

Course outline

MATLS 3F03 "High temperature materials production"

2024-2025 Academic year

Instructor

Dmitri Malakhov, malakhov@mcmaster.ca, JHE 357B. There will be no official office hours, but students' Outlook invitations will never remain unacted upon.

Teaching assistant

To protect TA's privacy, neither name nor e-mail address is given in this easily accessible document. The name and contact data will be e-mailed to every student. A student is not supposed to materialize in TA's office without warning; send an Outlook invitation for scheduling a meeting.

Schedule of lectures and tutorials

Log into [Mosaic](#) and become aware of days of week, times and locations.

Calendar description

The description can be found in the [Undergraduate Calendar 2024-2025](#)

Mark breakdown

Component	Maximal contribution to a final mark
Tests	48
Examination	22
Written report	18
Oral presentation	12
Bonus quizzes	12

Tests dates

Test 1	Test 2	Test 3	Test 4	Test 5	Test 6
January 13	January 29	February 13	March 6	March 19	March 31

Research project

Students will be divided in groups comprising 3-4 individuals. Each team will carry out a comparative analysis of an old, established process and a new, arguably better process of producing a material, which will be chosen by each group at will. Non-compulsory discussions with the instructor are encouraged. Research outcomes will be presented during oral talks (15 min,

10 min for Q&A) on April 2, 3 and 7, and summarized in a written report, which must be submitted not later than on the 17th of April.

Lecture themes

Theoretical foundations	Production of Cu
Mass balance	Production of Ni
Energy balance	Production of Si
Combustion	Ferroalloys
Ironmaking	Production of Mg
Steelmaking	Production of Al
Sintering	

Course Website

The course [Website](#) ought to be considered as an integral part of this course outline.

Optional reading

Curious individuals can find food for their brains by visiting [In-depth learning](#). Below, in a list of recommended books and their locations in the Thode Library:

- 1974 Rosenquist 'Principles of extractive metallurgy' TN 665 .R698
- 1979 Peacey, Davenport 'The iron blast furnace theory and practice' TN 713 .P42
- 1991 Evans, DeJonghe 'The production of inorganic materials' TN 665 .E94
- 1993 Deo, Boom 'Fundamentals of steelmaking metallurgy' TN 730 .D46
- 1994 Biswas, Davenport 'Extractive metallurgy of copper' TN 780 .B57
- 1997 Barsoum 'Fundamentals of ceramics' TP 807 .B37

Useful links¹

- Academic Accommodation for Religious, Indigenous and Spiritual Observances (<https://secretariat.mcmaster.ca/university-policies-procedures-guidelines/acad-accom-for-religious-indigenous-and-spiritual-observances-riso/acad-accom-for-religious-indigenous-and-spiritual-observances-riso-html/>)
- Academic Accommodation of Students with Disabilities (<https://secretariat.mcmaster.ca/university-policies-procedures-guidelines/academic-accommodation-swd/academic-accommodation-swd-html/>)
- Academic Integrity Policy (<https://secretariat.mcmaster.ca/app/uploads/Academic-Integrity-Policy-1-1.pdf>)
- McMaster Student Absence Form Policy (<https://secretariat.mcmaster.ca/app/uploads/MSAF-Policy-McMaster-Student-Absence-Form-Policy.pdf>)

¹ Received from Professor Oleg Rubel, Associate Chair responsible for undergraduate studies

- Undergraduate Course Management Policy (<https://secretariat.mcmaster.ca/university-policies-procedures-guidelines/undergraduate-course-management-policy/undergraduate-course-management-policy-html/>)
- Undergraduate Examinations Policy (<https://secretariat.mcmaster.ca/app/uploads/2019/06/Undergraduate-Examinations-Policy.pdf>)

Information, which, in compliance with McMaster rules and regulations, must be included in each and every course outline

Appendix B: Course Outline – Approved Advisory Statements

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. It is your responsibility to understand what constitutes academic dishonesty.

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. For information on the various types of academic dishonesty please refer to the [Academic Integrity Policy](#).

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.

Authenticity / Plagiarism Detection

Some courses may use a web-based service (Turnitin.com) to reveal authenticity and ownership of student submitted work. For courses using such software, students will be expected to submit their work electronically either directly to Turnitin.com or via an online learning platform (e.g. Avenue to Learn, etc.) using plagiarism detection (a service supported by Turnitin.com) so it can be checked for academic dishonesty.

Students who do not wish their work to be submitted through the plagiarism detection software must inform the Instructor before the assignment is due. No penalty will be assigned to a student who does not submit work to the plagiarism detection software. All submitted work is subject to normal verification that standards of academic integrity have been upheld (e.g., on-line search, other software, etc.). For more details about McMaster’s use of Turnitin.com please go to www.mcmaster.ca/academicintegrity.

Courses with an On-Line Element

Some courses may use on-line elements (e.g. e-mail, Avenue to Learn, LearnLink, web pages, capa, Moodle, ThinkingCap, etc.). Students should be aware that, when they access the electronic components of a course using these elements, 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 a course that uses on-line elements will be deemed consent to this disclosure. If you have any questions or concerns about such disclosure please discuss this with the course instructor.

Online Proctoring

Some courses may use online proctoring software for tests and exams. This software may require students to turn on their video camera, present identification, monitor and record their computer activities, and/or lock/restrict their browser or other applications/software during tests or exams. This software may be required to be installed before the test/exam begins.

Conduct Expectations

As a McMaster student, you have the right to experience, and the responsibility to demonstrate, respectful and dignified interactions within all of our living, learning and working communities. These expectations are described in the Code of Student Rights & Responsibilities (the “Code”). All students share the responsibility of maintaining a positive environment for the academic and personal growth of all McMaster community members, whether in person or online.

It is essential that students be mindful of their interactions online, as the Code remains in effect in virtual learning environments. The Code applies to any interactions that adversely affect, disrupt, or interfere with reasonable participation in University activities. Student disruptions or behaviours that interfere with university functions on online platforms (e.g. use of Avenue 2 Learn, WebEx or Zoom for delivery), will be taken very seriously and will be investigated. Outcomes may include restriction or removal of the involved students’ access to these platforms.

Academic Accommodation of Students With Disabilities

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

Requests For Relief For Missed Academic Term Work

In the event of an absence for medical or other reasons, students should review and follow the [McMaster Student Absence Form Policy \(MSAF Policy\)](#).

Academic Accommodation For Religious, Indigenous Or Spiritual Observances (RISO)

Students requiring academic accommodation based on religious, indigenous or spiritual observances should follow the procedures set out in the [RISO policy](#). Students 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.

Copyright and Recording

Students are advised that lectures, demonstrations, performances, and any other course material provided by an instructor include copyright protected works. The *Copyright Act* and copyright law protect every original literary, dramatic, musical and artistic work, including lectures by University instructors.

The recording of lectures, tutorials, or other methods of instruction may occur during a course. Recording may be done by either the instructor for the purpose of authorized distribution, or by a student for the purpose of personal study. Students should be aware that their voice and/or image may be recorded by others during the class. Please speak with the instructor if this is a concern for you.

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, Avenue to Learn and/or by McMaster email.