

Student-University Matching Tool

User Guide

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1 Introduction

This tool helps exchange coordinators automatically match students to universities. It respects both student preferences and university capacity limits, using optimization to find the best possible matching.

2 Getting Started

2.1 Accessing the Application

Go to <https://matchingstudyabroad.utwente.nl/> in your browser. You see the upload interface right away with two file input fields at the top.

3 Step by Step Usage

3.1 Step 1: Prepare Your Files

You need two files: one with university data and one with student applications.

3.1.1 Universities File

This should contain the exchange agreements with partner universities. You need at least these columns:

- **ID:** Unique identifier for each agreement (e.g. 666373)
- **Partner institution:** Name of the university (e.g. Royal Melbourne IoT)
- **Abbr. of study field:** Abbreviation of the study program (e.g. M-IEM)
- **Study field:** Full name of the study program (e.g. (MSc) Industrial Engineering and Management)
- **Agreement type:** Type of exchange agreement (e.g. Exchange-I)
- **Total #:** Total number of available places (e.g. 6)
- **Max # BSc:** Maximum BSc student places (optional) (e.g. 4)
- **Max # MSc:** Maximum MSc student places (optional) (e.g. 3)
- **Nr of agreed spots in 1st sem.:** Spots for semester 1
- **Nr of agreed spots in 2nd sem.:** Spots for semester 2

Optional Faculty Constraint Columns:

- The maximum number of spots/seats for BMS
- The maximum number of spots/seats for EEMCS
- The maximum number of spots/seats for ET
- The maximum number of spots/seats for ITC
- The maximum number of spots/seats for ST
- The maximum number of spots/seats for UCT

3.1.2 Student Applications File

This contains your student applicants and their preference rankings. Required columns:

- **ID of application:** Unique student identifier (e.g. 1234567)
- **Student number:** University student ID (e.g. s1234567)
- **First name:** First name of the student (e.g. Jan)
- **Last name:** Last name of the student (e.g. Jansen)
- **Abbreviation of study field:** Student's program abbreviation (e.g. B-IDE)
- **Study field:** Student's full program name (e.g. (BSc) Industrial Design Engineering)
- **Study level:** "BSc" or "MSc"
- **Semester:** "1st semester" or "2nd semester"
- **Agreement-ID 1st choice, Agreement-ID 2nd choice, ...:** University preferences by agreement ID

Extra columns will be ignored.

3.2 Step 2: Upload Your Files

1. Click "Browse" next to the universities field and pick your universities file
2. Click "Browse" next to the students field and pick your applications file
3. The tool validates both files automatically. You need both before moving forward.

3.3 Step 3: Adjust Preference Weights (Optional)

Once both files load, you see a weights section. Use this to influence how much the algorithm prioritizes each choice position.

3.3.1 How Weights Work

- Lower numbers push the algorithm toward that choice
- Higher numbers discourage it
- Default is 1–6, which naturally favors first choices

3.3.2 Example Adjustments

- To discourage last choices: Increase choice 6 weight to 10 or higher
- To strictly prioritize first two choices: Set to 1, 1, 5, 5, 5, 5. In this case the algorithm is indifferent between preference 1 and 2.

3.4 Step 4: Manual Rules (Optional)

Before running the automatic matching algorithm, you can make manual adjustments.

3.4.1 Assign a Student to a University

1. Type the student's name in the search box
2. Pick them from the dropdown
3. Select a university from their choices
4. Click "Add Assignment"

3.4.2 Forbid a Student-University Pairing

1. Search and select the student
2. Choose a university from their list
3. Click "Forbid" to prevent that match

3.4.3 Managing Assignments

Both manual assignments and forbidden pairs are displayed in tables below the search box. You can remove any assignment or forbidden pair by clicking the remove/delete button in the corresponding table row.

The tool will warn you if a manual assignment violates capacity constraints. If that happens, you will need to adjust the capacity limits or remove this manual assignment.

3.5 Step 5: Run the Matching

1. Scroll down to the green button
2. Click "Run Matching Algorithm"
3. Wait a few seconds for results

3.6 Step 6: Review Results

3.6.1 Results Overview

After the algorithm completes, a summary section displays:

- How many students got each choice (1st, 2nd, etc.)
- Total students matched
- Any unmatched students
- Average preference achieved (1.0 mean all first choices, 6.0 means all sixth choices)

3.6.2 Unmatched Students

If any students are not matched, they are listed. These can be manually assigned if desired. Note that rerunning the algorithm with these manual assignments in place may lead to different overall results. If students have only, for example, 3 preferences, the algorithm considers them as matched to their 4th choice if they remain unmatched. This is to prevent students deliberately submitting fewer preferences to increase their chances of getting a top choice.

3.6.3 Assignments Table

The complete assignment results are displayed in a sortable table showing:

- Student name and ID
- Assigned university
- Which choice position it was

You can sort by any column by clicking the column header.

3.7 Step 7: Download Results

1. Click the blue “Export to CSV” button
2. Your browser downloads the file

The exported CSV contains:

- Application ID
- Student name and number
- Assigned university
- Agreement ID
- Semester
- Choice preference achieved
- Study program
- Study level (BSc/MSc)
- Faculty
- Agreement type