

## MATHEMATICS 344: DISCRETE MATHEMATICS (2021)

- **Summary**

This Information Sheet supersedes previous versions which were incomplete due to Corona uncertainties.

We are for the most part concerned with the part of Discrete Mathematics that could be coined Enumeration Techniques. In particular these are our Section Headings:

- I. Functions between finite sets
- II. Binomial coefficients
- III. Occupancy problems
- IV. Multinomial coefficients
- V. The principle of inclusion-exclusion
- VI. Boolean functions
- VII. Recurrence relations

- **Module information**

- 21539 344(16) Mathematics 344
- Third year, second semester, in the *Programs in the Mathematical Sciences*
- Prerequisite modules: A pass in Mathematics 214, 244

- **Lecturer:** Prof. M. Wild (email: mwild@sun.ac.za)

- **Course material:** No prescribed text book; Lecture notes will be provided.

- **Course presentation:** Due to the ongoing Covid-19 crisis this course will be delivered online via sunLearn. But in the second quarter there will be weekly face-to-face sessions. Students must work through the (hand written) *Lecture Notes* and solve the accompanying tutorials. The solved tutorials are not handed in but there will be tutorial-tests approximately one week after the tutorials are made available. Questions related to the course material must be asked in the sunLearn Forum.

- **Assessment** The *preliminary final mark* (PFM) is calculated from the tutorial-tests (TT) and the two class tests A1 and A2 as follows:

$$PFM = (0.2)TT + (0.3)A1 + (0.5)A2$$

For students who have excuses not to attend A1 (e.g. due to sickness) the preliminary final mark is calculated as

$$PFM = (0.2)TT + (0.8)A2.$$

In both cases, if  $PFM \geq 50$  or  $PFM < 40$  then the *final mark*  $FM$  is  $FM = PFM$ . If  $40 \leq PFM < 50$ , then the A3 must be written and

$$FM = (0.2)TT + (0.3)A1 + (0.5)A3.$$

This formula also holds for students who decide not to write A2 but only A3. All **exams** take place face-to-face, i.e. on September 28 (A1, 1.5 hours), on November 9 (A2, 2.5 hours), and December 4 (A3, 2.5 hours).