



Physics, B.S. (Astronomy Concentration)

Core IMPACTS Curriculum	HRS	GR
Core IMPACTS Area I - Institutional Priorities	4-5	
1. Written and Oral Communication One of the following is required of all majors. Choose from the following: ART 2000, ANTH 110, COMM 1100, COMM 1110, ENGL 2000, ENGL 2050 (or) THEA 2050, PHIL 2020, or any international language 1001, 1002	3	
2. Other Institutional Options ANTH 1100, BUSA 1900, CS 1000, LIBR 2100, MUSC 1110, XIDS 2001, XIDS 2002	1-2	
Core IMPACTS Area M - Mathematics and Quantitative Skills	3	
Students are advised to select MATH 1113 (or MATH 1634 or MATH 1501, if the student has tested out of MATH 1113)	3-4	
Core IMPACTS Area P - Political Science and U.S. History (Citizenship)	6	
1. American / United States History HIST 2111 or 2112	3	
2. American / Georgia Government POLS 1101	3	
Core IMPACTS Area A - Arts, Humanities & Ethics (Humanities)	6	
1. Fine Arts XIDS 2100, ART 1201, ART 2201, ART 2202, FILM 2080, MUSC 1100, MUSC 1120, THEA 1100	3	
2. Humanities XIDS 2100, COMM 1154, ENGL 2110, ENGL 2120, ENGL 2130, ENGL 2180, ENGL 2190, FREN 1001, GRMN 1001, SPAN 1001, FREN 1002, GRMN 1002, SPAN 1002, FREN 2001, GRMN 2001, SPAN 2001, FREN 2002, GRMN 2002, SPAN 2002, FORL 2200, FORL 2300, PHIL 2010, PHIL 2030	3	
Core IMPACTS Area C - Communicating in Writing	6	
ENGL 1101	3	
ENGL 1102	3	
Core IMPACTS Area T - Technology, Mathematics, and Sciences (STEM)	10-11	
1. Science Courses All physics majors are advised to take CHEM 1211/1211L and CHEM 1212/1212L	7-8	
2. Mathematics, Science, and Quantitative Technology Courses Students are advised to select MATH 1634 or MATH 1501 (MATH 2644, if the student was not required to take MATH 1113)	3-4	
Core IMPACTS Area S - Social Sciences	6	
1. World History HIST 1111 or 1112	3	
2. Social Science Elective Courses ANTH 1004, ANTH 1102, CRIM 1100, ECON 2100, ECON 2105, ECON 2106, GEOG 1013, GEOG 2503, PHIL 2130, POLS 2201, PSYC 1101, SOCI 1101, SOCI 1160, XIDS 2300, XIDS 2301	3	
Field of Study	HRS	GR
MATH 2644 (Calculus II)	4	
MATH 2654 (Calculus III)	4	
PHYS 2211/2211L (Principles of Physics I)	4	
PHYS 2212/2212L (Principles of Physics II)	4	

Major Course Options	HRS	GR
Courses Required for the Degree	45-54	
PHYS 2130 (Sophomore Physics Seminar)	1	
PHYS 3113 (Mechanics)	3	
PHYS 3213 (Thermodynamics)	3	
PHYS 3313 (Electricity and Magnetism)	3	
PHYS 3503 (Modern Physics)	3	
MATH 3303 (Ordinary Differential Equations)	3	
Astronomy Concentration (At least 7 credit hours in this area must have the ASTR prefix. That is, either PHYS 4323 or PHYS 4333 [but not both] may count toward the 10 hours): ASTR 3133, ASTR 3683, ASTR 4103, ASTR 4433, ASTR 4984, PHYS 4323, or PHYS 4333	10	
Selected Math Electives: MATH 2853, MATH 3003, MATH 3203, MATH 4003, MATH 4013, MATH 4213, MATH 4313, MATH 4363, or MATH 4413	9	
Selected Courses: ASTR 2313, ASTR 3683, ASTR 4984, PHYS 3013, PHYS 3023, PHYS 3413, PHYS 3510, PHYS 3513, PHYS 3613, PHYS 3813, PHYS 4323, PHYS 4333, PHYS 4411, PHYS 4413, PHYS 4415, PHYS 4513, PHYS 4523, PHYS 4624, or PHYS 4683	12	
Electives: Must include enough upper level hours to make a total of at least 39.	6-15	
Total	120	



Physics, B.S. (Battery Technology and Sustainable Energy Concentration)

Core IMPACTS Curriculum	HRS	GR
Core IMPACTS Area I - Institutional Priorities	4-5	
1. Written and Oral Communication One of the following is required of all majors. Choose from the following: ART 2000, ANTH 110, COMM 1100, COMM 1110, ENGL 2000, ENGL 2050 (or) THEA 2050, PHIL 2020, or any international language 1001, 1002	3	
2. Other Institutional Options ANTH 1100, BUSA 1900, CS 1000, LIBR 2100, MUSC 1110, XIDS 2001, XIDS 2002	1-2	
Core IMPACTS Area M - Mathematics and Quantitative Skills	3	
Students are advised to select MATH 1113 (or MATH 1634 or MATH 1501, if the student has tested out of MATH 1113)	3-4	
Core IMPACTS Area P - Political Science and U.S. History (Citizenship)	6	
1. American / United States History HIST 2111 or 2112	3	
2. American / Georgia Government POLS 1101	3	
Core IMPACTS Area A - Arts, Humanities & Ethics (Humanities)	6	
1. Fine Arts XIDS 2100, ART 1201, ART 2201, ART 2202, FILM 2080, MUSC 1100, MUSC 1120, THEA 1100	3	
2. Humanities XIDS 2100, COMM 1154, ENGL 2110, ENGL 2120, ENGL 2130, ENGL 2180, ENGL 2190, FREN 1001, GRMN 1001, SPAN 1001, FREN 1002, GRMN 1002, SPAN 1002, FREN 2001, GRMN 2001, SPAN 2001, FREN 2002, GRMN 2002, SPAN 2002, FORL 2200, FORL 2300, PHIL 2010, PHIL 2030	3	
Core IMPACTS Area C - Communicating in Writing	6	
ENGL 1101	3	
ENGL 1102	3	
Core IMPACTS Area T - Technology, Mathematics, and Sciences (STEM)	10-11	
1. Science Courses All physics majors are advised to take CHEM 1211/1211L and CHEM 1212/1212L	7-8	
2. Mathematics, Science, and Quantitative Technology Courses Students are advised to select MATH 1634 or MATH 1501 (MATH 2644, if the student was not required to take MATH 1113)	3-4	
Core IMPACTS Area S - Social Sciences	6	
1. World History HIST 1111 or 1112	3	
2. Social Science Elective Courses ANTH 1004, ANTH 1102, CRIM 1100, ECON 2100, ECON 2105, ECON 2106, GEOG 1013, GEOG 2503, PHIL 2130, POLS 2201, PSYC 1101, SOCI 1101, SOCI 1160, XIDS 2300, XIDS 2301	3	
Field of Study	HRS	GR
MATH 2644 (Calculus II)	4	
MATH 2654 (Calculus III)	4	
PHYS 2211/2211L (Principles of Physics I)	4	
PHYS 2212/2212L (Principles of Physics II)	4	

Major Course Options	HRS	GR
Courses Required for the Degree	45-54	
PHYS 2130 (Sophomore Physics Seminar)	1	
PHYS 3113 (Mechanics)	3	
PHYS 3213 (Thermodynamics)	3	
PHYS 3313 (Electricity and Magnetism)	3	
PHYS 3503 (Modern Physics)	3	
MATH 3303 (Ordinary Differential Equations)	3	
PHYS 3513 (Power Distribution Sources and Networks)	3	
PHYS 3613 (Battery Technology and Design)	3	
PHYS 3813 (Electronic Systems Design in Vehicles)	3	
PHYS 4624 (Advanced Battery Technology and Design)	4	
Choose from the selected course: MATH 2853, CHEM 3310K, CHEM 3510	6	
Choose from the selected course: ASTR 3133, ASTR 3683, ASTR 4103, ASTR 4433, PHYS 3013, PHYS 3023, PHYS 3413, PHYS 3510, PHYS 4323, PHYS 4333, PHYS 4411, PHYS 4413, PHYS 4415, PHYS 4513, PHYS 4523, PHYS 4683, PHYS 4984	12	
Electives: Must include enough upper level hours to make a total of at least 39. <i>13 Hours Selected From:</i> PHYS 3513, PHYS 3613, PHYS 3813, PHYS 4624	13	
Total	120	



Physics, B.S. (Business Concentration)

Core IMPACTS Curriculum	HRS	GR
Core IMPACTS Area I - Institutional Priorities	4-5	
1. Written and Oral Communication One of the following is required of all majors. Choose from the following: ART 2000, ANTH 110, COMM 1100, COMM 1110, ENGL 2000, ENGL 2050 (or) THEA 2050, PHIL 2020, or any international language 1001, 1002	3	
2. Other Institutional Options ANTH 1100, BUSA 1900, CS 1000, LIBR 2100, MUSC 1110, XIDS 2001, XIDS 2002	1-2	
Core IMPACTS Area M - Mathematics and Quantitative Skills	3	
Students are advised to select MATH 1113 (or MATH 1634 or MATH 1501, if the student has tested out of MATH 1113)	3-4	
Core IMPACTS Area P - Political Science and U.S. History (Citizenship)	6	
1. American / United States History HIST 2111 or 2112	3	
2. American / Georgia Government POLS 1101	3	
Core IMPACTS Area A - Arts, Humanities & Ethics (Humanities)	6	
1. Fine Arts XIDS 2100, ART 1201, ART 2201, ART 2202, FILM 2080, MUSC 1100, MUSC 1120, THEA 1100	3	
2. Humanities XIDS 2100, COMM 1154, ENGL 2110, ENGL 2120, ENGL 2130, ENGL 2180, ENGL 2190, FREN 1001, GRMN 1001, SPAN 1001, FREN 1002, GRMN 1002, SPAN 1002, FREN 2001, GRMN 2001, SPAN 2001, FREN 2002, GRMN 2002, SPAN 2002, FORL 2200, FORL 2300, PHIL 2010, PHIL 2030	3	
Core IMPACTS Area C - Communicating in Writing	6	
ENGL 1101	3	
ENGL 1102	3	
Core IMPACTS Area T - Technology, Mathematics, and Sciences (STEM)	10-11	
1. Science Courses BIOL 1107/1107L, BIOL 1108/1108L, CHEM 1211/1211L, CHEM 1212/1212L, GEOL 1121/1121L, GEOL 1122/1122L	8	
2. Mathematics, Science, and Quantitative Technology Courses Students are advised to select MATH 1634 or MATH 1501 (MATH 2644, if the student was not required to take MATH 1113)	3-4	
Core IMPACTS Area S - Social Sciences	6	
1. World History HIST 1111 or 1112	3	
2. Social Science Elective Courses Either ECON 2105 or ECON 2106	3	
Field of Study	HRS	GR
MATH 2644 (Calculus II)	4	
MATH 2654 (Calculus III)	4	
PHYS 2211/2211L (Principles of Physics I)	4	
PHYS 2212/2212L (Principles of Physics II)	4	

Major Course Options	HRS	GR
Courses Required for the Degree	60	
PHYS 2130 (Sophomore Physics Seminar)	1	
PHYS 3213 (Thermodynamics)	3	
PHYS 3503 (Modern Physics)	3	
PHYS 3510 (Experimental Physics)	3	
Foreign Language	6	
ECON 3402 (Statistics for Business I)	3	
CS 1301 (Computer Science I)	3	
Fifteen hours selected from: ASTR 2313, ASTR 3133, ASTR 3683, ASTR 4103, ASTR 4433, MATH 2853, MATH 3003, MATH 3303, PHYS 3013, PHYS 3023, PHYS 3113/3115, PHYS 3313, PHYS 3413, PHYS 3513, PHYS 3613, PHYS 3813, PHYS 4323, PHYS 4333, PHYS 4411, PHYS 4413, PHYS 4415, PHYS 4513, PHYS 4523, PHYS 4624, PHYS 4683, PHYS 4984	15	
Concentration Courses (The following are preparatory courses for the MBA)		
ACCT 2101 (Principles of Accounting I)	3	
ACCT 2102 (Principles of Accounting II)	3	
MGNT 3600 (Principles of Management)	3	
MGNT 3803 (Principles of Marketing)	3	
BUSA 2106 (Legal and Ethical Environment of Business)	3	
CISM 2201 (Foundations of Spreadsheet Analysis)	3	
CISM 3330 (Management of Information Systems)	3	
FINC 3511 (Corporate Finance)	3	
Total	120	



Physics, B.S. (Engineering Pathway)

Core IMPACTS Curriculum	HRS	GR
Core IMPACTS Area I - Institutional Priorities	4-5	
1. Written and Oral Communication One of the following is required of all majors. Choose from the following: ART 2000, ANTH 110, COMM 1100, COMM 1110, ENGL 2000, ENGL 2050 (or) THEA 2050, PHIL 2020, or any international language 1001, 1002	3	
2. Other Institutional Options ANTH 1100, BUSA 1900, CS 1000, LIBR 2100, MUSC 1110, XIDS 2001, XIDS 2002	1-2	
Core IMPACTS Area M - Mathematics and Quantitative Skills	3	
Students are advised to select MATH 1113 (or MATH 1634 or MATH 1501, if the student has tested out of MATH 1113)	3-4	
Core IMPACTS Area P - Political Science and U.S. History (Citizenship)	6	
1. American / United States History HIST 2111 or 2112	3	
2. American / Georgia Government POLS 1101	3	
Core IMPACTS Area A - Arts, Humanities & Ethics (Humanities)	6	
1. Fine Arts XIDS 2100, ART 1201, ART 2201, ART 2202, FILM 2080, MUSC 1100, MUSC 1120, THEA 1100	3	
2. Humanities XIDS 2100, COMM 1154, ENGL 2110, ENGL 2120, ENGL 2130, ENGL 2180, ENGL 2190, FREN 1001, GRMN 1001, SPAN 1001, FREN 1002, GRMN 1002, SPAN 1002, FREN 2001, GRMN 2001, SPAN 2001, FREN 2002, GRMN 2002, SPAN 2002, FORL 2200, FORL 2300, PHIL 2010, PHIL 2030	3	
Core IMPACTS Area C - Communicating in Writing	6	
ENGL 1101	3	
ENGL 1102	3	
Core IMPACTS Area T - Technology, Mathematics, and Sciences (STEM)	10-11	
1. Science Courses All physics majors are advised to take CHEM 1211/1211L and CHEM 1212/1212L	7-8	
2. Mathematics, Science, and Quantitative Technology Courses Students are advised to select MATH 1634 or MATH 1501 (MATH 2644, if the student was not required to take MATH 1113)	3-4	
Core IMPACTS Area S - Social Sciences	6	
1. World History HIST 1111 or 1112	3	
2. Social Science Elective Courses ANTH 1004, ANTH 1102, CRIM 1100, ECON 2100, ECON 2105, ECON 2106, GEOG 1013, GEOG 2503, PHIL 2130, POLS 2201, PSYC 1101, SOCI 1101, SOCI 1160, XIDS 2300, XIDS 2301	3	
Field of Study	HRS	GR
MATH 2644 (Calculus II)	4	
MATH 2654 (Calculus III)	4	
PHYS 2211/2211L (Principles of Physics I)	4	
PHYS 2212/2212L (Principles of Physics II)	4	

Major Course Options	HRS	GR
Courses Required for the Degree	30-39	
PHYS 3113 (Mechanics)	3	
PHYS 3213 (Thermodynamics)	3	
PHYS 3313 (Electricity and Magnetism)	3	
PHYS 3503 (Modern Physics)	3	
MATH 3303 (Ordinary Differential Equations)	3	
Choose from selected courses: FL; PHYS 4513, 4523; MATH 2853, 3003, 3203, 4313, 4363, 4413	6	
Choose from selected courses: PHYS 2130, 3013, 3023, 3413, 3510, 3513, 3613, 3813, 4323, 4333, 4411, 4413, 4415, 4523, 4624, 4683; ASTR 3133, 3683, 4103, 4433; CS 1301	9	
X number of hours at Kennesaw State University: 21-30 Hours of which 21-30 hours are UWG equivalent and must include enough upper level hours to make a total of at least 39].	21-30	
Total	120	



Physics, B.S. (MAT Pathway)

Core IMPACTS Curriculum	HRS	GR
Core IMPACTS Area I - Institutional Priorities	4-5	
1. Written and Oral Communication One of the following is required of all majors. Choose from the following: ART 2000, ANTH 110, COMM 1100, COMM 1110, ENGL 2000, ENGL 2050 (or) THEA 2050, PHIL 2020, or any international language 1001, 1002	3	
2. Other Institutional Options ANTH 1100, BUSA 1900, CS 1000, LIBR 2100, MUSC 1110, XIDS 2001, XIDS 2002	1-2	
Core IMPACTS Area M - Mathematics and Quantitative Skills	3	
Students are advised to select MATH 1113 (or MATH 1634 or MATH 1501, if the student has tested out of MATH 1113)	3-4	
Core IMPACTS Area P - Political Science and U.S. History (Citizenship)	6	
1. American / United States History HIST 2111 or 2112	3	
2. American / Georgia Government POLS 1101	3	
Core IMPACTS Area A - Arts, Humanities & Ethics (Humanities)	6	
1. Fine Arts XIDS 2100, ART 1201, ART 2201, ART 2202, FILM 2080, MUSC 1100, MUSC 1120, THEA 1100	3	
2. Humanities XIDS 2100, COMM 1154, ENGL 2110, ENGL 2120, ENGL 2130, ENGL 2180, ENGL 2190, FREN 1001, GRMN 1001, SPAN 1001, FREN 1002, GRMN 1002, SPAN 1002, FREN 2001, GRMN 2001, SPAN 2001, FREN 2002, GRMN 2002, SPAN 2002, FORL 2200, FORL 2300, PHIL 2010, PHIL 2030	3	
Core IMPACTS Area C - Communicating in Writing	6	
ENGL 1101	3	
ENGL 1102	3	
Core IMPACTS Area T - Technology, Mathematics, and Sciences (STEM)	10-11	
1. Science Courses All physics majors are advised to take CHEM 1211/1211L and CHEM 1212/1212L	7-8	
2. Mathematics, Science, and Quantitative Technology Courses Students are advised to select MATH 1634 or MATH 1501 (MATH 2644, if the student was not required to take MATH 1113)	3-4	
Core IMPACTS Area S - Social Sciences	6	
1. World History HIST 1111 or 1112	3	
2. Social Science Elective Courses ANTH 1004, ANTH 1102, CRIM 1100, ECON 2100, ECON 2105, ECON 2106, GEOG 1013, GEOG 2503, PHIL 2130, POLS 2201, PSYC 1101, SOCI 1101, SOCI 1160, XIDS 2300, XIDS 2301	3	
Field of Study	HRS	GR
MATH 2644 (Calculus II)	4	
MATH 2654 (Calculus III)	4	
PHYS 2211/2211L (Principles of Physics I)	4	
PHYS 2212/2212L (Principles of Physics II)	4	

Major Course Options	HRS	GR
Courses Required for the Degree	60	
PHYS 2130 (Sophomore Physics Seminar)	1	
PHYS 3100 (Introduction to Science Pedagogy)	1	
PHYS 3113 (Mechanics)	3	
PHYS 3213 (Thermodynamics)	3	
PHYS 3313 (Electricity and Magnetism)	3	
PHYS 3503 (Modern Physics)	3	
MATH 3303 (Ordinary Differential Equations)	3	
PHYS 4411/PHYS 5411	3	
PHYS 4984 or ASTR 4984	1	
Fifteen hours selected from: PHYS 3013, PHYS 3023, PHYS 3413, PHYS 3510, PHYS 3513, PHYS 3613, PHYS 3813, PHYS 4323, PHYS 4333, PHYS 4413, PHYS 4415, PHYS 4513, PHYS 4523, PHYS 4624, PHYS 4683, ASTR 3133, ASTR 3683, ASTR 4103, ASTR 4433	15	
Complete these prior to admission to Teacher Certification (MAT): EDUC 3110, EDUC 2120, and EDUC 2130	9	
MEDT 2501 or EDUC 2110	3	
Electives: Must include enough upper-level hours to make a total of at least 39 hours.	15	
Total	120	