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| **ANIMATION, 10.0200.60** |
| **1.0** | **ANALYZE THE MEDIA INDUSTRY, ITS BUSINESS PRACTICES, AND ITS ROLE IN THE ECONOMY** |
| 1.1 | Research the role of the media industry and its impact on society and the economy |
| 1.2 | Investigate the history and evolution of media and emerging technology |
| 1.3 | Identify factors that contribute to the success of media businesses and freelance/contract providers |
| 1.4 | Examine the impact of social media on the media industry |
| 1.5 | Identify key factors to be considered in launching a media business |
| 1.6 | Examine how the relationship among marketing, sales, and production affects profitability |
| 1.7 | Describe how production processes and cycles affect media businesses |
| 1.8 | Determine costing projections for various media objectives and/or functions |
| 1.9 | Describe how diversity (cultural, ethnic, multigenerational) and ethics affect the selection of projects and programs |
| 1.10 | Describe how ethics, hype, and content influence media products |
| 1.11 | Identify industry safety standards |
| 1.12 | Describe multiple distribution platforms that are in compliance with the American Disability Act |
| **2.0** | **INVESTIGATE INTELLECTUAL PROPERTY LAW AND RIGHTS MANAGEMENT** |
| 2.1 | Identify current legal issues in media professions |
| 2.2 | Explain plagiarism and its effects in business |
| 2.3 | Define the establishment of a copyright |
| 2.4 | Discuss rights and implications of copyright law |
| 2.5 | Examine intellectual property law and its ramifications |
| 2.6 | Explain the establishment of a trade name and trademark |
| 2.7 | Explain fair use in relation to legal and regulatory considerations |

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| **3.0** | **DEMONSTRATE VERBAL AND NONVERBAL COMMUNICATION SKILLS REQUIRED BY THE MEDIA INDUSTRY** |
| 3.1 | Use industry terminology appropriately in the work environment |
| 3.2 | Use effective communication techniques to obtain accurate information from sources, audiences, and clients |
| 3.3 | Practice verbal and nonverbal communication skills with people of diverse cultures, generations, and situations |
| 3.4 | Practice active listening skills appropriate to the medium/media |
| **4.0** | **DEMONSTRATE WRITTEN COMMUNICATION SKILLS REQUIRED BY THE MEDIA INDUSTRY** |
| 4.1 | Use professional etiquette for web-, email-, and social-media-based communications |
| 4.2 | Conduct formal and informal research to collect information |
| 4.3 | Verify the accuracy of information |
| 4.4 | Verify the authority of sources |
| 4.5 | Identify the purpose, content, and audience for communications |
| 4.6 | Select the appropriate medium/media for distribution of communications |
| 4.7 | Format communications for the purpose, audience, and medium/media |
| 4.8 | Use editing skills when reviewing communications |
| 4.9 | Use proofing skills and check the spelling when reviewing communications |
| **5.0** | **UTILIZE COMPUTER APPLICATIONS TO MANAGE MEDIA** |
| 5.1 | Use appropriate electronic publishing software and output devices |
| 5.2 | Apply essential commands and knowledge of computer operating systems |
| 5.3 | Apply computer file management techniques |
| 5.4 | Use the Internet for file transfer |
| 5.5 | Select the format for digital delivery |
| 5.6 | Use and care for equipment and related accessories |
| 5.7 | Describe the functionality of the internet, intranet, and extranet in the media environment |
| 5.8 | Explain methods of protecting a computer against computer threats |
| **6.0** | **APPLY KNOWLEDGE OF DATA CAPTURE AND MANIPULATION** |
| 6.1 | Identify software that supports data capture for media devices (i.e., digital camera, video input device, graphics tablet, graphics expansion boards) |
| 6.2 | Select appropriate resolutions for data capture |
| 6.3 | Capture and transfer still image, audio, and moving image content |
| **7.0** | **ENGAGE IN PRE-PRODUCTION/PLANNING PHASE OF PRODUCT CREATION IN ANIMATION** |
| 7.1 | Apply drawing skills (i.e., shading, perspective, and gesture drawing) |
| 7.2 | Apply the elements and principles of design to all sketches, drawings, and projects |
| 7.3 | Use the rule of thirds to create visually pleasing composition |
| 7.4 | Apply basic anatomy to figure drawing and character design |
| 7.5 | Create detailed concept art illustrating content ideas for a project |
| 7.6 | Create detailed comprehensive storyboards for a project |
| 7.7 | Explain the purpose of creating image representation (thumbnails and/or silhouette sketches) for each project |
| 7.8 | Explain the purpose of creating an animatic for a project |
| **8.0** | **IMPLEMENT PLAN(S) FOR ACQUIRING OR CREATING A PRODUCT IN ACCORDANCE WITH PRODUCTION PHASE TASKS IN ANIMATION** |
| 8.1 | Apply the principles of animation to all animated projects |
| 8.2 | Explain the animation pipeline and its stages |
| 8.3 | Create a folder hierarchy and organize project files within folders using consistent naming conventions (e.g., naming layers in Photoshop and naming objects in a 3D program) |
| 8.4 | Use mathematical calculations to determine frame rates (e.g., animation, film, and video) |
| 8.5 | Apply an understanding of 3D image creation in terms of modeling (e.g., polygons, NURBS/hyper-nurbs, subdivision surfaces) |
| 8.6 | Differentiate among types of surface shaders |
| 8.7 | Create procedural textures utilizing map channels and Paint/photo reference textures in Photoshop |
| 8.8 | Map textures on polygon objects using planar, cylindrical, spherical mapping, and the UV texture editor |
| 8.9 | Differentiate among types of lights and their attributes |
| 8.10 | Explain the three lights in the three-point lighting system |
| 8.11 | Use white and colored lights and shadows to create mood in a scene |
| 8.12 | Use graph editor/curve editor software to manipulate keyframe interpolation |
| 8.13 | Create animation using motion paths |
| 8.14 | Create SDKs/action constraints |
| 8.15 | Explain the basics of and uses for FK/IK (forward kinematics and inverse kinematics) |
| 8.16 | Identify and explain camera angles and moves; use a camera to capture an image from a 3D scene utilizing positioning and focal length to make a nice composition |
| 8.17 | Identify rendering systems and explain their use; render still images in various sizes, qualities, and file types |
| 8.18 | Explain gates and safe frames and their uses |
| 8.19 | Render an animated sequence |
| 8.20 | Use ray tracing to create reflections |
| 8.21 | Use dynamic systems to simulate fire, fluid, and smoke |
| **9.0** | **PERFORM TASKS IN POST-PRODUCTION PHASE OF PRODUCT REFINEMENT IN ANIMATION** |
| 9.1 | Animate layers of footage in a compositing program |
| 9.2 | Use and animate compositing effects |
| 9.3 | Use masks, track mattes, and keying techniques |
| 9.4 | Track motion and apply the data to footage |
| 9.5 | Combine a sound file and an image sequence into one movie file |

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| **10.0** | **DELIVER/DISTRIBUTE PRODUCT(S) USING VARIOUS MEDIA IN ACCORDANCE WITH CONSUMER EXPECTATIONS IN ANIMATION** |
| 10.1 | Identify various file formats, their advantages and disadvantages |
| 10.2 | Select video or audio codecs for various formats [hard-drives, CDs, DVDs, blu ray, and the Internet (streaming and gaming engines)] |
| 10.3 | Explore the Internet as a delivery system and the use of security parameters (e.g., Vimeo or YouTube as a video-sharing tool for distribution) |
| **11.0** | **MONITOR QUALITY ASSURANCE OF PRODUCT CREATION CONCURRENT WITH ALL PHASES OF PRODUCTION IN ANIMATION** |
| 11.1 | Critique an animation project for craftsmanship, content, and tone |
| 11.2 | Review a project workflow after completion and determine areas for improvement |
| 11.3 | Identify factors, including personal trait, that contribute to the success of small production houses for animation, film, and audio |
| **12.0** | **PRESENT PRODUCT(S) TO SELECTED AUDIENCE(S) USING ANIMATION** |
| 12.1 | Structure and develop a demo reel of an appropriate length |
| 12.2 | Explore methods of distributing portfolios and demo reels for the purpose of work and employment |
| 12.3 | Research a company as a potential employee and develop a cover letter |
| 12.4 | Explore interviewing techniques for professional placement |