

SCHOOL OF COMPUTING
Holy Angel University, Angeles City

PROGRAM SPECIFICATIONS

I. ***Degree name:*** **BACHELOR of SCIENCE in ENTERTAINMENT and MULTIMEDIA COMPUTING (BS EMC) with area of Specialization in DIGITAL ANIMATION**

II. ***Nature of the Degree:***

The BSEMC program is designed to equip students with the concepts, principles and techniques of computing in the design and development of multimedia products and solutions. It includes applications in various fields such as entertainment, education, advertising and the like.

The program enables the students to learn and experience the whole pipeline of digital animation projects. Students acquire the independence and creative competencies to articulate project design and requirements of new projects through the application of tools, techniques, methods and best practices in animation as prescribed by the industry.

Students develop expertise in the use of computers to manipulate images, prepare print layouts and create designs and complete projects which require application of graphic design concepts such as photography, illustration, interface design, video and digital animation.

A capstone project that focuses on the chosen area of specialization which enables the students to apply the concepts and skills they have learned in real and simulated situations is the final requirement for the degree.

Area of Specialization: ***Digital Animation***

After completing the program, students are expected to have gained a strong foundation in the application of fundamental and advanced theories and techniques in 2D and 3D animation, use and development for advancement of animation technologies and production of commercially acceptable content and viable solutions for different platforms.

III. ***Program Goals:***

The BSEMC graduates are expected to be digital animation professionals who are equipped with both creative and technical knowledge, skills, and values in conceptualizing, designing and producing animation products and solutions, and in managing such projects over different technology platforms.

IV. ***Specific Professional Careers for BSIT Network Administration Graduates:***

- a. Primary Job Roles:
 - i. Creative Programmer
 - ii. Technical Animator
 - iii. Creative Content Developer
 - iv. Ad Builders
 - v. Technical Director for Modeling / Rigging / Lighting
 - vi. Animation Quality Assurance Specialist
 - vii. Technical Director for Game Art
 - viii. Digital 2D or 3D Animation Content Producer
 - ix. Digital 2D or 3D Production Designer
 - x. Associate Business Development Specialist for Entertainment Multimedia Industries

V. ***Program Educational Objectives (PEOs)***

Three to five years after graduation, BS EMC graduates of the College of Information and Communications Technology, shall be living testimonies of HAU's mission to transform its students into persons of conscience, competence and compassion by:

- actively participating in the production and utilization of innovative digital animation content and applications that adhere to ethical and professional standards;
- practicing of community service and development in both professional and personal levels; and
- promoting and pursuing lifelong learning.

VI. **Graduate Attributes, Student Outcomes (SOs) and Graduate Outcomes (GOs):**

The program must enable students to attain, by the time of graduation:

Graduate Attributes	National Association of Schools of Art and Design (NASAD) Student Outcomes (SOs)	CHED Graduate Outcomes (GOs)
Knowledge for Solving Computing Problems	<p>Knowledge and skills in the use of basic principles, concepts, tools, techniques, procedures, and technologies sufficient to produce animation art from concept to a finished product that communicates ideas and/or stories to a viewer or to an audience. This includes, but is not limited to, the ability to use the competencies listed in items b. through g. below in professional contexts as appropriate to the needs of specific projects;</p>	<p>CS01. Apply knowledge of computing fundamentals, knowledge of a computing sciences to the practice of being an entertainment and multimedia computing professional;</p>
	<p>Knowledge of the principles of animation, including its visual, spatial, sound, motion, and temporal elements and features, and how these elements are combined in the development of animation art;</p>	<p>Specialized computing knowledge in each applicable field, and the ability to apply such knowledge to provide solutions to actual problems;</p>
	<p>Functional understanding of and ability to use narrative, non-narrative, and other information/language structures (linear, non-linear, thematic, cinematic, interactive, etc.) to organize content in time-based media;</p>	<p>Knowledge of contemporary issues;</p>
Problem Analysis	<p>Functional knowledge of the history of animation, its artistic and technological evolution, and an understanding of basic aesthetic and critical theory;</p>	<p>An ability to analyze project requirements and to design and implement project prototypes;</p>
		<p>An ability to recognize, formulate, and solve computing problems;</p>
Design / Development of Solutions	<p>Ability to use concepts and processes for the development, coordination, and completion of animation art (examples include, but are not</p>	<p>An ability to design, improve, and deploy products that meet client’s needs within realistic constraints;</p>

Graduate Attributes	National Association of Schools of Art and Design (NASAD) Student Outcomes (SOs)	CHED Graduate Outcomes (GOs)
	<p>limited, to concept, visual, and character development; the use of scenarios and personas; and storyboarding, flowcharting, and layout);</p> <p>Functional understanding and ability to use the characteristics and capabilities of various animation methods and technologies in creative and project development contexts (examples include, but are not limited to, stop motion, traditional animation, 2D Digital, 3D Digital, etc.);</p> <p>Present work that demonstrates perceptual acuity, conceptual understanding, and technical facility at a professional entry level in their chosen field(s);</p>	
Modern Tool Usage	<p>Students must demonstrate achievement of professional, entry-level competence in the major area of specialization, including significant technical mastery, capability to produce work and solve professional problems independently, and a coherent set of artistic/intellectual goals that are evident in their work.</p>	<p>An ability to use the appropriate techniques, skills and modern computing tools necessary for the practice of being a professional animator;</p> <p>Demonstrate functional competence with principles of visual organization, including the ability to work with visual elements in two and three dimensions; color theory and its applications; and drawing;</p>
Individual and Team Work	<p>Students must have the ability to form and defend value judgments about art and design and to communicate art/design ideas, concepts, and requirements to professionals and laypersons related to the practice of the major field. They are able to work collaboratively as appropriate to the area(s) of specialization;</p>	<p>An ability to work effectively in multi-disciplinary and multi-cultural teams;</p>

Graduate Attributes	National Association of Schools of Art and Design (NASAD) Student Outcomes (SOs)	CHED Graduate Outcomes (GOs)
Communication	Ability to collaborate and communicate with all members of teams at multiple stages of animation project development and in associated production processes (examples may include, but are not limited to, work with background artists, layout artists, title artists, lighters, riggers, production managers, writers, technicians, etc.);	An ability to effectively communicate orally and in writing using the English language;
Computing Professionalism and Ethics	Students must have the ability to form and defend value judgments about art and design and to communicate art/design ideas, concepts, and requirements to professionals and laypersons related to the practice of the major field. They are able to work collaboratively as appropriate to the area(s) of specialization;	An understanding of the effects and impact of entertainment of multimedia computing projects on nature and society, and of their social and ethical responsibilities;
		An ability to create or use modified artifacts in consideration of intellectual property rights of the author;
Life-long Learning	Become familiar with the historical achievements, current major issues, processes, and directions of their field(s);	An ability to engage in life-long learning and an acceptance of the need to keep current of the development in the field of animation;
Creativity	Students must demonstrate their competence by developing a body of work for evaluation in the major area of study. A senior project or final presentation in the major area is required; and	An ability to demonstrate original creative outputs;
		An ability to demonstrate innovativeness in their outputs; and
Service Orientation	Students must have the ability to form and defend value judgments about art and design and to communicate art/design ideas, concepts, and requirements to professionals and laypersons related to the practice of the major field. They are able to work collaboratively as	An ability to demonstrate client-centric services.

Graduate Attributes	National Association of Schools of Art and Design (NASAD) Student Outcomes (SOs)	CHED Graduate Outcomes (GOs)
	appropriate to the area(s) of specialization.	

VII. **Minimum Performance Indicators:**

Graduate Attributes	Minimum Performance Indicators
Knowledge for Solving Computing Problems	<ol style="list-style-type: none"> 1. Evaluate the appropriateness of ideas to situations where it is expected to be applied 2. Reach substantiated conclusions and recommendations using fundamental principles of mathematics, computing fundamentals, technical concepts and practices in the field of animation.
Problem Analysis	<ol style="list-style-type: none"> 1. Formulate literature necessary for the understanding of requirements and solutions 2. Research on related literature that will guide the gathering of data and the development of animation projects. 3. Differentiate and evaluate theories and approaches to complex problems within the practice of the animation profession.
Design / Development of Solutions	<ol style="list-style-type: none"> 1. Identify user needs and requirements based on a comprehensive gathering of data and information. 2. Analyze situations using appropriate models. 3. Analyze user needs and requirements to determine specific areas where computing solutions will be used. 4. Generate computing requirements and specifications considering multiple constraints. 5. Validate requirements against specifications for the selection and creation of digital animation systems.

Graduate Attributes	Minimum Performance Indicators
	<ol style="list-style-type: none"> 1. Design systems, components, or processes with resourcefulness, imagination, insight, originality, aesthetic judgment, enterprise and risk taking approach to meet specified user needs with appropriate consideration for public health and safety, cultural, societal, and environmental considerations. 2. Develop specifications to facilitate development and implementation of animation projects. 3. Develop and implement solutions from given specifications. 4. Formulate test cases that represents real world scenarios that will assess the fitness to purpose and level of satisfaction of user needs of the designed and developed systems, components or processes. 5. Recommend and introduce corrections (debug), improvements and modifications to existing solutions (systems, components or processes) to improve its appropriateness and effectiveness in addressing requirements. <ol style="list-style-type: none"> 1. Make design and implementation decisions considering the societal, health, safety, legal and cultural issues involved and the impact to these to such decisions. 2. Act upon the consequential social, moral, legal and professional responsibilities. <ol style="list-style-type: none"> 1. Propose innovations through a capstone project intended to improve performance of tasks. 2. Address questions related to the content of practice about digital animation and questions related to the process of practice.
Modern Tool Usage	<ol style="list-style-type: none"> 1. Evaluate techniques, methodologies, standards/frameworks, methods and tools for its appropriateness to digital animation projects to be developed considering its advantages and limitations. 2. Select, use and adapt appropriate techniques, methodologies, standards/frameworks, methods and tools to digital animation projects.
Individual and Team Work	<p><i>As a team member:</i></p> <ol style="list-style-type: none"> 1. Independently source necessary knowledge, assistance, skills and resources to complete tasks. 2. Perform tasks independently without the need for prodding. 3. Raise issues and concerns to the team in order to seek consensus resolutions. <p><i>As a leader of a team:</i></p>

Graduate Attributes	Minimum Performance Indicators
	<ol style="list-style-type: none"> 1. Set proper goals and timeline of activities to complete team objectives. 2. Allocate tasks according to team member capabilities. 3. Monitor task completion and performance of team members. 4. Manage resources needed by the team to achieve team goals. 5. Resolve and reduce conflicts within the team. <hr/> <ol style="list-style-type: none"> 1. Provide inputs for the proper allocation of resources, such as time and budget. 2. Explain IT project plan to key stakeholders. 3. Perform tasks according to set roles and responsibilities. 4. Provide expertise, assistance and support to team members to in the creation of an effective IT project plan.
Communication	<ol style="list-style-type: none"> 1. Interview clients to gather background information, situation, existing concerns and issues necessary to frame and achieve common understanding of problems to be addressed by computing solutions. 2. Write effective reports and documentations about the results of performing specific computing and professional tasks. 3. Comprehend reports and other documentations. 4. Write documentations (including design documentations) completely and comprehensively, with appropriate tone, correct grammar and construction, adapting to documentation standards, to communicate ideas, choices, assumptions, and consequences of decisions. 5. Develop effective presentation material that will enhance understanding of ideas being communicated. 6. Deliver presentations effectively and efficiently to various audience (computing community, society at large, and users) using English and Filipino as needed, with appropriate tone, correct grammar and construction. 7. Negotiate with one or more collaborators to advance an oral argument or articulate an approach to resolving issues. 8. Choose appropriate language suitable to the audience and respectful to the audience background and culture. 9. Provide clear instructions to team members.
Computing Professionalism and Ethics	<ol style="list-style-type: none"> 1. Consistently conform to the professional code of ethics, and professional norms governing the performance of computing activities. 2. Perform responsibilities and accept accountability of the consequences of not performing responsibilities as expected. 3. Develop and defend an approach most likely to address ethical issue productively.

Graduate Attributes	Minimum Performance Indicators
Life-long Learning	<ol style="list-style-type: none"> 1. Reflect on own abilities and skills to determine necessary development needs to reach level of expectations and aspirations as a computing professional. 2. Engage independently in developmental activities (like participating in professional organizations, attendance to seminars and training) as a result of recognizing the need to further and continuously develop one’s competencies as a computing professional.
Creativity	<ol style="list-style-type: none"> 1. Design and develop original and innovative works.
Service Orientation	<ol style="list-style-type: none"> 1. Design and develop digital animation projects taking into consideration client’s needs and priorities and goals.

COURSE DESCRIPTION:

First Year, First Semester

6COMPRO1L COMPUTER PROGRAMMING 1

This is an introductory course in programming which aims to develop skills and concepts that are essential to good programming practice and problem solving. It covers fundamental programming concepts of primitive data types, simple input/output, conditional statements, iterative structures and functions. This course serves as preparation for intermediate programming.

Course Credit 3

Pre-Requisite None

6EMC INTRODUCTION to ENTERTAINMENT and MULTIMEDIA COMPUTING

This course provides an overview of the Computing Industry and Computing Profession in Entertainment, and Multimedia applications; an understanding of ACM Requirements; an Appreciation of the history of computing; and Knowledge of the Key Components of Computer Systems (Organization and Architecture), Malware, Computer Security, Internet and Internet protocols, HTML4/ 5 and CSS that are in relationship to Entertainment and Multimedia Computing Industry.

Course Credit 3

Pre-Requisite None

First Year, Second Semester

6COMPRO2L COMPUTER PROGRAMMING 2

This course introduces students to problem solving using a general purpose programming language. The emphasis is to train students to design, implement, test, and debug programs intended to solve computing problems using basic data structures and standard libraries.

Course Credit 3

Pre-Requisite 6COMPRO1L

6DRAW1 FREEHAND AND DIGITAL DRAWING

The course introduces fundamental image development using traditional and modern (software-based) tools. Freehand drawing is one of the foundation in effective rendition of design for higher levels of multimedia development. It explores a comprehensive range of drawing methods and topics such as Morphological Analysis, still life drawing, light and shade principles and perspective drawing that serves as guiding principles for the heuristic development of design media.

Furthermore, in this course the students are introduced to color theory and color representation models used in preparing digital media assets. The course emphasizes the application of color theory and styling in producing eye catching images and videos.

Course Credit 3

Pre-Requisite NONE

Second Year, First Semester

6APPDEV APPLICATION DEVELOPMENT AND EMERGING TECHNOLOGIES

The course introduces mobile application development for the android platform. Android is a

software stack for mobile devices that includes an operating system, middleware and key applications. The android SDK provides the tools and APIs as necessary to begin developing applications on the Android platform using the Java programming language. Students will learn skills for creating and deploying Android applications, with particular emphasis on software engineering topics including software architecture, software process, usability and deployment.

Course Credit 3

Pre-Requisite 6COMPRO2L

6CWRITE CREATIVE WRITING AND STORYBOARDING FOR ANIMATION

This course presents the underlying principles and standards of script writing and screenwriting to students. Generally, it begins with an idea/concept of the story leading to the development of its timeline by following the well-known three act structure which includes the inciting incident, midpoint, climax, subplots and resolution. Furthermore, it contains the development of characters especially the main character, the conflict between characters/role players and the writing of the screenplay by following the proper script formatting. Scripts from movies (preferably from animated films), TV commercials, and computer games/applications, among others will also be tackled.

Course Credit 3

Pre-Requisite 6EMC, 1PURCOMM

6DRAW2 2D ANIMATION AND PRINCIPLES

The course introduces the standards and common practice for traditional animation, wherein students would know the core skills of animation in relation to drawing either on a traditional platform or digital. This course will tackle more on the side of the production process of animation involving cleanup and the in-between of frames for animation. Other drawing techniques in relation to the animation production process will also be covered in this course.

Course Credit 3

Pre-Requisite 6DRAW1

6DSLAGO DATA STRUCTURES AND ALGORITHMS

This course covers all the basics of programming in the C++ programming language as well as the fundamental concepts and techniques used in object-oriented programming. The course starts with some universal basics, without relying on object concepts, and gradually extends to the advanced issues the student will encounter when using the objective approach.

Course Credit 3

Pre-Requisite 6COMRO2L

6UHCI USABILITY, HCI, AND USER INTERFACE DESIGN

The course focuses on imparting to students the techniques in making software more intuitive to use and hence making it easy for target users to learn its fundamental functions and features. This course includes the principles of human computer interaction and user interface design techniques. This course also focuses primarily on the planning and designing and documentation towards the creation of interactive media products. It provides the principles of interactive media authoring particularly a simple interactive game. It incorporates Game Design Documentation where Goal, Specification, Play, Mechanics, Components, Asset and Background Design should be planned and documented

Course Credit 3

Pre-Requisite 6COMPRO2L

Second Year, Second Semester

63DANIMP 3D ANIMATION AND PRINCIPLES

This course introduces the basic 3D modelling tools and techniques in creating animations. Focus is on modeling, applying materials, texturing, lighting and animation effects. Students are expected to model objects using the three basic modeling toolsets and create scenes using the different animation techniques.

Course Credit 3

Pre-Requisite 6DRAW2

6ADV2D ADVANCED 2D ANIMATION (SCRIPTING FOR 2D)

This course builds on the principles of 2D animation. Advanced techniques in preparing 2D animation assets for use in various multimedia outputs and projects will be covered including automatic generation of 2D animation and assets through programming through scripting. Approaches for digital animation is also introduced top students in this course.

Course Credit 3

Pre-Requisite 6DRAW2

6GRAPH COMPUTER GRAPHICS PROGRAMMING

This course covers the fundamental concepts in creating graphical images on the computer. Computer graphics uses ideas from Art, Mathematics, and Computer Science to create images. Students will learn to create graphical images using the Open GL Application Programming Interface (API).

Course Credit 3

Pre-Requisite 6DSALGO

6INFOMAN INFORMATION MANAGEMENT

The course will provide the student with an understanding of the principles of Database Management Systems (DBMSs) successfully, one has to understand the concepts on which they are based. The aims of this course are to familiarize you with the basic concepts underlying a DBMS, show how they are realized in specific systems such as the SQL DBMS, give you some hands-on experience in using a DBMS.

Course Credit 3

Pre-Requisite 6DSALGO

6INTROGAME INTRO TO GAME DEVELOPMENT

The course gives an overview of the game development process from conception to production. It also discusses the history of game development here and abroad, and exposure to the positions, job responsibilities that each member of a game development team has along with the industry requirements for the creation of a game design document (GDD) and technical design document (TDD).

Course Credit 3

Pre-Requisite 6COMPRO2L, 6UHCI

Third Year, First Semester

6ADV3D ADVANCED 3D ANIMATION (SCRIPTING FOR 3D)

This course introduces and allows students to create new interfaces and behaviors in the 3D environment. For beginning programmers, this means custom shelf buttons and interface elements. This includes the development of procedural animation, including particle effects and crowd simulations

Course Credit 3

Pre-Requisite 63DANIMP

6DPP DESIGN AND PRODUCTION PROCESSES

This course covers the design and production process in the field of animation. It will cover how an animated film is built, including the many of the processes required to get an animated film is done from start to finish.

Course Credit 3

Pre-Requisite 6INTROGAME

6IVPRO IMAGE AND VIDEO PROCESSING

In this course, students learn the fundamental operations on images and videos. Image processing includes Euclidean geometry transformations, color corrections, image recovery techniques, compositing, segmentation, differencing and morphing, and alignments. Video processing includes audio-video splitting, synchronization, and video transformations.

Course Credit 3

Pre-Requisite 6DSALGO

6MODRIG MODELING AND RIGGING

In this course, students learn how to develop character assets in varied gradients of detail based on given concept arts. Students also learn the mechanics of rigging a model with skeleton and muscle structures which animators may move in an actual animation production. Students will learn the theory and proper placement of critical structures based on the animation quality required and timescale.

Course Credit 3

Pre-Requisite 63DANIMP

6SOUND AUDIO DESIGN AND SOUND ENGINEERING

Sound is a crucial element in film, video, animations, the web and any form of multimedia. The uses of sounds and the moving image in multimedia production are tackled herein. Core production skills of recording, digitizing, editing and manipulating of sound samples, musical acoustics, and digital sound theory are learned in this course. Students will be able to create, manipulate, engineer and orchestrate appropriate sounds and sound effects for a particular genre of theme.

Course Credit 3

Pre-Requisite NONE

Third Year, Second Semester

6ADVSOUND ADVANCED SOUND PRODUCTION

This course builds on the sound design and production subject. Advanced techniques in sound production including the use of custom developed software will be covered. Students will learn to solve technical sound production problems beyond the solutions offered by popular software.

Course Credit 3

Pre-Requisite 6SOUND

6COMREN COMPOSITING AND RENDERING

In this course, students learn the compositing techniques and efficient rendering methods using an appropriate 3D animation software suite/platform. Other concepts such as pass, plug-ins and other application of compositing and rendering are also tackled and explored in relation to industry practice as well.

Course Credit 3

Pre-Requisite 63DANIMP

6LFX LIGHTING AND EFFECTS

In this course, students learn the fundamentals of lighting controls and artificial visual effects as applied to 3D animation. Students experience a hands-on control of light and light sources using appropriate 3D animation suite. Proper and practical use of artificial effects to embellish portions of or all of a composited animated short is covered

Course Credit 3

Pre-Requisite 63DANIMP

6TMAP TEXTURE AND MAPPING

In this course, students learn how to develop texture maps and application techniques, in particular direct mapping and multi-texturing – light mapping and bump mapping. Texture filtering, aliasing reduction techniques such as bilinear interpolation and trilinear interpolation, clamping, warping are covered.

Course Credit 3

Pre-Requisite 63DANIMP

Fourth Year, First Semester

6ANIMCAP1 CAPSTONE FOR ANIMATION 1

This course enables the student to learn and understand the concepts of methods of research and application in information technology projects particularly in the field of Animation. The students are expected to undergo a research project proposal, document their work and submit and present the output by the end of the semester through a preliminary oral defense.

Course Credit 3

Pre-Requisite Graduating

6OJT ON-THE-JOB TRAINING

This course exposes students to a real workplace where they can explore and apply the theories and skills gained from school. This course also provides them additional knowledge, skills and experiences in preparation for a real life job after graduation.

Course Credit 9
Pre-Requisite *Graduating*

Fourth Year, Second Semester

6ANIMCAP2 CAPSTONE FOR ANIMATION 2

This course requires students to undergo final oral defense for their Capstone Project. A complete project or animated film and manuscript are required to be submitted and presented in accordance with the specified guidelines

Course Credit 3
Pre-Requisite 6ANIMCAP1

6ANIMPROD ANIMATION DESIGN AND PRODUCTION

In this course, students do collaborative work with each other to design and produce a short animation project given a complete storyboard to work on.

Course Credit 3
Pre-Requisite 6ANIMCAP1

EMC ELECTIVES

6ANIMPORTF DIGITAL ANIMATION PORTFOLIO

This course introduces students to the importance of compiling, assessing and appraising animation outputs to be used for marketability and referencing. It focuses on the design and execution of a professional portfolio that will represent the student's skills in animation. The course will also cover self-promotion, resumes and reel distribution. Students will also be exposed in other variations of animation in relation to the many different fields and industry of animation

Course Credit 3
Pre-Requisite 63DANIMP

6ENCREA ENTREPRENEURSHIP FOR THE CREATIVES

This course introduces students the creativity concepts in entrepreneurship and its importance. It also provides the innovations and methods in creative problem solving regarding entrepreneurial matters such as in advertising, marketing, etc. The course also introduces the key concepts and principles of entrepreneurship and in creation of business plan using multimedia approach.

Course Credit 3
Pre-Requisite 6INFOMAN

6FDIRECT FILM DIRECTING

The subject introduces the basics of film making with a focus directing. Topics such as story-telling and production management will also be highlighted. Here the students shall be able to learn the basics of blocking, framing and creating interesting sequences that would emphasize the story or concept of a certain material. From here, the aspect of directing may be inter-related with that of a creation of an original material or a re-interpretation of an existing material.

Course Credit 3
Pre-Requisite 6IVPRO

6PHOTOGRAPH PHOTOGRAPHY

This course in Fundamentals of Photography is designed to develop student skills in pixel based photographic design, post production and printing. The course is designed for any photographer just starting out. This includes instruction in camera operation, digital print processing, basic lighting concepts and composition on different genre of photography. Also topics and practical applications on Commercial photography are included.

Course Credit 3

Pre-Requisite 6DRAW1

6OOLAB OBJECT-ORIENTED PROGRAMMING LANGUAGE

This course explores an in-depth and extensive object-oriented problem solving approach applying in actual programs. It also focuses on object-oriented design used as a tool for building applications implemented in command-line and graphical user interface (GUI) environments. It will also incorporate logical classes, objects, methods, relationships and other processes with the design of software and applications. The course also introduces the basic concept and practices in creating event-driven programming.

Course Credit 3

Pre-Requisite 6COMPRO2L

6STOP STOPMOTION ANIMATION

The subject focuses on animating still objects other than clay material as the common medium. Other techniques and principles of animation are applied to further practice other alternatives in animating puppets. Techniques such as modeling, sculpting and character design are also applied to further enhance the quality, consistency, and accuracy of the output in stop motion animation

Course Credit 3

Pre-Requisite 62DANIMP

General Education Courses***First Year, First Semester*****2MATHWORLD MATHEMATICS IN THE MODERN WORLD**

This course deals with nature of mathematics, appreciation of its practical, intellectual, and aesthetic dimensions, and application of mathematical tools in daily life.

The course begins with an introduction to the nature of mathematics as an exploration of patterns (in nature and the environment) and as an application of inductive and deductive reasoning. By exploring these topics, students are encouraged to go beyond the typical understanding of mathematics as merely a set of formulas but as a source of aesthetics in patterns of nature, for example, and a rich language in itself (and of science) governed by logic and reasoning.

The course then proceeds to survey ways in which mathematics provides a tool for understanding and dealing with various aspects of present-day living, such as managing personal finances, making social choices, appreciating geometric designs, understanding codes used in data transmission and security, and dividing limited resources fairly. These aspects will provide opportunities for actually doing mathematics in a broad range of exercises that bring out the various dimensions of

mathematics as a way of knowing, and test the students' understanding and capacity. (CMO No, 20, series of 2013)

Course Credit 3

Pre-Requisite NONE

4FYE1 BIG HISTORY: BIG BANG TO THE FUTURE

Big History is an interdisciplinary course that deals with the students' journey through time and space with the Catholic intellectual tradition as an integral component of the course. It describes Big History in the context of God's continuing work of creation. It discusses the first moments of the universe and the formation of stars and planets; the early life on earth and the development of human civilization and consciousness. Included in the course is the rise of humankind until the peering over the threshold of the present and into future.

Course Credit 3

Pre-Requisite NONE

7PE1 PHYSICAL EDUCATION 1

The course deals with the concept of Physical Education with emphasis on the components of Physical fitness and phases of gymnastics. It also includes the level of aerobic exercise and forms of movement education.

Course Credit 3

Pre-Requisite NONE

9STS SCIENCE, TECHNOLOGY AND SOCIETY

The course deals with interactions between science and technology and social, cultural, political, and economic contexts that shape and are shaped by them. CMO No. 20, series of 2013)

This interdisciplinary course engages students to confront the realities brought about by science and technology in society. Such realities pervade the personal, the public, and the global aspects of our living and are integral to human development. Scientific knowledge and technological development happen in the context of society with all its socio-political, cultural, economic, and philosophical underpinnings at play. This course seeks to instill reflective knowledge in the students that they are able to live the good life and display ethical decision making in the face of scientific and technological advancement.

This course includes mandatory topics on climate change and environmental awareness.

Course Credit 3

Pre-Requisite NONE

THEOLOGY101 THEOLOGICAL FOUNDATIONS: JUDEO-CHRISTIAN TRADITION AND SACRED SCRIPTURES

This foundational course in theology is designed to equip the students with the basic knowledge in the study of Judeo-Christian Tradition and Sacred Scriptures based on the Second Vatican Council, which are fundamental foundations in the Catholic Faith. The subject is geared towards a deeper understanding and appreciation of Catholic Faith that is socially and contemporarily relevant.

Course Credit 3

Pre-Requisite NONE

CWTS1 **CIVIC WELFARE TRAINING SERVICES**

The Literacy Training Program I (LTS1) and Civic Welfare Training Program I (CWTS1) are two components of the university NSTP Program that aims to prepare students for NSTP II or application phase by providing them the basic concepts and theories needed for doing community work. This involves introduction on concepts on self in relation to community and basics of community development theories, practices and processes. As part of the process, students are introduced to concepts on basic data gathering as a tool for community diagnosis and project management in preparation for project implementation. For LTS, same concepts are taught, additional inputs are given on the learning continuum, how to prepare lesson plan and conduct tutorials. Literacy Training Service II (LTSII) students conducts tutorials on either numeracy or reading, assist in construction of visual aids/instructional aids, setting of reading room and other related activities

Course Credit 3

Pre-Requisite NONE

First Year, Second Semester

1PURPCOM **PURPOSIVE COMMUNICATION**

The five skills of communication (listening, speaking, reading, writing and viewing) are studied and simulated in advanced academic settings. The purpose of these combined activities is to enable students to practice strategies of communication with a clear purpose and audience in mind, guided by the criteria of effective communication and the appropriate language.

Further, the description highlights conversing intelligently, reporting on group work and/or assignments, writing and delivering a formal speech, writing minutes of the meetings and similar documents, preparing a research or technical paper, and making audio-visual or web-based presentations.

At the end of the course, students should be able to listen, comprehend, critique and respond to live or recorded conversations, speak in public with confidence, explain extended texts in their own words using examples and other aids to bolster their explanation, while texts ranging from a simple report to a full-length technical or research paper and prepare an audio visual or web-based presentation on an assigned topic.

Course Credit 3

Pre-Requisite NONE

4ARTAPP **ART APPRECIATION**

Art Appreciation is a three-unit course that develops students' ability to appreciate, analyze, and critique works of art. Through interdisciplinary and multimodal approaches, this course equips students with a broad knowledge of the practical, historical, philosophical and social relevance of the arts in order to hone students' ability to articulate their understanding of the arts. The course also develops students' competency in researching and curating art as well as conceptualizing, mounting, and evaluating art productions. The course aims to develop students' genuine appreciation for Philippine arts by providing them opportunities to explore the diversity and richness and their rootedness in Filipino culture.

Course Credit 3
Pre-Requisite NONE

4CONWORLD THE CONTEMPORARY WORLD

This course introduces students to the contemporary world by examining the multifaceted phenomenon of globalization. Using the various disciplines of the social sciences, it examines the economic, social, political, technological and other transformations that have created an increasing awareness of the interconnectedness of peoples and places around the globe. To this end, the course provides an overview of various debates in global governance, development and sustainability. Beyond exposing the student to the world outside the Philippines, it seeks to inculcate a sense of global citizenship and global ethical responsibility.

This course includes mandatory topics on population education in the context of population and demography.

Course Credit 3
Pre-Requisite NONE

4FYE2 BIG HISTORY: THROUGH THE LENS OF BIG HISTORY

This is an interdisciplinary course that explores the theories, concepts and approaches of various disciplines through the lens of Big History. Students grasp an appreciation of the disciplines utilizing Big History as a framework.

Course Credit 3
Pre-Requisite 4FYE1

7PE2 PHYSICAL EDUCATION 2

The course deals with the fundamental steps in folk dance which includes the progressive free hand movement and steps for self-expression as learning process. The course also includes fundamental Rhythm. Rhythmic interpretation, Modern dance and ballroom dances.

Course Credit 3
Pre-Requisite 7PE1

THEOLOGICAL102 SPECIAL ISSUES IN CATHOLIC THEOLOGY

This course is designed to address special issues that confront college students today in relation to their faith as Christians in discerning the *Signs of the Times*. It explores variety of moral issues that impact the individual, the family, and the community. The course enables the students to clarify their values and eventually pursue objective moral values amidst the issues that they meet head-on.

Course Credit 3
Pre-Requisite THEOLOGY101

CWTS2 CIVIC WELFARE TRAINING SERVICES 2

Civic Welfare Training Program II (CWTSII) involves the implementation of identified project based on community diagnosis such as mural painting, set up library, advocacy/seminar on health, child rights, waste management, disaster management and other issues, facility improvement, sport among others.

Course Credit 3
Pre-Requisite CWTS1

Second Year, First Semester

4READPHILHIS READINGS IN PHILIPPINE HISTORY

The course analyzes Philippine history from multiple perspectives through the lens of selected primary sources coming from various disciplines and of different genres. Students are given opportunities to analyze the author's background and main arguments, compare different points of view, identify biases and examine the evidences presented in the document. The discussions will tackle traditional topics in history and other interdisciplinary themes that will deepen and broaden their understanding of Philippine political, economic, cultural, social, scientific and religious history. Priority is given to primary materials that could help students develop their analytical and communication skills. The end goal is to develop the historical and critical consciousness of the students so that they will become versatile, articulate broad-minded, morally upright and responsible citizens.

Course Credit 3

Pre-Requisite NONE

7PE3 PHYSICAL EDUCATION 3

The course deals with the origin and development of the games/sports, its description, rules and terminologies. The course consist of skill practices and fundamental movements for individual and dual games like swimming, bowling, track and field, badminton, arnis, tennis and taekwondo in preparation for class competition, thus, developing students' potential.

Course Credit 3

Pre-Requisite 7PE2

Second Year, Second Semester

4ETHICS ETHICS

Ethics deals with principles of ethical behavior in modern society at the level of the person, society, and in interaction with the environment and other shared resources. (CMO 20 s 2013). Morality pertains to the standards of right and wrong that an individual originally picks up from the community. The course discusses the context and principles of ethical behavior in modern society at the level of individual, society, and in interaction with the environment and other shared resources. The course also teaches students to make moral decisions by using dominant moral frameworks and by applying a seven-step moral reasoning model to analyze and solve moral dilemmas. The course is organized according to the three (3) main elements of the moral experience: (a) agent, including context — cultural, communal, and environmental; (b) the act, and (c) reason or framework (for the act).

Course Credit 3

Pre-Requisite NONE

7PE4 PHYSICAL EDUCATION 4

The course deals with the history and description of basketball, volleyball and its terminologies, duties and functions of the officials with simplified rules of the game. The major portion of the course consists of the warm-up, lead-up games, drills, fundamental skills and skills test in preparation for group competition.

Course Credit 3

Pre-Requisite 7PE3

THEOLOGY103 CHRSTIAN SIPIRUTALITY IN THE CONTEMPORARY WORLD

This course engages students to reflect on their personal and religious experiences to discern the call of transformation and integration vis-à-vis Christian tradition and world realities through the development of the basic skill of theological reflection. With Jesus Christ as model, the students are invited to explore the relevance of their personal spiritual journey and reflect deeply on the ways on how they can live a socially relevant Christian spiritual life.

Course Credit 3

Pre-Requisite THEOLOGY102

Fourth Year, Second Semester

4BLIBERALART BLENDED LIBERAL-ARTS BASED PROFESSIONAL EDUCATION

This course explores the application of critical thinking in the profession particularly in the area of communication, reading and argumentation. Topics include critical thought in the profession, blending critical thinking and culture, persuasive arguments and responsible reasoning.

Course Credit 3

Pre-Requisite NONE

4RIZAL LIFE AND WORKS OF RIZAL

As mandated by Republic Act 1425, this course covers the life and works of the country's national hero, Jose Rizal. Among the topics covered are Rizal's biography and his writing, particularly the novels Noli Me Tangere and El Filibusterismo, some of his essays, and various correspondences .

Course Credit 3

Pre-Requisite NONE

4UNDERSELF UNDERSTANDING THE SELF

This course is intended to facilitate the exploration of the issues and concerns regarding self and identity to arrive at a better understanding of one's self. It strives to meet this goal by stressing the integration of the personal with the academic— contextualizing matters discussed in the classroom and in the everyday experiences of students—making for better learning, generating a new appreciation for the learning process, and developing a more critical and reflective attitude while enabling them to manage and improve their selves to attain a better quality of life.

Course Credit 3

Pre-Requisite NONE