

**CPSC532D:**

**Topics in Artificial Intelligence –  
Stochastic Search Algorithms**

**Holger H. Hoos**

# General information

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**Webpage:** <http://www.cs.ubc.ca/labs/beta/Courses/CPSC532D-02>

**Time:** Tue 13:00-14:30, Thu 13:00-14:30 (conflicts?)

## Resources:

- course webpage,
- box in the CICS SR Reading Room,
- $\beta$ -Lab (<http://www.cs.ubc.ca/labs/beta>),
- new textbook by Hoos and Stützle on SLS (partial drafts)
- Holger's brains – pick it :-)

# **Course Outline**

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## **Part 1: Foundations and Basics**

**Module 1: Introduction**

**Module 2: “Simple” SLS Algorithms**

**Module 3: Hybrid SLS Algorithms**

**Module 4: Population-based SLS Algorithms**

**Module 5: Generalised Local Search Machines**

**Module 6: Empirical Analysis of Stochastic Search Algorithms**

**Module 7: Search Space Analysis**

## **Part 2: Applications**

**Module 8: SAT and Constraint Satisfaction**

**Module 9: MaxSAT and MaxCSP**

**Module 10: The Travelling Salesperson Problem**

**Module 11: Scheduling Problems**

**Module 12: Other Combinatorial Problems**

# Final Grades

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**Final grades are determined from the following:**

- **homework assignments** (simple problems and questions, hands-on use of tools, literature research; approx. one every 2–3 modules) – ca. 25%
- **discussion** (each student presents a paper in class and leads the discussion on it) – ca. 15%
- **course project** (reports and presentation) – ca. 60%

# **Course Project**

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## **Timetable:**

- 02/04** students submit short project proposals
- 03/01** students submit short progress report
- 03/29** students submit final report

**First or second week of April:** project presentations