Typical **MatSci course** sequence (and pre-requisites)

	FALL	WINTER	SPRING
YEAR 1	EA1	EA2	EA3
	Math 220-1	Math 220-2	Math 228-1
	Chem 1X1 & lab	Chem 1X2 &lab	MatSci 301[2] (Chem 1X1)
	MatSci 190 (UR)[1]	DTC1	DTC2
YEAR 2	EA4	CivE 216[3](EA2)	Math 228-2
	MatSci 301[2] (Chem 1X1)	Phys 135-2 & lab	Phys 135-3 &lab
	MatSci 314 (Chem 1X2, Math 228-1, Phys 135-1)	MatSci 315 (MatSci 314)	MatSci 316-1 (MatSci314, 315)
	Elective[4]	Elective	Elective
YEAR 3	MatSci 316-2 (MatSci 316-1)	MatSci 332 (CivE 216, MatSci 316-2)	MatSci 331 (MatSci 301; MatSci 316 recommended)
	MatSci 351-1 (MatSci 301, EA4, Phys 135-3)	MatSci 351-2 (MatSci 351-1)	MatSci 390 (MatSci 316-2, 332)
	Elective	Elective	Elective
	Elective	Elective	Elective
YEAR 4	MatSci 391 (MatSci 316)	MatSci 361 (Phys. 135-3)	MatSci 396-2 (Sr. standing)
	Elective	MatSci 396-1(Sr. standing)	Elective
	Elective	Elective	Elective
	Elective	Elective	Elective

1) **MatSci 190** is not required, but recommended for students interested in MSE. Satisfies an unrestricted elective.
2) **MatSci 301** is offered in spring & fall. MSE majors should take it no later than fall of year 2.
3) **CivE 216** is offered every quarter and may be taken any time after EA2, but before MatSci 332.
4) **Electives:** Unrestricted elective (5), Basic engineering elective (1 from recommended list in MAS), Technical Elective (5 from Area of Concentration Worksheet), Social Science and Humanities Theme (see how to complete theme)
5) **Basic engineering (5):**
    a. 301 – Materials Science Principles (spring or fall) – 80 minute weekly lab
    b. 314 – Thermodynamics of Materials (fall)
    c. 315 – Phase Transformations and Diffusion of Materials (winter)
    d. CivE 216 – Mechanics of Materials (fall, winter, spring) – biweekly lab
    e. Elective from list in MAS (five BE courses must cover four topics, so list is limited)
6) **Required core courses (11)**
    a. 316-1 Microstructural Dynamics I (spring) – 2 hr weekly lab
    b. 316-2 Microstructural Dynamics II (fall) – 3 hr weekly lab
    c. 331 Soft Materials (spring)
    d. 332 Mechanical Behavior of Solids (winter) – two labs (experimental & computational)
    e. 351-1 Introductory Physics of Materials I (fall)
    f. 351-2 Introductory Physics of Materials II (winter) –2 hr biweekly lab
    g. 361 Crystallography and Diffraction (winter) –3 hour weekly labs
    h. 390 Materials Design (spring) – some labs & computational team project
    i. 391 Process Design (fall)
    j. 396-1&2 Senior Project in Materials Science and Engineering (f, w, s) – Students are responsible for seeking out a project with a MatSci faculty member.
7) **Area of Concentration/ Technical Electives (5)**
    a. Two 300-level MSE courses (excluding 394, 399, some 395); three 300-level MSE courses for students interested in the McCormick Undergraduate Honors program.
    b. Three math, science, engineering