

MATERIALS SCIENCE (AST2/MRP)(PLAN CODE: MEEMSAS)

Academic Plans, known as programs, include an overview description and a summary of program requirements. You can search the online catalog via the Academic Plan links on the right for a desired program or a specific course information.

Code	Title	Credits/ Units
General Education Requirements		
<i>Communication Skills</i>		
ENGL& 101	English Composition I	5
<i>Mathematics</i> ¹		
MATH& 151	Calculus I	5
MATH& 152	Calculus II	5
MATH& 153	Calculus III	5
MATH 215	Linear Algebra	5
<i>Distribution Requirements</i>		
Coursework should be planned with the Help of an advisor based on the requirements of the specific discipline at the baccalaureate institution the student selects to attend		
<i>Humanities</i>		5
Course Options (https://catalog.clark.edu/degree-certificate-requirements/transfer-degree-distribution-list/#humanities)		
<i>Social Sciences</i> ²		5
Course Options (https://catalog.clark.edu/degree-certificate-requirements/transfer-degree-distribution-list/#social-sciences)		
<i>Additional 5 credits in either Humanities or Social Sciences</i>		5
Physics		
Complete the following 3-term physics sequence with the required concurrent enrollment ³		
<i>Sequence One:</i>		
PHYS& 241 & PHYS& 231	Engineering Physics I and Engineering Phys Lab I	5
<i>Sequence Two:</i>		
PHYS& 242 & PHYS& 232	Engineering Physics II and Engineering Phys Lab II	5
<i>Sequence Three:</i>		
PHYS& 243 & PHYS& 233	Engineering Physics III and Engineering Phys Lab III	5
<i>Chemistry with Laboratory</i>		
CHEM& 141 & CHEM& 151	General Chemistry I and General Chemistry Laboratory I	5
<i>Additional Requirements</i>		
ENGR& 214	Statics	5
ENGR& 225	Mechanics of Materials	5
ENGR 221	Materials Science	5
Electives		
<i>Select 5 (five) specialization courses (minimum of 20-25 credits/units) in 20-25 consultation with an advisor as appropriate for intended specialization in the major and the intended transfer institution:</i>		
BIOL& 221	Majors Ecology/Evolution	
CSE 101	Engineering and Computer Science Orientation	

CSE 121	Introduction to C	
CHEM& 142 & CHEM& 152	General Chemistry II and General Chemistry Laboratory II	
CHEM& 143 & CHEM& 153	General Chemistry III and General Chemistry Laboratory III	
CHEM& 241	Organic Chemistry I	
CHEM& 251	Organic Chemistry Laboratory I	
ENGL& 235	Technical Writing	
ENGR 101	Engineering and Computer Science Orientation	
ENGR& 104	Introduction to Design	
ENGR 105	Wheeler Innovation Lab Qualifications	
ENGR 109	Introduction to Engineering	
ENGR 113	Engineering Sketching and Visualization	
ENGR 140	Basic Autocad	
ENGR 150	Basic Solidworks	
ENGR& 204	Electrical Circuits	
ENGR 221	Materials Science	
ENGR& 224	Thermodynamics	
ENGR& 240	Engineering Computations	
MATH 221	Differential Equations ⁴	
MATH& 254	Calculus IV	
Total Credits/Units		95-100

¹ MATH 103 and MATH 111/MATH 110 are required prerequisites for MATH& 151 that may be needed if calculus placement is not met.

² ECON& 201 or ECON& 202 is recommended, but not required.

³ Requires concurrent enrollment in PHYS 94/PHYS 95/PHYS 96

⁴ Clark requires concurrent enrollment or completion of MATH& 254 with a grade of "C" or higher.

Program Outcomes

Program outcomes are overarching skills that are emphasized and reinforced throughout several courses in a specific program; they are measurable statements that define what students should know or be able to do by the end of a certificate or degree at Clark College. After successful completion of this program, students will be able to:

- Demonstrate progress toward healthier behaviors. (GE)
- Obtain, evaluate, and ethically use information. (GE)
- Articulate well-considered ideas and written claims to an academic audience, using effective rhetorical techniques, properly credited evidence, and a command of Standard English. (GE)
- Interpret the human experience, within appropriate global and historical contexts, through evaluation, analysis, creation, or performance. (GE)
- Evaluate, analyze, and explain events, behaviors, and institutions using perspectives and methods in the Social Sciences. (GE)
- Analyze patterns of power, privilege, and inequity in the United States. (GE)
- Analyze and interpret quantitative information presented verbally, graphically, numerically, and/or symbolically. (GE)
- Apply communication theory to demonstrate effective oral communication skills. (GE)
- Demonstrate and clearly explain an effective strategy to solve a quantitative problem. (GE)

- Demonstrate understanding of the derivative as an instantaneous rate of change and the definite integral as a limit of a sum.
- Apply fundamental principles and relationships from the Natural Sciences to analyze technological or scientific problems.
- Apply scientific and technological knowledge and methodologies to creatively solve technological or scientific problems.
- Acquire scientific and technological information from appropriate sources to examine issues, claims or situations.
- Analyze and solve multi-step problems using techniques through single-variable calculus

Program maps are a suggested academic plan and should not be used in the place of regular academic advising appointments. Your student entry method, placement, course availability, and program requirements are subject to change and transfer credit(s) may change your map/plan.

To view the current suggested map for your program please visit our website <https://programmap.clark.edu/academics> (<https://programmap.clark.edu/academics/>)