# CPSC 281 — Data Structures I — Winter 2015

*course outline*

see also `http://web.unbc.ca/~casper/`
`http://learn.unbc.ca/`

**Instructor:** Dr David Casperson

**Telephone:** 960-6672

**e-mail:** `David.Casperson@unbc.ca`

**web addresses:**
`http://web.unbc.ca/~casper`,
`http://web.unbc.ca/~casper/Semesters/`
`2015/281.php`

**Office:** T & L 10-2080

**Office Hours:**
M            10:00–12:00
*or by arrangement.*

**Rooms:** Lectures are in 5-157; there are no scheduled tutorials or labs (but you can use the machines in 8-456/7 when not in use for scheduled CPSC 101 labs).

**Text:** *Data Structures and Algorithms in Java* by by Michael T. Goodrich and Roberto Tamassia. 5<sup>th</sup> edition. ISBN: : 978-0-470-38326-1.

**Grading and Dates:**

| | | | |
|---|---|---|---|
| Assignments | : | 20% | |
| First class | : | | Mon, Jan 05 |
| Exam 1 | : | 20% | Mon, Feb 02 |
| Family Day | : | | Mon, Feb 09 |
| Last drop day | : | | Tue, Feb 17 |
| Winter Break | : | | Feb 16–27 |
| Exam 2 | : | 20% | Mon, Mar 23 |
| Easter Monday | : | | Mon, Apr 06 |
| Course Evaluation | : | | Wed, Apr 08 |
| (Final) Exam 3 | : | 40% | Apr 20–30 |

**Topics from:** (*not necessarily in the order listed*) Program performance, Abstract data types and data representation, arrays, lists, stacks queues, and deques, skip lists and hashing, trees (B-trees, binary trees, search trees, balanced trees (AVL, splay, red-black)), tree traversals, priority queues and heaps, graphs, graph algorithms (Dijkstra's algorithm; Prim's, Kruskal's, andSolin's algorithms). Implementation of various data structuresusing object-oriented programming language.

The above description is condensed from the academic calendar. More generally, a student who successfully completes CPSC 281 will be able to select appropriate data structures from standard libraries and/or implement specific-purpose data structures as part of their general programming skills.

### General:

- Assignments are late if they are not received at the *beginning* of the lecture at which they are due. Further details on late policy can be found at `http://web.unbc.ca/~casper/Semesters/2015W/281-policies.php#late` .

- There will be between 4 and 8 programming assignments, the assignments being given out approximately bi-weekly.

- Discussion of assignment topic is encouraged but all assignments must be done independently. Copied assignments are considered academic dishonesty. Responses to academic dishonesty include awarding a *mark of* $^{-}100\%$ on the assignment in question and *written notification* of the Office of the Registrar.