

Game Development, AAS

The game development associate of applied science degree provides students with the focused knowledge and understanding of game design and development useful in qualifying for entry-level industry positions as game programmers, tool builders, collision detection developers, engine builders and interface programmers as well as video and online training developers, Q/A (Question/Answer) Testers, customer supporters and simulations developers. Completion of this degree program will greatly enhance students' ability to create code for 2D/3D graphics and real-time virtual environments. Additional skills will include an understanding of game ethics, of the proper presentation of "game bibles" and of math and physics required to model a realistic game world.

(Major Code 2650; CIP Code 50.0411)

Game Development Program web page (<http://www.jccc.edu/academics/credit/game-development/>)

Program Learning Outcomes

Johnson County Community College (JCCC) is committed to offering high-quality affordable programs that focus on developing knowledge and skills conducive to life-long learning. Both the General Education Student Learning Outcomes (<https://www.jccc.edu/about/leadership-governance/administration/institutional-effectiveness-branch/outcomes-assessment/learning-outcomes.html>) and Institutional Learning Outcomes (<https://www.jccc.edu/about/leadership-governance/administration/institutional-effectiveness-branch/outcomes-assessment/institutional-learning-outcomes.html>) convey JCCC's approach to programmatic outcomes. Additionally, students who successfully complete the Game Development, AAS from JCCC will be able to:

- Use a game engine to prototype ideas and concepts.
- Develop code that is functional, efficient, and elegant for the purpose of developing games.
- Work in teams and individually to overcome complex challenges.
- Adapt prototypes into completed release builds.

Associate of Applied Science Degree

Game Design Option

First Semester		Hours
CS 134	Programming Fundamentals	4
ENGL 121 or ENGL 119	Composition I (SGE 010) or College Composition I with Review*	3
GAME 102	The Business of Games	3
GAME 104	Introduction to Game Development	1
GAME 105	Beginning Game Creation	3
MATH 171	College Algebra* (or higher) (SGE 030) (SGE 070)	3
Hours		17
Second Semester		Hours
GAME 120	Game Design I*	4
GAME 132	Game Level Editing*	4
GAME 136	Game Prototyping*	4
GAME 180	Artificial Intelligence for Games*	3
Social and Behavioral Sciences Elective ^		3
Hours		18
Third Semester		Hours
GAME 134	Game World Creation*	4
GAME 220	Game Design II*	4
GAME 235	Game Quality Assurance*	2
GAME 242	Agile Game Development*	3
Arts and Humanities Elective ^+		3
Hours		16
Fourth Semester		Hours
Program Elective (see below)		3
COMS 120 or COMS 121 or COMS 125	Interpersonal Communication (SGE 020) (SGE 070) or Public Speaking or Personal Communication	3



ENGL 150	Digital Narratives*	3
GAME 238	Serious Game Design*	3
GAME 250	Game Capstone*	4
Hours		16
Total Hours		67

Game Programming Option

First Semester		Hours
CS 134	Programming Fundamentals	4
ENGL 121 or ENGL 119	Composition I (SGE 010) or College Composition I with Review*	3
GAME 102	The Business of Games	3
GAME 104	Introduction to Game Development	1
GAME 105	Beginning Game Creation	3
MATH 171	College Algebra* (or higher) (SGE 030) (SGE 070)	3
Hours		17
Second Semester		Hours
CS 201	Concepts of Programming Algorithms using C#*	4
GAME 121	Game Programming I*	4
GAME 131	User-Centered Design*	4
GAME 180	Artificial Intelligence for Games*	3
Social and Behavioral Sciences Elective ^		3
Hours		18
Third Semester		Hours
CS 236	Object-Oriented Programming Using C#*	4
GAME 221	Game Programming II*	4
GAME 242	Agile Game Development*	3
MATH 191 or PHYS 191	Math and Physics for Games I or Math and Physics for Games I*	4
Hours		15
Fourth Semester		Hours
Program Elective (see below)		3
COMS 120 or COMS 121 or COMS 125	Interpersonal Communication (SGE 020) (SGE 070) or Public Speaking or Personal Communication	3
GAME 250	Game Capstone*	4
GAME 255	Mobile Game Programming*	4
Arts and Humanities Elective ^+		3
Hours		17
Total Hours		67

Program Electives

Code	Title	Hours
ENGL 150	Digital Narratives*	3
GAME 120	Game Design I*	4
GAME 121	Game Programming I*	4
GAME 131	User-Centered Design*	4
GAME 132	Game Level Editing*	4
GAME 134	Game World Creation*	4
GAME 136	Game Prototyping*	4
GAME 220	Game Design II*	4
GAME 221	Game Programming II*	4
GAME 235	Game Quality Assurance*	2
GAME 238	Serious Game Design*	3

GAME 255	Mobile Game Programming*	4
GAME 292	Special Topics:*	3

* This course has a registration requirement.

^ See all AAS general education electives (<https://catalog.jccc.edu/archives/2025-26/degree requirements/associate-applied-science/>).

+ HUM 155 and HUM 156 are recommended.

Kansas Systemwide General Education (SGE) Key

- English SGE ⁰¹⁰
- Communications SGE ⁰²⁰
- Mathematics and Statistics SGE ⁰³⁰
- Natural and Physical Sciences SGE ⁰⁴⁰
- Social and Behavioral Sciences SGE ⁰⁵⁰
- Arts and Humanities SGE ⁰⁶⁰
- Cavalier Credits SGE ⁰⁷⁰

JCCC General Education Requirements

English and Communications, Associate of Applied Science (3 hrs.)

Code	Title	Hours
ENGL 121	Composition I* (SGE 010)	3
or ENGL 119	College Composition I with Review*	
If your specific degree program requires a communications elective, select one from the following:		3
COMS 120	Interpersonal Communication (SGE 020) (SGE 070)	
COMS 121	Public Speaking (SGE 020) (SGE 070)	
COMS 125	Personal Communication (SGE 020) (SGE 070)	
ENGL 122	Composition II* (SGE 010) (SGE 070)	
ENGL 123	Technical Writing I* (SGE 060) (SGE 070)	
ENGL 140	Writing for Interactive Media* (SGE 060) (SGE 070)	

Arts and Humanities, Associate of Applied Science (3 hrs.)

Code	Title	Hours
Art History		
ARTH 180	Art History: Ancient to Medieval (SGE 060) (SGE 070)	3
ARTH 182	Art History: Renaissance to Modern (SGE 060) (SGE 070)	3
ARTH 184	Art History: Twentieth Century (SGE 060) (SGE 070)	3
ARTH 188	History of Photography (SGE 060) (SGE 070)	3
ARTH 200	Women, Art, and Society (SGE 060) (SGE 070)	3
Communications		
COMS 180	Intercultural Communication (SGE 070)	3
English		
English (Literature)		
ENGL 130	Introduction to Literature* (SGE 060) (SGE 070)	3
ENGL 214	Environmental Literature* (SGE 060) (SGE 070)	3
ENGL 215	U.S. Latino and Latina Literature* (SGE 060) (SGE 070)	3
ENGL 216	African-American Literature* (SGE 060) (SGE 070)	3
ENGL 217	Literature by Women* (SGE 060) (SGE 070)	3
ENGL 227	Introduction to Poetry* (SGE 060) (SGE 070)	3
ENGL 230	Introduction to Fiction* (SGE 060) (SGE 070)	3
ENGL 232	Children's Literature* (SGE 060) (SGE 070)	3
ENGL 235	Drama as Literature* (SGE 060) (SGE 070)	3



ENGL 236	British Literature to 1800* (SGE 060) (SGE 070)	3
ENGL 237	British Literature after 1800* (SGE 060) (SGE 070)	3
ENGL 246	American Literature I* (SGE 060) (SGE 070)	3
ENGL 247	American Literature II* (SGE 060) (SGE 070)	3
ENGL 254	Masterpieces of the Cinema* (SGE 060) (SGE 070)	3
English (Writing)		
ENGL 222	Advanced Composition: The Art of the Essay* (SGE 060) (SGE 070)	3
ENGL 223	Introduction to Creative Writing* (SGE 060) (SGE 070)	3
ENGL 257	Generative AI and The Future of Writing* (SGE 060) (SGE 070)	3
Film and Media Studies		
FMS 100	Intro to Film (SGE 060) (SGE 070)	3
FMS 200	Intro to Filmmaking and Media Aesthetics (SGE 060) (SGE 070)	3
Foreign Languages		
FL 120	Elementary German I (SGE 060) (SGE 070)	5
FL 121	Elementary German II* (SGE 060) (SGE 070)	5
FL 130	Elementary Spanish I (SGE 060) (SGE 070)	5
FL 131	Elementary Spanish II* (SGE 060) (SGE 070)	5
FL 140	Elementary French I (SGE 060) (SGE 070)	5
FL 141	Elementary French II* (SGE 060) (SGE 070)	5
FL 165	Elementary Chinese I (SGE 060) (SGE 070)	5
FL 166	Elementary Chinese II* (SGE 060) (SGE 070)	5
FL 170	Elementary Japanese I (SGE 060) (SGE 070)	5
FL 171	Elementary Japanese II* (SGE 060) (SGE 070)	5
FL 182	Intermediate Japanese I* (SGE 060) (SGE 070)	5
FL 183	Intermediate Japanese II* (SGE 060) (SGE 070)	5
FL 220	Intermediate German I* (SGE 060) (SGE 070)	3
FL 221	Intermediate German II* (SGE 060) (SGE 070)	3
FL 230	Intermediate Spanish I* (SGE 060) (SGE 070)	3
FL 231	Intermediate Spanish II* (SGE 060) (SGE 070)	3
FL 240	Intermediate French I* (SGE 060) (SGE 070)	3
FL 241	Intermediate French II* (SGE 060) (SGE 070)	3
FL 265	Intermediate Chinese I* (SGE 060) (SGE 070)	3
FL 266	Intermediate Chinese II* (SGE 060) (SGE 070)	3
History		
HIST 120	Local and Kansas History (SGE 060) (SGE 070)	3
HIST 125	Western Civilization: Ancient World to the Renaissance (SGE 060) (SGE 070)	3
HIST 126	Western Civilization: Scientific Revolution to the Modern Age (SGE 060) (SGE 070)	3
HIST 128	Medieval History (SGE 060) (SGE 070)	3
HIST 129	Early Modern Europe 1500-1789 (SGE 060) (SGE 070)	3
HIST 130	European History Since 1789 (SGE 060) (SGE 070)	3
HIST 132	History of Africa (SGE 060) (SGE 070)	3
HIST 135	Eastern Civilization (SGE 060) (SGE 070)	3
HIST 137	African American History (SGE 060) (SGE 070)	3
HIST 140	U.S. History to 1877 (SGE 060) (SGE 070)	3
HIST 141	U.S. History Since 1877 (SGE 060) (SGE 070)	3
HIST 143	Ancient Greece, the Near East and Egypt (SGE 060) (SGE 070)	3
HIST 145	History of Ancient Rome (SGE 060) (SGE 070)	3
HIST 149	History of India (SGE 060) (SGE 070)	3
HIST 150	Islam: Religion and Civilization (SGE 060) (SGE 070)	3



HIST 151	World History: Traditional (SGE 060) (SGE 070)	3
HIST 152	World History: Modern World (SGE 060) (SGE 070)	3
HIST 160	Modern Russian History (SGE 060) (SGE 070)	3
HIST 162	Modern Latin America (SGE 060) (SGE 070)	3
HIST 165	History of China (SGE 060) (SGE 070)	3
HIST 167	Introduction to History: Japan (SGE 060) (SGE 070)	3
HIST 180	North American Indian History (SGE 060) (SGE 070)	3
HIST 195	History of the Middle East (SGE 060) (SGE 070)	3
HIST 200	Empires of the Silk Road (SGE 060) (SGE 070)	3
HIST 210	Environmental History of North America (SGE 060) (SGE 070)	3
HIST 250	American West (SGE 060) (SGE 070)	3
HIST 260	Women in U.S. History (SGE 060) (SGE 070)	3
Humanities		
HUM 122	Introduction to Humanities (SGE 060) (SGE 070)	3
HUM 145	World Humanities: Ancient to Medieval (SGE 060) (SGE 070)	3
HUM 146	World Humanities: Renaissance to Modern (SGE 060) (SGE 070)	3
HUM 150	Islam: Religion and Civilization (SGE 060) (SGE 070)	3
HUM 155	Classical Mythology (SGE 060) (SGE 070)	3
HUM 156	Contemporary Approaches to World Mythology (SGE 060) (SGE 070)	3
HUM 165	Introduction to Chinese Culture (SGE 060) (SGE 070)	3
HUM 167	Introduction to Japanese Culture (SGE 060) (SGE 070)	3
Journalism		
JOUR 120	Mass Media and Society (SGE 060) (SGE 070)	3
Music		
MUS 121	Introduction to Music Listening (SGE 060) (SGE 070)	3
MUS 125	Introduction to Jazz Listening (SGE 060) (SGE 070)	3
MUS 126	Introduction to World Music (SGE 060) (SGE 070)	3
MUS 128	History of Rock and Roll Music (SGE 060) (SGE 070)	3
Religion		
REL 120	Exploring World Religions (SGE 060) (SGE 070)	3
REL 125	Asian Religions (SGE 060) (SGE 070)	3
REL 126	Religions of the West (SGE 060) (SGE 070)	3
REL 150	Islam: Religion and Civilization (SGE 060) (SGE 070)	3
Philosophy		
PHIL 121	Introduction to Philosophy (SGE 060) (SGE 070)	3
PHIL 124	Logic and Critical Thinking (SGE 060) (SGE 070)	3
PHIL 128	Environmental Ethics (SGE 060) (SGE 070)	3
PHIL 130	Food Ethics (SGE 060) (SGE 070)	3
PHIL 143	Ethics (SGE 060) (SGE 070)	3
PHIL 154	History of Ancient Philosophy (SGE 060) (SGE 070)	3
PHIL 176	Philosophy of Religion (SGE 060) (SGE 070)	3
Photography		
PHOT 200	Foundations in Photography (SGE 060) (SGE 070)	3
Theater		
THEA 120	Introduction to Theater (SGE 060) (SGE 070)	3

Social and Behavioral Sciences, Associate of Applied Science (3 hrs.)

Code	Title	Hours
Anthropology		
ANTH 125	Cultural Anthropology (SGE 050) (SGE 070)	3

ANTH 126	Physical Anthropology (SGE 050) (SGE 070)	3
ANTH 130	World Cultures (SGE 050) (SGE 070)	3
ANTH 142	World Prehistory (SGE 050) (SGE 070)	3
ANTH 165	Linguistic Anthropology (SGE 050) (SGE 070)	3
Criminal Justice		
CJ 121	Introduction to Criminal Justice System (SGE 050) (SGE 070)	3
CJ 141	Criminal Law (SGE 050) (SGE 070)	3
CJ 223	International Criminal Justice Systems (SGE 050) (SGE 070)	3
Economics		
ECON 132	Survey of Economics (SGE 050) (SGE 070)	3
ECON 230	Principles of Macroeconomics (SGE 050) (SGE 070)	3
ECON 231	Principles of Microeconomics (SGE 050) (SGE 070)	3
Geoscience		
GEOS 145	World Regional Geography (SGE 050) (SGE 070)	3
GEOS 155	Human Geography (SGE 050) (SGE 070)	3
Legal Studies		
LAW 120	Introduction to Paralegal Studies (SGE 050) (SGE 070)	3
LAW 121	Introduction to Law (SGE 050) (SGE 070)	3
Political Science		
POLS 122	Political Science (SGE 050) (SGE 070)	3
POLS 124	American National Government (SGE 050) (SGE 070)	3
POLS 126	State and Local Government (SGE 050) (SGE 070)	3
POLS 132	Introduction to Comparative Government (SGE 050) (SGE 070)	3
POLS 135	International Relations (SGE 050) (SGE 070)	3
POLS 175	Environmental Policy and Law (SGE 050) (SGE 070)	3
POLS 192	Political Theory (SGE 050) (SGE 070)	3
POLS 200	Model United Nations (SGE 050) (SGE 070)	3
POLS 220	Introduction to Public Policy (SGE 050) (SGE 070)	3
POLS 245	Introduction to Public Administration (SGE 050) (SGE 070)	3
Psychology		
PSYC 121	Applied Psychology (SGE 050) (SGE 070)	3
PSYC 130	Introduction to Psychology (SGE 050) (SGE 070)	3
PSYC 215	Child Development* (SGE 050) (SGE 070)	3
PSYC 218	Human Development* (SGE 050) (SGE 070)	3
Sociology		
SOC 122	Introduction to Sociology (SGE 050) (SGE 070)	3
SOC 125	Social Problems (SGE 050) (SGE 070)	3
SOC 131	Sociology of Families (SGE 050) (SGE 070)	3
SOC 146	Introduction to Social Work and Social Welfare (SGE 050) (SGE 070)	3
Gender and Ethnic Studies		
WGS 201	Global Women's Studies (SGE 050) (SGE 070)	3

Mathematics and Sciences, Associate of Applied Science (3 hrs.)

Code	Title	Hours
Mathematics		
MATH 120	Business Mathematics*	3
MATH 130	Technical Mathematics I*	3
MATH 131	Technical Mathematics II*	3
MATH 151	Contemporary Mathematics* (SGE 030) (SGE 070)	3
MATH 161	Elementary Statistics* (SGE 030) (SGE 070)	3

MATH 171	College Algebra* (SGE 030) (SGE 070)	3
MATH 172	Trigonometry* (SGE 030) (SGE 070)	3
MATH 173	Precalculus* (SGE 030) (SGE 070)	5
MATH 175	Discrete Mathematics and its Applications* (SGE 030) (SGE 070)	3
MATH 201	Statistics* (SGE 030) (SGE 070)	3
MATH 231	Business and Applied Calculus I* (SGE 030) (SGE 070)	3
MATH 232	Business and Applied Calculus II* (SGE 030) (SGE 070)	3
MATH 241	Calculus I* (SGE 030) (SGE 070)	5
MATH 242	Calculus II* (SGE 030) (SGE 070)	5
MATH 243	Calculus III* (SGE 030) (SGE 070)	5
MATH 254	Differential Equations* (SGE 030) (SGE 070)	4
MATH 285	Statistics for Business* (SGE 030) (SGE 070)	4
Life Science		
BIOL 121	Introductory Biology for Non-Majors (SGE 040) (SGE 070)	4
BIOL 125	General Botany (SGE 040) (SGE 070)	5
BIOL 127	General Zoology (SGE 040) (SGE 070)	5
BIOL 135	Principles of Cell and Molecular Biology (SGE 040) (SGE 070)	4
BIOL 140	Human Anatomy (SGE 040) (SGE 070)	4
BIOL 144	Human Anatomy and Physiology* (SGE 040) (SGE 070)	5
BIOL 150	Biology of Organisms* (SGE 040) (SGE 070)	5
BIOL 161	Introduction to Biotechnology (SGE 040) (SGE 070)	4
BIOL 225	Human Physiology* (SGE 040) (SGE 070)	4
BIOL 230	Microbiology* (SGE 040) (SGE 070)	3
BIOL 231	Microbiology Lab* (SGE 040) (SGE 070)	2
EVRN 124	Oceanus: Essentials of Oceanography (SGE 040) (SGE 070)	3
EVRN 130	Environmental Science (SGE 040) (SGE 070)	3
EVRN 132	Environmental Science Laboratory* (SGE 040) (SGE 070)	2
EVRN 134	Principles of Sustainability	3
EVRN 250	Bioethics in Science and Research*	3
EVRN 275	Nature, Law, and Environmental Protection*	3
Physical Science		
ASTR 120	Fundamentals of Astronomy	3
ASTR 122	Astronomy (SGE 040) (SGE 070)	4
CHEM 120	Chemistry in Society* (SGE 040) (SGE 070)	4
CHEM 122	Principles of Chemistry* (SGE 040) (SGE 070)	5
CHEM 124	General Chemistry I Lecture* (SGE 040) (SGE 070)	4
CHEM 125	General Chemistry I Lab* (SGE 040) (SGE 070)	1
CHEM 131	General Chemistry II Lecture* (SGE 040) (SGE 070)	4
CHEM 132	General Chemistry II Lab* (SGE 040) (SGE 070)	1
CHEM 140	Principles of Organic & Biological Chemistry* (SGE 040) (SGE 070)	5
ENGR 121	Engineering Orientation	2
GEOS 130	General Geology (SGE 040) (SGE 070)	5
GEOS 140	Physical Geography (SGE 040) (SGE 070)	3
GEOS 141	Physical Geography Lab* (SGE 040) (SGE 070)	2
GEOS 160	Introduction to Meteorology (SGE 040) (SGE 070)	5
PHYS 130	College Physics I* (SGE 040) (SGE 070)	5
PHYS 131	College Physics II* (SGE 040) (SGE 070)	5
PHYS 220	Engineering Physics I* (SGE 040) (SGE 070)	5



PHYS 221	Engineering Physics II* (SGE 040) (SGE 070)	5
PSCI 120	Physical Science (SGE 040) (SGE 070)	4

Cavalier Credits (3 hrs.)

Code	Title	Hours
------	-------	-------

Requires the completion of 3 additional credit hours to be selected from one of the above general education categories.

General Education Hours: 15