

Materials Science, Any Emphasis (250-00X)

The following is a hypothetical schedule, based on the 2018-2019 catalog. It assumes no transferred credits, no requirements waived by placement tests, and no courses taken in the summer. UW-Eau Claire cannot guarantee all courses will be offered as shown, but will provide a range of courses that will enable prepared students to fulfill their requirements in a timely period. This is just a guide. Please consult your advisor, the catalog, and your degree audit for specific requirements.

FIRST YEAR

FIRST SEMESTER			SECOND SEMESTER		
Subj/Area/Course	Title	Crs	Subj/Area/Course	Title	Crs
CHEM 105/106	General Chemistry I (K1)	5	CHEM 109	General Chemistry II	4
WRIT 114/116	Blugold Seminar (S1)	5	MSE 221	Living in a Materials World	3
MATH 112	College Algebra (S2)	4	MATH 114	Calculus I (S2)	4
LE CORE Elective	Humanities (K3)	3	LE CORE Elective	Social Science (K2)	3
TOTAL		16	TOTAL		14

SECOND YEAR

FIRST SEMESTER			SECOND SEMESTER		
Subj/Area/Course	Title	Crs	Subj/Area/Course	Title	Crs
CHEM 325	Organic Chemistry I	4	MSE 334	Soft Materials	4
MATH 215	Calculus II	4	MSE 315	Materials Characterization (S3)	4
PHYS 231	University Physics I (K1)	5	PHYS 232	University Physics II (K1)	5
LE CORE Elective	Communication (S1)	3	LE CORE Elective	Civic, Social, Enviro. Responsibility (R3)	3
TOTAL		16	TOTAL		16

THIRD YEAR

FIRST SEMESTER – Apply for Admission to Major			SECOND SEMESTER		
Subj/Area/Course	Title	Crs	Subj/Area/Course	Title	Crs
MSCI 384	Mat. Sci. Jr. Seminar I	0.5	MSCI 385	Mat. Sci. Jr. Seminar II	0.5
MSE 350	Thermodynamics of Materials	4	MAT. SCI. Elective ^b	MSCI or MSE Electives	2-4
MSE 357	Phase Transformations	3	LE CORE Elective	Integrative Learning (I1)	3
MAT. SCI. Emphasis ^c	Emphasis Course	3-4	LE CORE Elective	Equity, Diversity, Inclusivity (R1 + DD)	3
LE CORE Elective	Equity, Diversity, Inclusivity (R1)	3	LE CORE Elective	Social Science (K2)	3
			General Elective ^a		3
TOTAL		13.5-14.5	TOTAL		14.5-16.5

FOURTH YEAR

FIRST SEMESTER			SECOND SEMESTER		
Subj/Area/Course	Title	Crs	Subj/Area/Course	Title	Crs
MSCI 484	Mat. Sci. Capstone I	1	MSCI 485	Mat. Sci. Capstone II (I1)	2
MAT. SCI. Emphasis ^c	Emphasis Course	3-4	MAT. SCI. Emphasis ^c	Emphasis Course (if needed)	0-3
LE CORE Elective	Fine Arts (K4)	3	MAT. SCI. Elective ^b	MSCI or MSE Electives (if needed)	0-2
LE CORE Elective	Global Learning (R2)	3	LE CORE Elective	Humanities (K3)	3
General Electives ^a		3-5	General Electives ^a		5-7
TOTAL		13-16	TOTAL		12-15

RECOMMENDATIONS FOR OPTIONAL HIGH IMPACT PRACTICES (HIPs)

The University of Wisconsin-Eau Claire encourages all students to participate in High Impact Practices. The following information identifies any specific recommendations that faculty in this major have concerning which HIPs might be most beneficial to students, and any recommendations about when those HIPs best fit into the degree plan. Students should also consult their faculty advisor for information on HIPs.

NOTES

Liberal Education Core (LE Core)

The LE Core comprises 17 learning experiences across 11 learning outcomes. Students must complete a minimum of 36 credits in courses approved for the LE Core.

- K1 – Natural Sciences; two experiences (one lab science experience is required in K1 or K2).
- K2 – Social Sciences; two experiences (one lab science experience is required in K1 or K2).
- K3 – Humanities; two experiences.
- K4 – Fine Arts; one experience.
- S1 – Written and Oral Communication; two experiences (one experience must satisfy the University writing requirement).
- S2 – Mathematics; one experience (must satisfy the University math competency requirement).
- S3 – Creativity; one experience (can be fulfilled in a student's major).
- R1 – Equity, Diversity, and Inclusivity; two experiences (one experience must meet the UW System Design for Diversity (DD) requirement).
- R2 – Global Perspectives; one experience.
- R3 – Civic and Environmental Issues; one experience.
- I1 – Integration; two experiences (one experience can be fulfilled in a student's major).

Additional LE Core Information

- Most LE Core learning experiences are course based, and many courses meet more than one learning outcome (e.g., K3 and R2 or K1 and R3).
- Some learning experiences can also be met outside of a traditional course (e.g., undergraduate research (S3), study abroad (I1)).
- S1 – An English placement score that fulfills the University writing requirement fulfills one S1 experience.
- S1 – A foreign Language placement score that qualifies the student to enter the 102 level satisfies one S1 experience.
- S1, R2 – A foreign language placement score that qualifies the student to enter the 202 level satisfies one experience in S1 and the R2 experience.
- S2 – A math placement score that qualifies the student to enter Math 111, 112, 113 or 114 fulfills the S2 experience.
- S3 – Completion of two credits from any approved music ensemble fulfills the S3 experience.
- I1 – Any semester long study abroad program can fulfill one I1 experience.

Notes

High Impact Practices – students are especially encouraged to explore immersion experiences including faculty/student collaborative research, off-campus summer research, off-campus internship, Study Abroad, Domestic Intercultural Immersion, or other HIP experience.

^a General Electives – should be chosen to ensure that at least 39 credits of upper division courses (300 & 400 level) are included; the major includes at least 27 such credits (counting the Mat. Sci. Elective). Electives can be selected from any discipline as long as the student meets the course prerequisites; courses outside of science and engineering are especially recommended. Study Abroad and Domestic Intercultural Immersion also meet some Electives; please consult an advisor.

^b Mat. Sci Elective – 4 cr are required from courses MSCI or MSE prefix (beyond those required for the core). Choose from MSE 362, 363, 367, 368, 372, 374, 451, 475 or MSCI 395, 399, 493, 494 or 499. Up to 4 credits total from independent study, research, or internship (MSCI 395, 399, 493, 494 or 499 may be applied towards the requirement).

^c Mat Sci Emphasis – For any emphasis, up to 2 credits total from MSCI 395, 399, 493, 494, or 499 may be applied towards the requirement.

Physics of Materials Emphasis (Code 250-001)

Four credits from MSE/Phys 374 plus four credits chosen from Phys 255 or any Physics courses numbered 332 or higher.

Chemistry of Materials Emphasis (Code 250-002)

Eight credits chosen from Chem 213, 218, 274, 326, 460.

Geomaterials Emphasis (Code 250-003)

Eight credits chosen from Geol 312, 313, 330, 336, and 365.

Liberal Arts Emphasis (Code 250-004)

Core and elective courses plus eight credits from courses that reflect a thematic area of concentration and reflect intentional connections. Such an emphasis, created in consultation with a faculty advisor, must draw from courses appropriate for a major in another area distinct from Materials Science or its cognate subjects. At least two courses must have the same prefix.

Nanoscience Emphasis (Code 250-005)

Three credits from MSE 475 plus five credits chosen from MSE 362 and MSE/Phys 374.

Applied Materials Emphasis (Code 250-006)

Eight credits chosen from the following courses, at least two of which must have the same prefix: Math 312, 345, 443; Phys 255, 340, 350, 356, 360, 361, 362; Chem 213, 274; MSE 362, 363, 367, 368, 372, 451, 475.

Mathematics of Materials Emphasis (Code 250-008)

Eight credits chosen from Math 216 or any Math course numbered 312 or higher.

Entrepreneurship Emphasis (Code 250-009)

Eight credits from Mgmt 371, Mgmt 373, and Mgmt 374.