Contents

What are Occupational Standards(OS)?

➢ OS describe what individuals need to do, know and understand in order to carry out a particular job role or function

➢ OS are performance standards that individuals must achieve when carrying out functions in the workplace, together with specifications of the underpinning knowledge and understanding

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Introduction

Qualifications Pack- Modeller

SECTOR: MEDIA AND ENTERTAINMENT

SUB-SECTOR: Animation, Gaming

OCCUPATION: Asset Creation

REFERENCE ID: MES/ Q 2501

Modeller in the Media & Entertainment Industry is also known as a CG Modeller

Brief Job Description: Individuals at this job are responsible for creating computer generated models (characters, machines, props, objects etc.) for animation

Personal Attributes: This job requires the individual to create various types of models using modelling software and tools such as Maya, 3D Studio Max etc. The individual must also have a good understanding of the human anatomy, skeleton structure, joints, facial muscles, expressions etc. The individual must be well-versed with the principles and techniques of 3D modelling and animation.

Qualifications Pack Code	MES/ Q 2501		
Job Role	**Modeller** This job role is applicable in both national and international scenarios		
Credits(NVEQF/NVQF/NSQF) [*OPTIONAL*]	TBD	**Version number**	**01**
Sector	**Media and Entertainment**	**Drafted on**	**16/07/13**
Sub-sector	**Animation, Gaming**	**Last reviewed on**	**30/07/13**
Occupation	**Asset Creation**	**Next review date**	**08/08/13**

Job Details (side label)

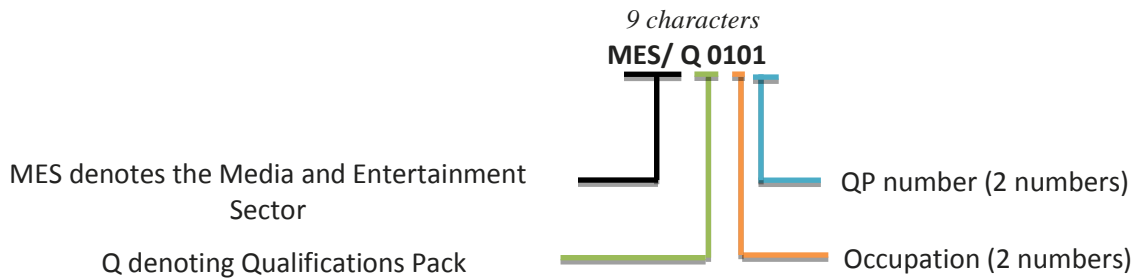| Job Role	Modeller
Role Description	Create computer generated rigs for movement of models
NVEQF/NVQF level	4
Minimum Educational Qualifications	Class X and above
Maximum Educational Qualifications	-
Training (Suggested but not mandatory)	3D software such as Maya, 3D Studio Max etc.
Experience	0-1 years Trainee Modeller/ Junior Modeller 1+ years Modeller
Applicable National Occupational Standards (NOS)	**Compulsory:** 1. MES / N 2501 (Prepare computer generated models)
Performance Criteria	As described in the relevant OS units

Keywords /Terms	Description
Budget	Budget is an estimate of the total cost of production that may include a break-up of cost components
Composition	Composition is the positioning of the character with respect to the background and camera
Clean-up	Refining the interim/rough rough animation
Creative Brief	Creative brief is a document that captures the key questions that serve as a guide for the production including the vision, objective of the project, target audience, timelines, budgets, milestones, stakeholders etc.
Key Frame	Key Frames are the key poses, usually the start and end poses for a particular animation sequence
Modelling	Modelling is the process of creating three-dimensional models for animation using a specialised software application.
Rendering	Rendering is the process of converting three-dimensional models into two-dimensional images with 3D effects
Rigging	Rigging is the process of adding joints to a static three-dimensional model to aid movement during posing
Timelines	Timelines is a listing of dates by which the production milestones/stages need to be completed
Sector	Sector is a conglomeration of different business operations having similar businesses and interests. It may also be defined as a distinct subset of the economy whose components share similar characteristics and interests.
Sub-sector	Sub-sector is derived from a further breakdown based on the characteristics and interests of its components.
Vertical	Vertical may exist within a sub-sector representing different domain areas or the client industries served by the industry.
Occupation	Occupation is a set of job roles, which perform similar/related set of functions in an industry
Function	Function is an activity necessary for achieving the key purpose of the sector, occupation, or area of work, which can be carried out by a person or a group of persons. Functions are identified through functional analysis and form the basis of OS.
Sub-functions	Sub-functions are sub-activities essential to fulfill the achieving the objectives of the function.
Job role	Job role defines a unique set of functions that together form a unique employment opportunity in an organization.
Occupational Standards (OS)	OS specify the standards of performance an individual must achieve when carrying out a function in the workplace, together with the knowledge and understanding they need to meet that standard consistently. Occupational Standards are applicable both in the Indian and global contexts.
Performance Criteria	Performance Criteria are statements that together specify the standard of performance required when carrying out a task
National Occupational Standards (NOS)	NOS are Occupational Standards which apply uniquely in the Indian context.
Qualifications PackCode	Qualifications Pack Code is a unique reference code that identifies a qualifications pack.
Qualifications Pack(QP)	Qualifications Pack comprises the set of OS, together with the educational, training and other criteria required to perform a job role. A Qualifications Pack is assigned a unique qualification pack code.

Definitions

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Unit Code	Unit Code is a unique identifier for an Occupational Standard, which is denoted by an 'N'.
Unit Title	Unit Title gives a clear overall statement about what the incumbent should be able to do.
Description	Description gives a short summary of the unit content. This would be helpful to anyone searching on a database to verify that this is the appropriate OS they are looking for.
Scope	Scope is the set of statements specifying the range of variables that an individual may have to deal with in carrying out the function which have a critical impact on the quality of performance required.
Knowledge and Understanding	Knowledge and Understanding are statements which together specify the technical, generic, professional and organizational specific knowledge that an individual needs in order to perform to the required standard.
Organizational Context	Organizational Context includes the way the organization is structured and how it operates, including the extent of operative knowledge managers have of their relevant areas of responsibility.
Technical Knowledge	Technical Knowledge is the specific knowledge needed to accomplish specific designated responsibilities.
Core Skills/Generic Skills	Core Skills or Generic Skills are a group of skills that are key to learning and working in today's world. These skills are typically needed in any work environment. In the context of the OS , these include communication related skills that are applicable to most job roles.

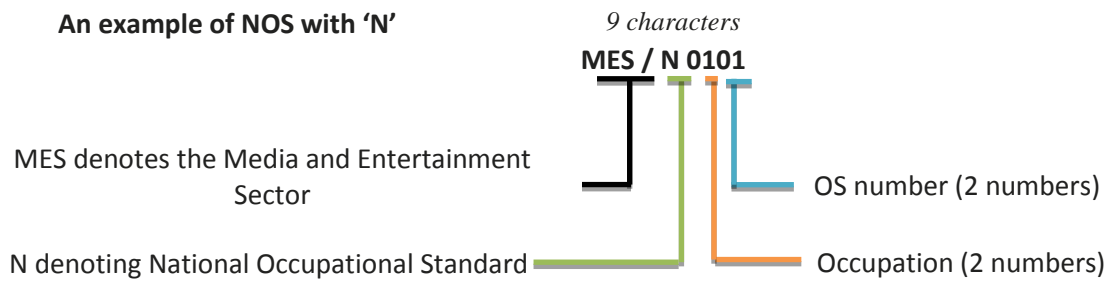| Keywords /Terms	Description
NOS	National Occupational Standard(s)
QP	Qualifications Pack
NVEQF	National Vocational Education Qualifications Framework
NVQF	National Vocational Qualifications Framework
CG	Computer Generated

Acronyms

Annexure

Nomenclature for QP and NOS

Qualifications Pack

9 characters

MES/ Q 0101

MES denotes the Media and Entertainment Sector

Q denoting Qualifications Pack

QP number (2 numbers)

Occupation (2 numbers)

Occupational Standard

An example of NOS with 'N'

9 characters

MES / N 0101

MES denotes the Media and Entertainment Sector

N denoting National Occupational Standard

OS number (2 numbers)

Occupation (2 numbers)

The following acronyms/codes have been used in the nomenclature above:

Sub-sector	Range of Occupation numbers
…	…

Sequence	Description	Example
Three letters	Media and Entertainment	MES
Slash	/	/
Next letter	Whether **Q**P or **N**OS	Q
Next two numbers	Rigger, Modeller, Texturing	25
Next two numbers	QP number	01

National Occupational Standard
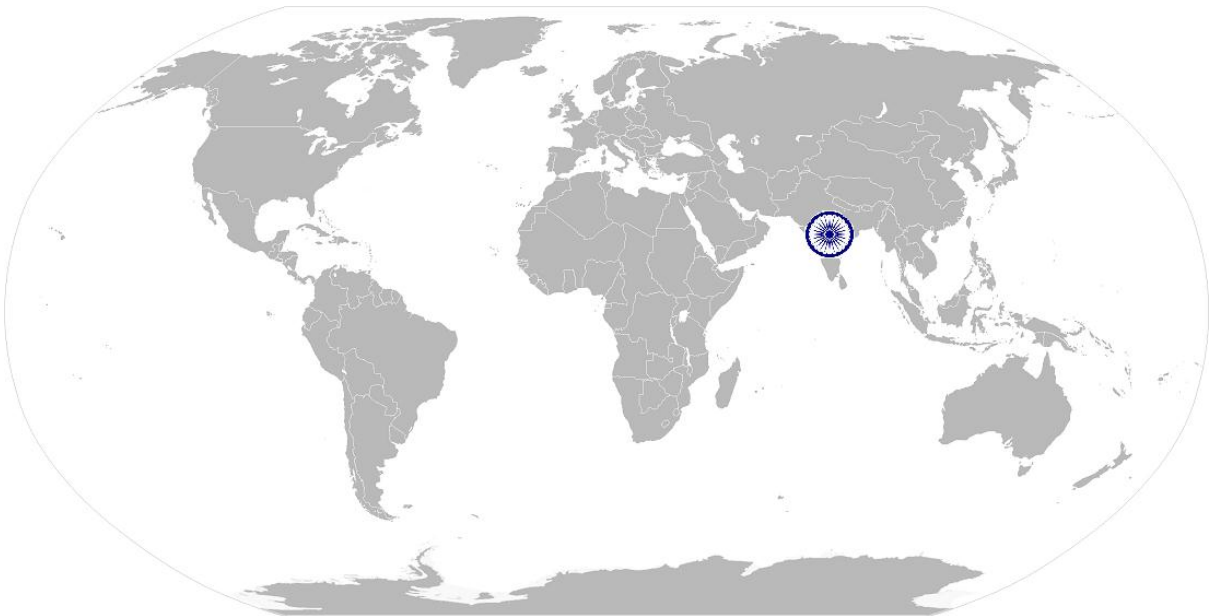
Overview

This unit is about creating computer generated models for the animation process

National Occupational Standard

Unit Code	**MES/ N 2501**
Unit Title (Task)	**Prepare computer generated models**
Description	This OS unit is about creating computer generated models for the animation process

Scope	This unit/task covers the following:
	
	• Preparation of computer generated 3D models, which would include:
	   • Characters
	   • Machines
	   • Sets and Props
	   • Game modeling
	   • Objects
	   • Locations/ Background elements such as Environment, landscapes, interiors etc.
	   • Blend shapes

Performance Criteria (PC) w.r.t. the Scope	
Element	**Performance Criteria**
	To be competent, the user/individual on the job must be able to: PC1. Prepare digital models according to the design brief (appearance, complexion, dressing, moods, personalities, expressions etc.), requirements (number, types, duplicates etc.) and specifications (dimensions, operating parameters etc.) PC2. Create prototypes/pilots for testing PC3. Understand the final display medium and adapt / suggest the model for its polycounts, mesh complexity, movement capability etc. PC4. Ensure that the models will be able to perform properly once animated, are uniform and consistent and are delivered in appropriate formats that can be used by others

Knowledge and Understanding (K)	
A. Organizational Context (Knowledge of the company / organization and its processes)	The user/individual on the job needs to know and understand: KA1. The creative vision and elements of production KA2. The project pipeline/schedule and timelines KA3. The intended purpose/ end-use of the models that need to be created
B. Technical Knowledge	The user/individual on the job needs to know and understand: KB1. Principles of 3D modeling and animation including concepts like polygons,

nurbs, and sub surface modeling etc.

KB2. Human anatomy, skeleton structure, joints, facial muscles etc.

KB3. Human mannerisms, emotions, behavior, facial expressions etc.

KB4. Basics of rigging to help build models with the minimum necessary spline, nurbs and polygons

KB5. Techniques and workflow of UV mapping

KB6. Principles of engineering

KB7. Physics of motion, resistance and volume

KB8. Form, scale and proportion of various models

KB9. The techniques of sculpting (added advantage)

KB10. Drawing and illustration techniques

KB11. How to create various types of models (organic, non-organic, simple, complex)

KB12. How to use modelling software and tools such as Maya, 3D Studio Max, Blender, Mud-Box, Zbrush, Mari etc.

KB13. How to design and develop models consistent with the creative look of the production and in accordance to the script and design brief

KB14. How to build models with the necessary detailing and as per the camera distance

KB15. The sources for research and reference material

KB16. How to design models to suit the final use. E.g. a model created for feature films is different from model created for television series and it is further different from model created for a game or e-Learning module

KB17. How to Test models (through the basic phonemes test, basic expression test, simulation tests, grayscale turnarounds) to ensure that they meet the design specification and   production requirements

KB18. How to test characters, props and environments to ensure they appear correctly from all required camera positions and angles

KB19. How to optimise mesh as per production requirements

KB20. Applicable copyright norms and intellectual property rights

KB21. Applicable health and safety guidelines

Skills (S) (Optional)	
A. Core Skills/ Generic Skills	**Writing Skills**
	The user/individual on the job needs to know and understand how to: SA1. Document notes /draw illustrations to assist during the modelling process
	Reading Skills
	The user/individual on the job needs to know and understand how to: SA2. Read and understand the design brief and character pack SA3. Research links, videos, artwork etc. that can be used as references during the modelling process

	Oral Communication (Listening and Speaking skills)
	The user/individual on the job needs to know and understand how to:
	SA4. Understand the design brief and requirements from the Art Director and character designers
	SA5. Present the final character models to the Art Director and solicit feedback
B. Professional Skills	**Plan and Organize**
	The user/individual on the job needs to know and understand how to:
	SB1. Breakup the tasks required and estimate the time required for each task, so as to manage the allotted work and achieve it in given schedule
	Problem Solving
	The user/individual on the job needs to know and understand how to:
	SB2. Identify any creative problems that may arise during the production and find solutions to address them
	SB3. Handle technical issues such as pipeline concerns, optimizing efficiency of assets and asset integration

NOS Version Control

NOS Code	MES / N 2501		
Credits(NVEQF/NVQF/NSQF) [*OPTIONAL*]	TBD	**Version number**	01
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