

Astronomy/Origins 2B03: THE BIG QUESTIONS

September 2019

Astronomy 2B03 is available for credit to any undergraduate at McMaster enrolled at Level II or higher, regardless of home faculty or program.

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Textbook: There is no textbook or Coursepack formally used or assigned to this course, but we will be using i-clickers. If you do not already have one, i-clickers are available for purchase at the bookstore. **Please register your i-clicker as soon as possible using your McMaster ID (ie your email prefix not your student number!).**

In this course we will be using *Avenue to Learn*. Students should be aware that, when they access the electronic components of this course, private information such as first and last names, user names for the McMaster e-mail accounts, and program affiliation may become apparent to all other students in the same course. The available information is dependent on the technology used. Continuation in this course will be deemed consent to this disclosure. If you have any questions or concerns about such disclosure please discuss this with the course instructor.

Please log on (<http://avenue.mcmaster.ca/>) as soon as possible.

The *Avenue to Learn* site has a variety of reading resources and links for background reading specifically useful for this course. However, it is important (even more than for a normal course) to be at lectures and make your own notes. You are responsible for all material covered in class.

The *Avenue to Learn site* will be used throughout the term for posting schedules, information, links to other Websites for further reading and detailed information for the tutorials and projects.

Tutorial periods: Once per week, starting September 9th. Active participation in weekly scheduled tutorials is a required part of the coursework.

Marking scheme: (see the detailed marking scheme on Avenue to Learn site for complete descriptions)

35%	Final exam
15%	One mid-term test
4%	Clicker Questions (participating and answering correctly)
22%	Term Project (Sign-up: 1; Presentation: 15; Proposal: 2; Handout: 4)
14%	Active participation in tutorials (Providing peer feedback on presentations. Participating in discussions. This is not simply an attendance mark!)
10%	Individual journal

Clickers:

- Clicker quizzes are short conceptual questions based on what we've been discussing in class and will be given regularly in class. Marks are assigned for attempting the question as well as for getting the correct answer (only for questions which have a correct answer and are a review of previously seen material). **All students are responsible to have an i-clicker or smart device with iClicker Reef polling by the second class. You are forbidden to enter answers on another student's i-clicker.**
- Your i-clicker can be registered through the web page: : <https://app.reef-education.com/#/login>
- Please see the detailed instructions on Avenue to Learn!

Register with your MAC ID (email prefix, not student number)!

Academic Accommodations:

Students with disabilities who require academic accommodation must contact [Student Accessibility Services \(SAS\)](#) to make arrangements with a Program Coordinator. [Student Accessibility Services](#) can be contacted by phone 905-525-9140 ext. 28652 or e-mail sas@mcmaster.ca. For further information, consult McMaster University's [Academic Accommodation of Students with Disabilities](#) policy.

Absences/MSAF:

In the event of an absence for medical or other reasons, students should review and follow the Academic Regulation in the Undergraduate Calendar "Requests for Relief for Missed Academic Term Work". When using the MSAF, report your absence to lparker@mcmaster.ca (**not your TA!**). Please note that the MSAF may not be used for term work worth 30% or more, nor can it be used for the final examination.

If you miss the midterm, and report this using the MSAF, the marks from the midterm will be moved to the final exam. **There is no make-up midterm exam.** If you miss a tutorial (not including the tutorial in which you are presenting your project), and report this using the MSAF, the marks from the other tutorials will be re-weighted to account for your excused absence. For any other absence reported using the MSAF you must then contact Dr. Parker immediately (normally within 2 working days) by email at lparker@mcmaster.ca to learn what relief may be granted for the work you have missed, and relevant details such as revised deadlines. You must contact the instructor and not your TA about any absences.

Academic Accommodation for Religious, Indigenous or Spiritual Observance (RISO):

Students requiring academic accommodation based on religious, indigenous or spiritual observances should follow the procedures set out in the RISO policy. Students requiring a RISO accommodation should submit their request to their Faculty Office normally within 10 working days of the beginning of term in which they anticipate a need for accommodation or to the Registrar's Office prior to their examinations. Students should also contact their instructors as soon as possible to make alternative arrangements for classes, assignments, and tests.

Extreme Circumstances:

The University reserves the right to change the dates and deadlines for any or all courses in extreme circumstances (e.g., severe weather, labour disruptions, etc.). Changes will be communicated through regular McMaster communication channels, such as McMaster Daily News, A2L and/or McMaster email.

OUTLINE OF CURRICULUM

The Big Questions

Setting the Stage:

- What's out there? Things in the universe; planets, stars, galaxies

The Nature of Space and Time

- The nature of space and time on small and large scales
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Origins

- The evolving universe: how things change with time, looking at the universe from the Big Bang until today
- Formation of stars and planets. Planets around other stars, looking for signs of life
- Formation of the elements

End Games

- The multiverse: inflationary epoch, string theory
- The far future of the universe as we predict it today.

We may also have *special guest lectures* during the term

Statement on Academic Integrity

You are expected to exhibit honesty and use ethical behaviour in all aspects of the learning process. Academic credentials you earn are rooted in principles of honesty and academic integrity.

Academic dishonesty is to knowingly act or fail to act in a way that results or could result in unearned academic credit or advantage. This behaviour can result in serious consequences, e.g. the grade of zero on an assignment, loss of credit with a notation on the transcript (notation reads: "Grade of F assigned for academic dishonesty"), and/or suspension or expulsion from the university.

It is your responsibility to understand what constitutes academic dishonesty. For information on the various types of academic dishonesty please refer to the [Academic Integrity Policy](http://www.mcmaster.ca/academicintegrity), located at www.mcmaster.ca/academicintegrity.

The following illustrates only three forms of academic dishonesty:

- Plagiarism, e.g. the submission of work that is not one's own or for which other credit has been obtained.
- Improper collaboration in group work.
- Copying or using unauthorized aids in tests and examinations.

In this course we will be using a web-based service (Turnitin.com) to reveal authenticity and ownership of student submitted work. Students will be expected to submit their work electronically on Avenue to Learn (A2L) so it can be checked for academic dishonesty.

Students who do not wish to submit their work through A2L must still submit an electronic and/or hardcopy to the instructor. No penalty will be assigned to a student who does not submit work to A2L. All submitted work is subject to normal verification that standards of academic integrity have been upheld (e.g., on-line search, other software, etc.). To see the Turnitin.com Policy, please go to www.mcmaster.ca/academicintegrity.