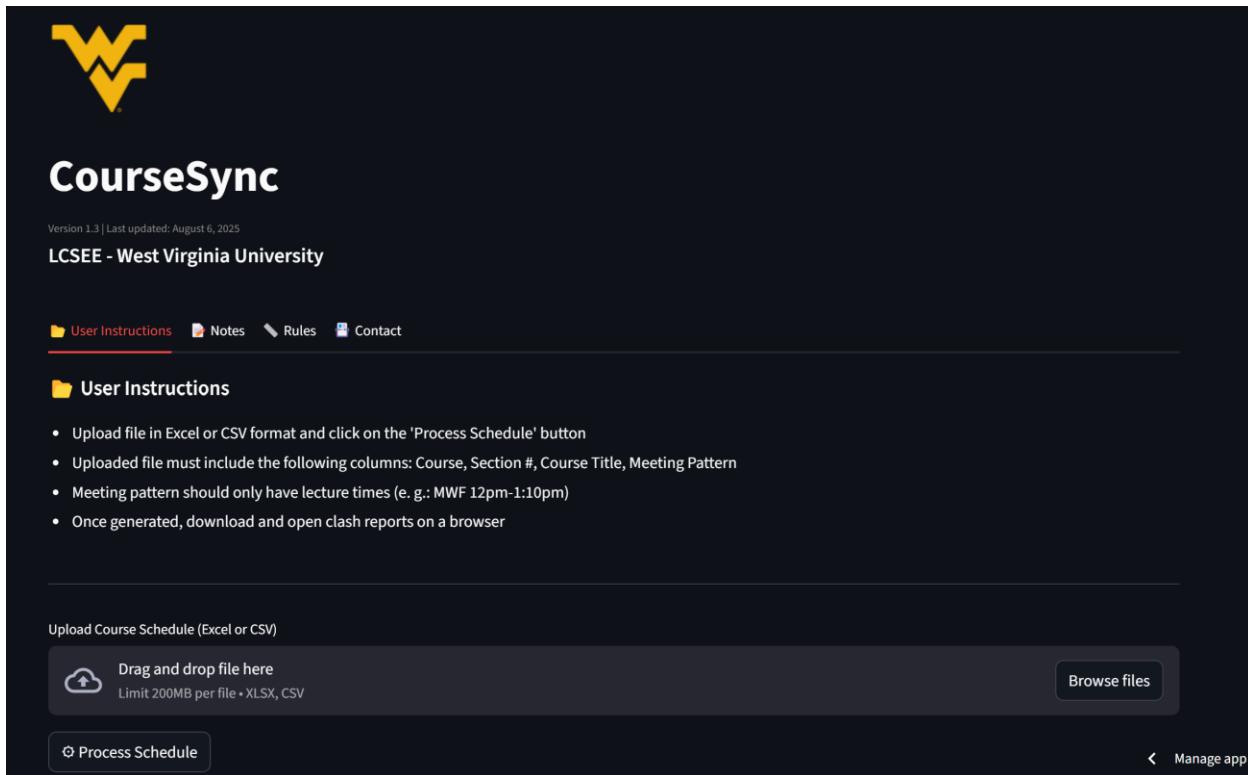


CourseSync App Documentation

Overview

CourseSync is a web application designed to process and analyze large, system-generated course schedules for academic schools. It generates detailed clash reports and calendar views to improve schedule alignment at students' convenience. The goal of CourseSync is to make course scheduling easier and student-centric for academic institutions. Clashes are detected based on specific rules, department interactions, and time constraints. It is currently tailored for use within the Lane Department of Computer Science and Electrical Engineering (LCSEE) at West Virginia University and can be easily extended to other schools or departments.



The screenshot shows the CourseSync application interface. At the top left is the West Virginia University logo. The title "CourseSync" is centered above a navigation bar with links for "User Instructions", "Notes", "Rules", and "Contact". Below the navigation bar, a section titled "User Instructions" contains a bulleted list of steps: "Upload file in Excel or CSV format and click on the 'Process Schedule' button", "Uploaded file must include the following columns: Course, Section #, Course Title, Meeting Pattern", "Meeting pattern should only have lecture times (e.g.: MWF 12pm-1:10pm)", and "Once generated, download and open clash reports on a browser". There is also a note about file size limits (200MB) and supported formats (XLSX, CSV). A central area for uploading files has a "Drag and drop file here" placeholder and a "Browse files" button. At the bottom right is a "Manage app" link.

Considerations:

- Only courses that follow standard meeting patterns (day, time) are included
- Red marked clashes are important
- Green marked clashes are acceptable
- In clash report, free slots shown are 1 hour each, from 9 AM to 9 PM on weekdays
- Wednesday 4-5 PM slots are not shown as available due to faculty meetings

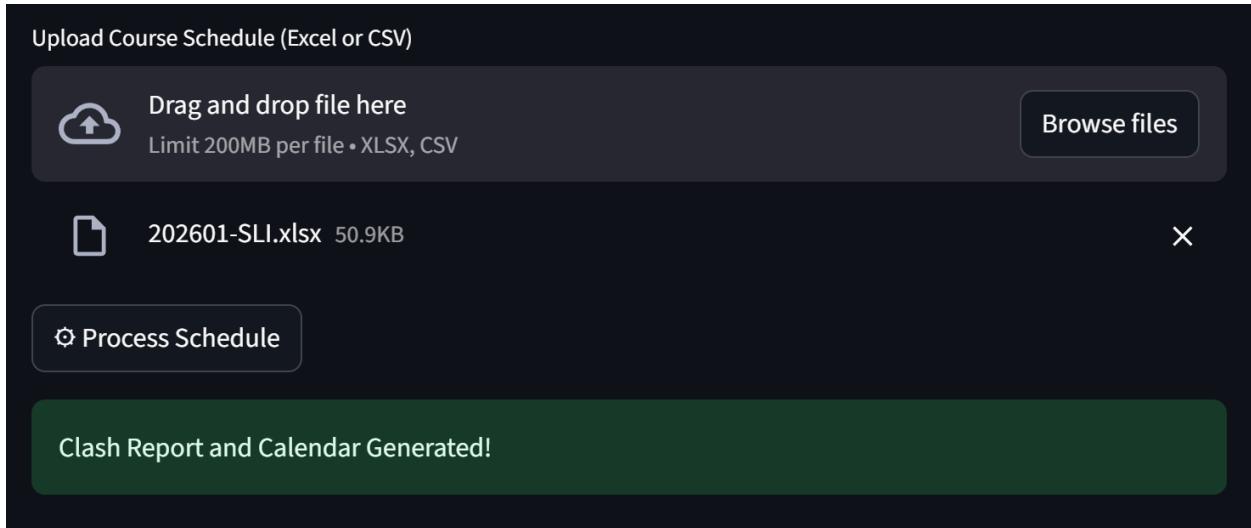
How to Use:

1. Collect system generated data in Excel or CSV Format
2. Data Must Include these columns: Course, Section #, Course Title, Meeting Pattern.
3. Meeting pattern should only have lecture times (e. g.: MWF 12pm-1:10pm)
4. Visit <https://lcsee-wvu.streamlit.app>
5. Read through the tabbed user instructions, notes and rules
6. Upload the Excel or CSV file.
7. Click "⚙️ Process Schedule".
8. Further Actions:
 - Quick insights from clash summary counters
 - View department-wise calendars (tabbed)
 - Download Department wise Clash report (HTML)
 - Download Cross Department Clash report (HTML)
 - Open downloaded reports using a browser

Functional Steps and Reports

1. File Upload & Processing

- Accepts .xlsx, .xls, and .csv formats
- Expects columns: Course, Section #, Course Title, Meeting Pattern
- Automatically parses day-time patterns and extracts department, course code, assign levels, lecture time, and day
- Based on input data, generates **department wise course calendar, clash summary, department wise clash report with available slots calendar, and cross department clash report**



2. Clash Summary Counters: Overview of all important (red) clashes shown for quick insights.

- Department Wise Clashes
- Wednesday 4–5 PM Clashes
- CSEE (480S/481S) with All Department (300–400) Clashes
- CS – EE Clashes (Same Level)
- EE – CPE Clashes (Same Level)
- CS – CPE Clashes (Same Level)

● Clash Summary:

- Department Wise Clashes: 9
- Wednesday 4–5 PM Clashes: 7
- CSEE (480S/481S) with All Department (300–400) Clashes: 169
- CS – EE Clashes (Same Level): 5
- EE – CPE Clashes (Same Level): 0
- CS – CPE Clashes (Same Level): 0

3. Weekly Department-Wise Calendars

- Clean, styled HTML tables in tabbed view per department
- Based on the actual timings from the input file



Department Wise Course Calendar

BIOM CPE CS CSEE CYBE EE

	Monday	Tuesday	Wednesday	Thursday	Friday
12:30 PM–01:45 PM		CYBE 465		CYBE 465	
01:00 PM–01:50 PM	CYBE 460		CYBE 460		CYBE 460
02:00 PM–03:15 PM		CYBE 366		CYBE 366	
03:30 PM–04:45 PM		CYBE 467		CYBE 467	

4. Clash Detection Reports: The app provides two types of clash reports.

I) Department Wise Clash Report

II) Cross Department Clash Report

I) Department Wise Clash Report: It shows all kinds of clashes within a department along with available slot calendars for each department.

Available Slot Calendar

CS Department		Weekly Free Slot Overview (1-Hour Blocks)					
Time		Monday	Tuesday	Wednesday	Thursday	Friday	
09:00 AM–10:00 AM		—	—	—	—	—	
10:00 AM–11:00 AM		—	—	—	—	—	
11:00 AM–12:00 PM		—	—	—	—	—	
12:00 PM–01:00 PM		—	—	—	—	—	
01:00 PM–02:00 PM		—	—	—	—	—	
02:00 PM–03:00 PM		—	—	—	—	—	
03:00 PM–04:00 PM		—	—	—	—	—	
04:00 PM–05:00 PM		—	✓	✗	✓	✓	
05:00 PM–06:00 PM		—	✓	—	—	✓	
06:00 PM–07:00 PM		—	—	—	—	✓	
07:00 PM–08:00 PM		—	—	—	—	✓	
08:00 PM–09:00 PM		✓	—	✓	✓	✓	

Clash Categories:

- Wednesday 4–5 PM Restricted Slot Courses:

Any course scheduled at this time, regardless of level, is flagged, as faculty meetings take place around this time.

- Important/Non-Acceptable Clashes (Red):

Between and Across Junior (300) and Senior (400) level courses within each department, also between Graduate (500-700) level courses. Example: CS 300 - CS 300, EE 300 - EE 400, CPE 500 - CPE 600 etc.

- Acceptable Clashes (Green):

Any clashes involving Freshman (100) and Sophomore (200) courses within each department, also, clashes between courses with two or more-level gaps are considered acceptable. Example: CS 100 - CS 200, EE 100 – EE 300, CPE 200 - CPE 400 etc.

⚠ Wednesday 4:00–5:00 PM Restricted Slot Courses

● 1 Violations

Course	Section	Day	Time
CS 110L	020 (15110)	Wednesday	2pm–4:50pm

Non-Acceptable Clashes

● 4 Violations

Course A	Section A	Course B	Section B	Day(s)	Time
CS 320	002 (14180)	CS 440	001 (13183)	Thursday, Tuesday	2pm–3:15pm
CS 330L	011 (17306)	CS 350	001 (10220)	Thursday	9am–10:50am
CS 430	702 (13283)	CS 330L	011 (17306)	Thursday	8am–9:15am
CS 493A	001 (17920)	CS 450	001 (15122)	Friday, Monday, Wednesday	1pm–1:50pm

Acceptable Clashes

● 21 Accepted Clashes

Course A	Section A	Course B	Section B	Day(s)	Time
CS 110	001 (15118)	CS 210	001 (11130)	Friday, Monday, Wednesday	12pm–12:50pm
CS 110	002 (15119)	CS 330	001 (17304)	Friday, Monday, Wednesday	3pm–3:50pm
CS 110L	010 (15108)	CS 110	002 (15119)	Monday	2pm–4:50pm
CS 110L	010 (15108)	CS 111	001 (15120)	Monday	2pm–4:50pm

II) Cross Department Clash Report: Provides a cross departmental clash report focusing only on important clashes (red).

Department Pairs in Consideration:

- CS vs EE (Same Level)
- EE vs CPE (Same Level)
- CS vs CPE (Same Level)
- CSEE 480S / 481S vs Any Department 300–400 level

Clash Category: Important/Non-Acceptable Clashes (Red):

- Same level clashes across departments. Example: CS 300 - EE 300, CS 400 - CPE 400 etc.
- Clashes between senior level design courses (CSEE 480S, CSEE 481S) with any 300/400 level courses from any department. Example: CSEE 480S - CS 300, CSEE 480S - CSEE 481S, CSEE 481S - EE 400 etc.

CS – EE Same Level Clashes (300–700)

● 5 Violations

Course A	Section A	Course B	Section B	Day(s)	Time
CS 330L	011 (17306)	EE 327	001 (12197)	Thursday	9am–10:50am
CS 350	001 (10220)	EE 327	001 (12197)	Thursday, Tuesday	9:30am–10:45am
CS 440	001 (13183)	EE 463	001 (10211)	Thursday, Tuesday	2pm–3:15pm
CS 472	001 (14184)	EE 493A	002 (17588)	Friday, Monday, Wednesday	11am–11:50am
CS 796	001 (10716)	EE 796	001 (10217)	Monday	5pm–5:50pm

EE – CPE Same Level Clashes (300–700)

No clashes detected for this pair.

CS – CPE Same Level Clashes (300–700)

No clashes detected for this pair.

CSEE (480S/481S) - All Departments Clashes (300-400)

● 169 Violations

Course A	Section A	Course B	Section B	Day(s)	Time
CPE 453	001 (17411)	CSEE 481S	C09 (17319)	Tuesday	3:30pm–4:45pm
CPE 453	001 (17411)	CSEE 480S	C06 (17317)	Tuesday	3:30pm–4:45pm
CPE 453	001 (17411)	CSEE 481S	C05 (15068)	Tuesday	3:30pm–4:45pm
CPE 453	001 (17411)	CSEE 481S	C01 (15228)	Tuesday	3:30pm–4:45pm
CPE 453	001 (17411)	CSEE 480S	C01 (15067)	Tuesday	3:30pm–4:45pm
CPE 453	001 (17411)	CSEE 481S	C09 (17319)	Thursday	3:30pm–4:45pm
CPE 453	001 (17411)	CSEE 480S	C06 (17317)	Thursday	3:30pm–4:45pm
CPE 453	001 (17411)	CSEE 481S	C05 (15068)	Thursday	3:30pm–4:45pm
CPE 453	001 (17411)	CSEE 481S	C01 (15228)	Thursday	3:30pm–4:45pm
CPE 453	001 (17411)	CSEE 480S	C01 (15067)	Thursday	3:30pm–4:45pm
CPE 310I	001 (15102)	CSEE 481S	C09 (17319)	Thursday	3pm–4:50pm

For any queries, reach out to:

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