

QUALIFICATIONS PACK - OCCUPATIONAL STANDARDS FOR GEMS & JEWELLERY INDUSTRY



Contents

1. Introduction and Contacts.....P1
2. Qualifications PackP2
3. OS Units.....P3
4. Glossary of Key Terms.....P21
5. Nomenclature of QP & NOS.....P23

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

Contact Us:
GJSCI, Mumbai

E-mail: coo@gjsci.org



Introduction

Qualifications Pack – Rubber Mould Maker

SECTOR: GEMS & JEWELLERY

SUB-SECTOR: Cast and Diamonds-Set Jewellery

OCCUPATION: Wax model making

REFERENCE ID: G&J/Q2603

ALIGNED TO: NCO-2004/8231.67

Rubber mould maker: The rubber mould maker produces rubber moulds of the master model for replicating it in the mass production of jewellery piece through the casting process. Precision is involved in the cutting of the mould with the model. It is a critical pre-casting job role in cast jewellery manufacturing.

Brief Job Description: The individual uses different types of rubber and works with vulcanising machine and various hand tools such as sterilised blade in order to create the mould.

Personal Attributes: The job requires the individual to have: attention to details; good eyesight; steady hands; ability to work in a process driven team and for long hours in sitting position. The individual must also be able to use problem solving skills in order to avert machine failures and hazards while handling hot rubber and sharp tools.

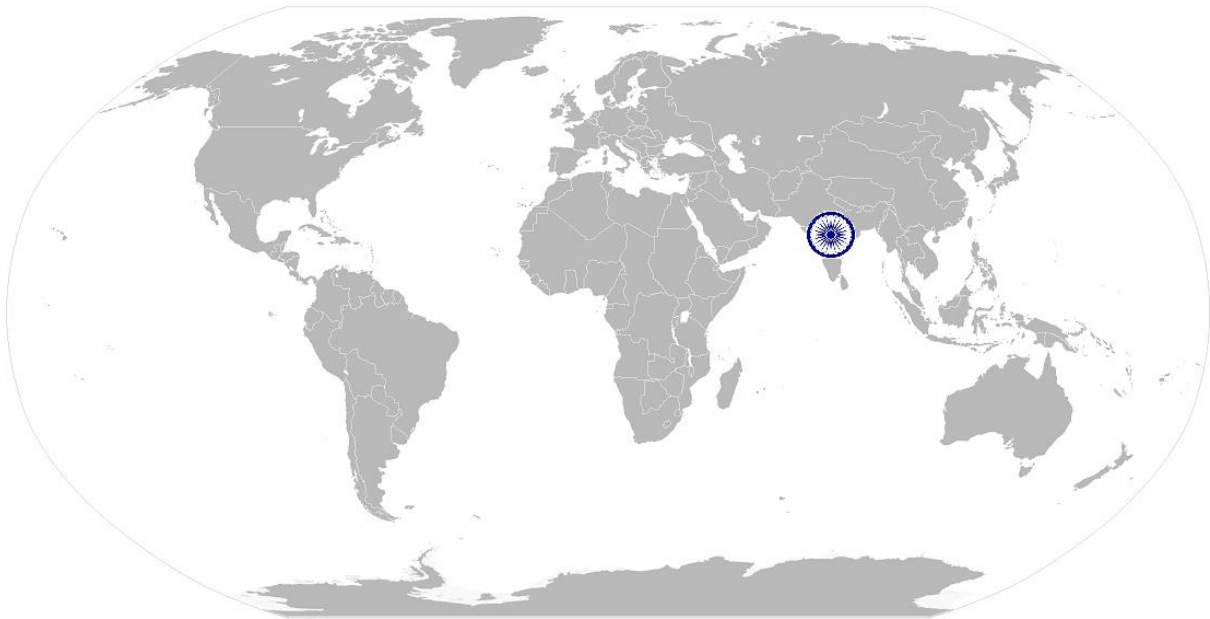
Job Details

Qualifications Pack Code	G&J/Q2603		
Job Role	Rubber mould maker		
Credits(NVEQF/NVQF/NSQF)	TBD	Version number	1.0
Sector	Gems & Jewellery	Drafted on	29/05/13
Sub-sector	Cast and Diamond-set Jewellery	Last reviewed on	30/07/13
Occupation	Wax model making	Next review date	15/07/15

Job Role	Rubber mould maker
Role Description	Producing rubber-mould from master model, to be used for further creating wax pieces for the mass production of the jewellery through casting process
NVEQF/NVQF level	4
Minimum Educational Qualifications	Preferably 10 th standard passed
Maximum Educational Qualifications	
Training	Computer operations
Experience	Not applicable
Applicable National Occupational Standards (NOS)	<p>Compulsory:</p> <ol style="list-style-type: none"> G&J/N2603 Produce the rubber mould G&J/N9901 Respect and maintain IPR G&J/N9902 Coordinate with others G&J/N9905 Maintain occupational health and safety <p>Optional: Not applicable</p>
Performance Criteria	As described in the relevant OS units



National Occupational Standard



Overview

This unit is about producing rubber mould from the master model of the jewellery piece, in order to use it for mass production of jewellery through casting process.

G&J/N2603

Produce the rubber mould

National Occupational Standard

Unit Code	G&J/N2603
Unit Title (Task)	Produce the rubber mould
Description	This OS unit is about produce rubber mould from the master model of the jewellery piece, in order to use it for mass production through casting process
Scope	<p>This unit/task covers the following:</p> <p>Receive the master jewellery model and consumables from supervisor</p> <ul style="list-style-type: none"> inspect master model for surface defects and assess the allowance for shrinkage select the type of rubber as per design specified by the product development department or job sheet <p>Produce rubber mould as per job sheet</p> <ul style="list-style-type: none"> prepare rubber mould using, say, Liquid Silicon Rubber or use readymade rubber as Liquacast Rubber for the mould. put the master model and additional sprue (if any) inside the required number of rubber layers and insert a nozzle for creating cavity, so that wax can flow easily at a later stage stack the rubber moulds between metal frames of vulcaniser set temperature and time in the vulcaniser as per operating procedure separate the metal frames of the vulcaniser and remove the moulds allow the rubber moulds to cool in water and dry with cloth put the master style number on each mould and date as per company's policy <p>Cut rubber mould as per master model design</p> <ul style="list-style-type: none"> hold rubber mould in the holder cut the rubber mould carefully from center using sterilised blade remove the master model cut extra linings on the inner side of mould such as diamond grooves, air lining or bottom lining for smooth flow of molten wax at a later stage <p>Return prepared rubber mould to supervisor</p> <ul style="list-style-type: none"> check the mould for defects and return to supervisor ensure timely delivery <p>Report problems related to:</p> <ul style="list-style-type: none"> damaged or unfinished master model rubber and tools shortage reasons for anticipated delays that may adversely affect delivery <p>Interact with superior or master model maker to:</p> <ul style="list-style-type: none"> receive instructions and materials from reporting supervisor discuss alignment and number of sprue required

G&J/N2603

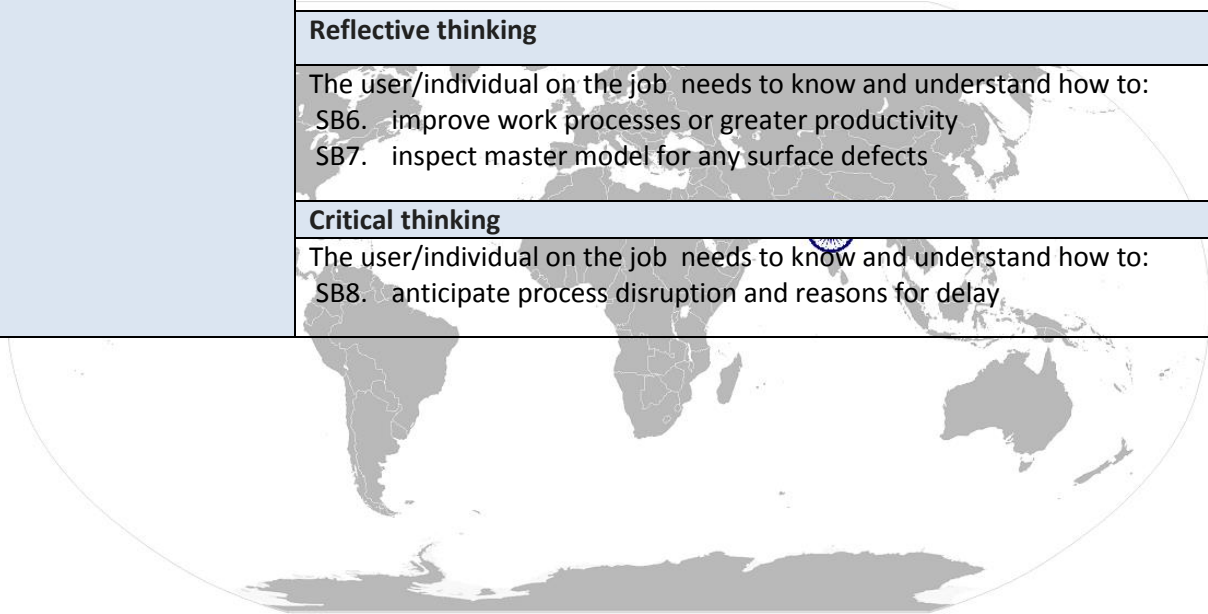
Produce the rubber mould

Performance Criteria(PC) w.r.t. the Scope	
Element	Performance Criteria
Rubber mould producing	To be competent, the user/individual on the job must be able to: PC1. select appropriate rubber for creating mould PC2. place the master model and additional sprue (if any) accurately inside rubber layers PC3. set temperature for mould making as per operating standard PC4. accurately prepare rubber moulds PC5. precisely cut rubber mould ensuring flow of molten wax in the next process
Productivity	To be competent, the user/individual on the job must be able to: PC6. timely deliver rubber mould to next process PC7. produce number of moulds per day as per target given PC8. ensure damage free output with minimal hazards
Quality of output	To be competent, the user/individual on the job must be able to: PC9. maintain allowance for shrinkage is made PC10. remove master model from hot rubber without damage PC11. produce quality okayed rubber mould and send with zero defects to next process
Knowledge and Understanding (K)	
A. Organizational Context	The user/individual on the job needs to know and understand: KA1. company's policies on: quality, incentives, delivery standards, safety and hazards, integrity and IPR, and personnel management KA2. importance of the individual's role in the workflow KA3. reporting structure
B. Technical Knowledge	The user/individual on the job needs to know and understand: KB1. different types of rubber and their properties, particularly, with respect to heat and pressure sensitivity KB2. uses of different qualities of wax and its properties in terms of shrinkage KB3. potential work hazards, particularly, when using vulcaniser, hot plates and sharp tools
Skills (S) [Optional]	
A. Core Skills/ Generic Skills	Basic reading and writing skills
	The user/ individual on the job needs to know and understand how to: SA1. read notes, designs and instructions on job sheet SA2. read company rules and compliance documents required to complete the work
	Geometry skills
	The user/individual on the job needs to know and understand how to: SA3. assess accuracy of alignment and measure symmetry

G&J/N2603

Produce the rubber mould

	Teamwork and multitasking
	The user/individual on the job needs to know and understand how to: SA4. share work load when multiple deliverables are required SA5. deliver the rubber mould to next work process on time
B. Professional Skills	Understanding rubber types
	The user/individual on the job needs to know and understand: SB1. rubber types and its properties SB2. temperature and pressure sensitivity of rubber
	Using tools and machines
	The user/individual on the job needs to know and understand how: SB3. to use the vulcaniser machine SB4. to use different cutting tools such as sterilised blades for different purposes SB5. to work in a safe environment, i.e., without injuries
	Reflective thinking
	The user/individual on the job needs to know and understand how to: SB6. improve work processes or greater productivity SB7. inspect master model for any surface defects
	Critical thinking
	The user/individual on the job needs to know and understand how to: SB8. anticipate process disruption and reasons for delay

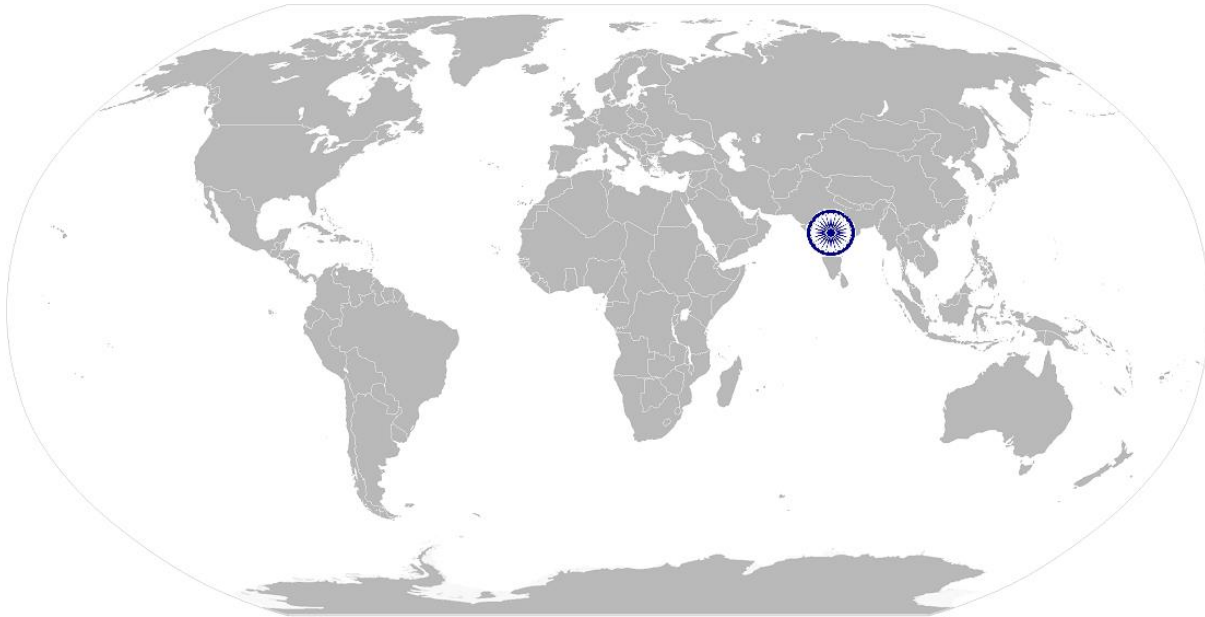


G&J/N2603

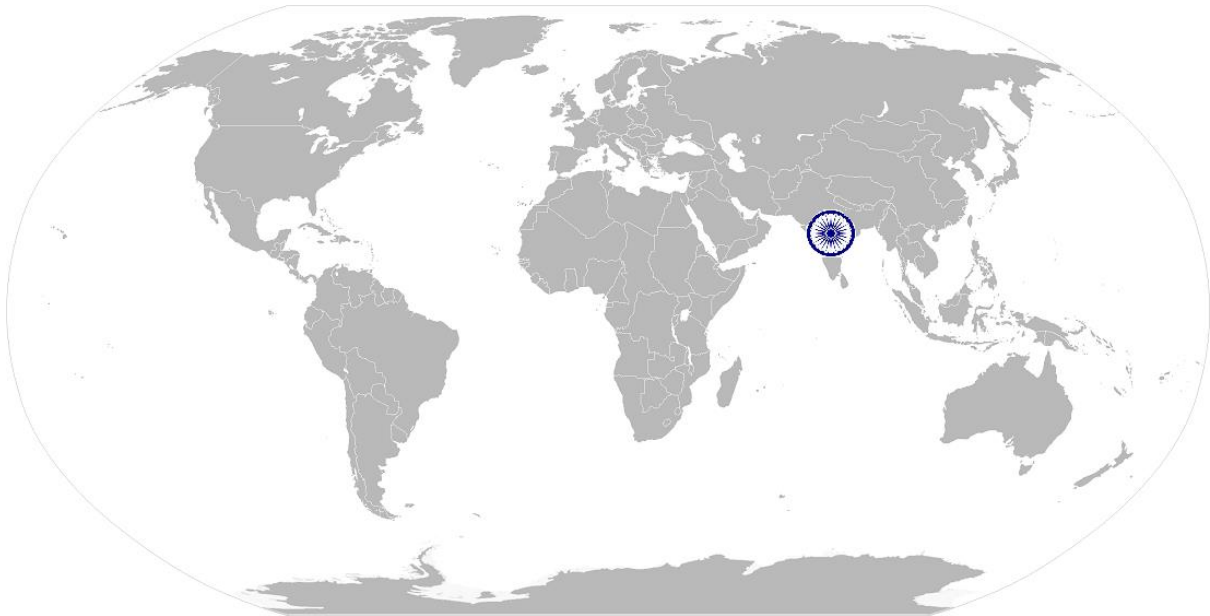
Produce the rubber mould

NOS Version Control

NOS Code	G&J/N2603		
Credits(NVEQF/NVQF/NSQF)	TBD	Version number	1.0
Industry	Gems & Jewellery	Drafted on	29/05/13
Industry Sub-sector	Cast and Diamond-set Jewellery	Last reviewed on	30/07/13
Occupation	Wax model making	Next review date	15/06/15



National Occupational Standard



Overview

This unit is about respecting intellectual property rights of the company's products and designs as well as avoiding infringement on IPR of other companies.

G&J/N9901

Respect and maintain IPR

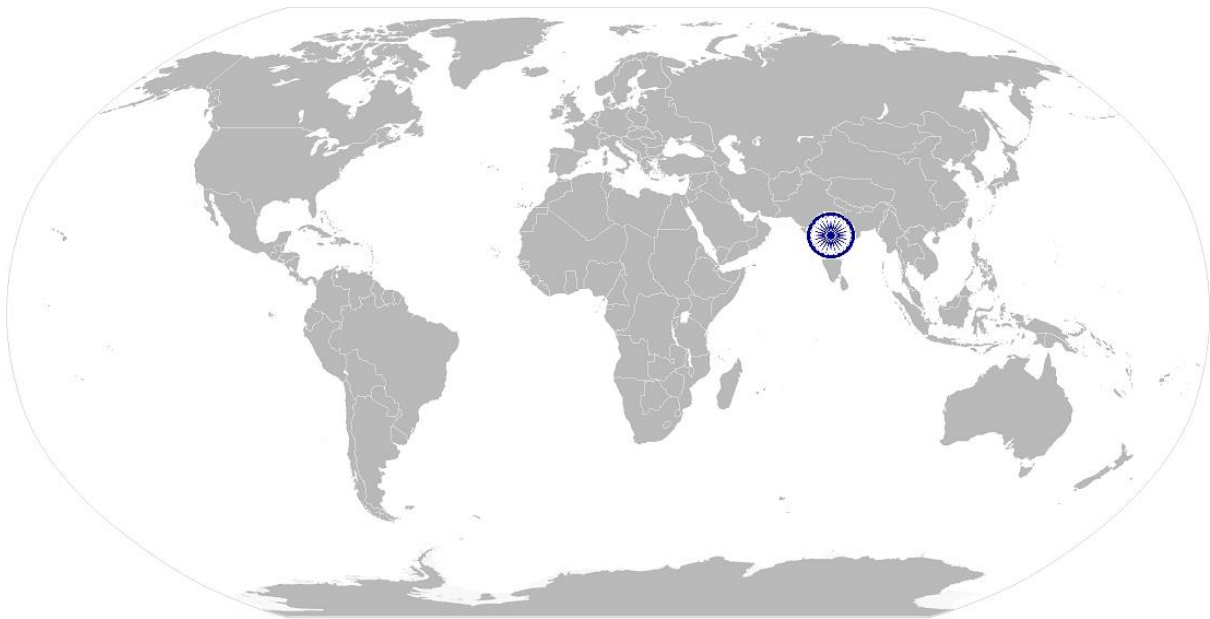
National Occupational Standard

Unit Code	G&J/N9901
Unit Title (Task)	Maintain IPR of company and respect IPR of other companies
Description	This OS unit is about protecting company's IPR and avoiding infringement to IPR of other companies
Scope	<p>This unit/task covers the following:</p> <p>Protect company's Intellectual Property Rights (IPR)</p> <ul style="list-style-type: none"> prevent leak of new designs to competitors by reporting on time be aware of any of company's product or design patents report IPR violations observed in the market, to supervisor or company heads <p>Avoid infringement to IPR of other companies</p> <ul style="list-style-type: none"> read copyright clause of the material published on the internet and any other printed material consult supervisor or senior management when in doubt about using publicly available information report any infringement observed in the company
Performance Criteria(PC) w.r.t. the Scope	
Element	Performance Criteria
Respecting and Maintaining IPR	To be competent, the user/individual on the job must: PC1. be able to spot plagiarism and report PC2. be aware of patents and IPR PC3. not be involved in IPR violations
Knowledge and Understanding (K)	
A. Organizational Context	The user/individual on the job needs to know and understand: KA1. company's policies on IPR and plagiarism KA2. reporting structure KA3. company's unique product range
B. Technical Knowledge	The user/individual on the job needs to know and understand: KB1. patents and IPR laws KB2. how IPR protection is important for competitiveness of a company
Skills (S) [Optional]	
A. Core Skills/ Generic Skills	Communication skills
	The user/ individual on the job needs to know and understand how to: SA1. effectively communicate any observed IPR violations or order leaks
B. Professional Skills	Decision making
	The user/individual on the job needs to know and understand how to: SA2. report potential sources of violations

G&J/N9901

Respect and maintain IPR

	Reflective thinking
	The user/individual on the job needs to know and understand to: SA3. learn from past mistakes and report IPR violations on time
	Critical thinking
	The user/individual on the job needs to know and understand how to: SA4. spot signs of violations and alert authorities in time

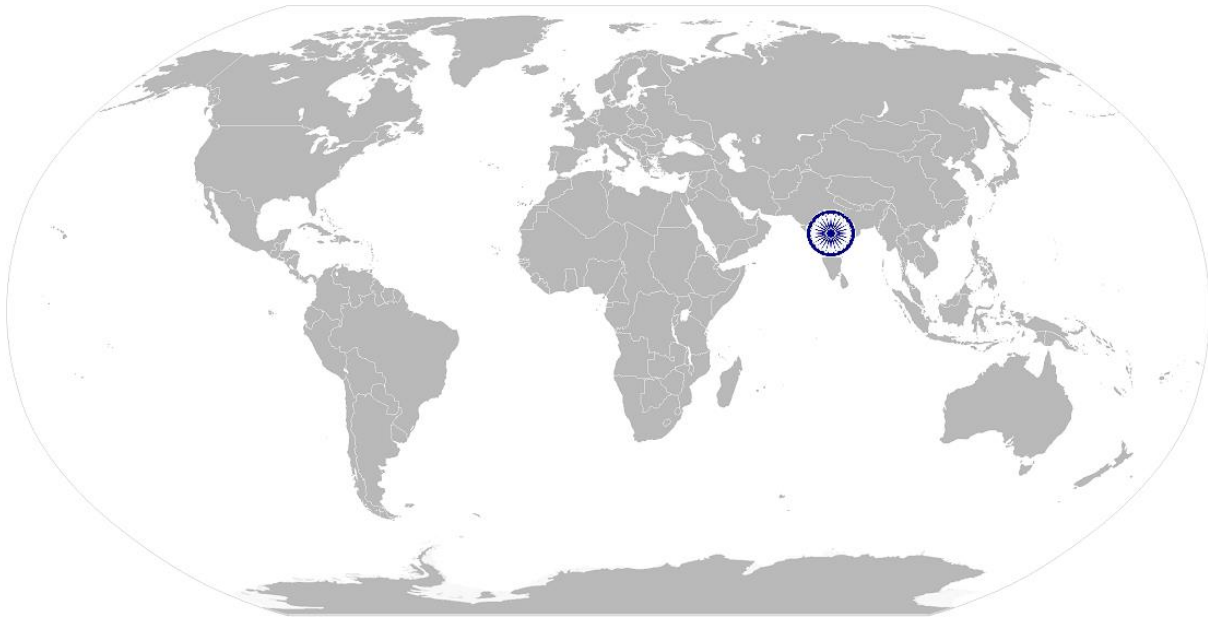


G&J/N9901

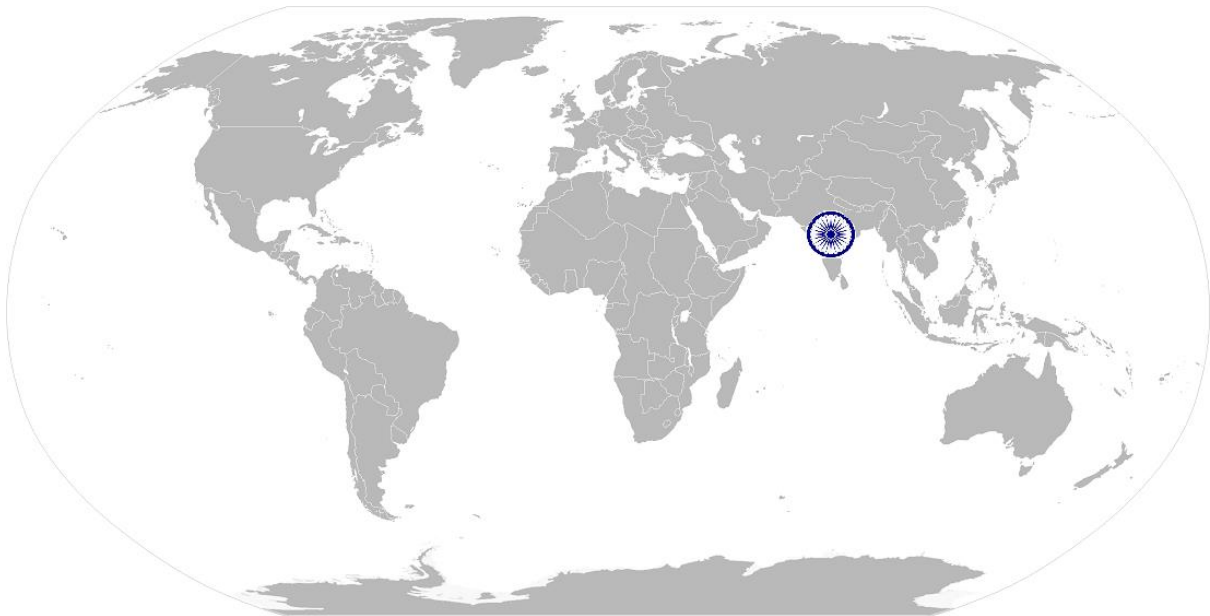
Respect and maintain IPR

NOS Version Control

NOS Code	G&J/N9901		
Credits(NVEQF/NVQF/NSQF)	TBD	Version number	1.0
Industry	Gems & Jewellery	Drafted on	29/05/13
Industry Sub-sector	Cast and Diamond-set Jewellery	Last reviewed on	30/07/13
		Next review date	15/06/15



National Occupational Standard



Overview

This unit is about team work and level of communication with colleagues or clients. It determines the ability to work as a team member, share work and multi-task in order to achieve the deliverables on schedule.

G&J/N9902

Coordinate with others

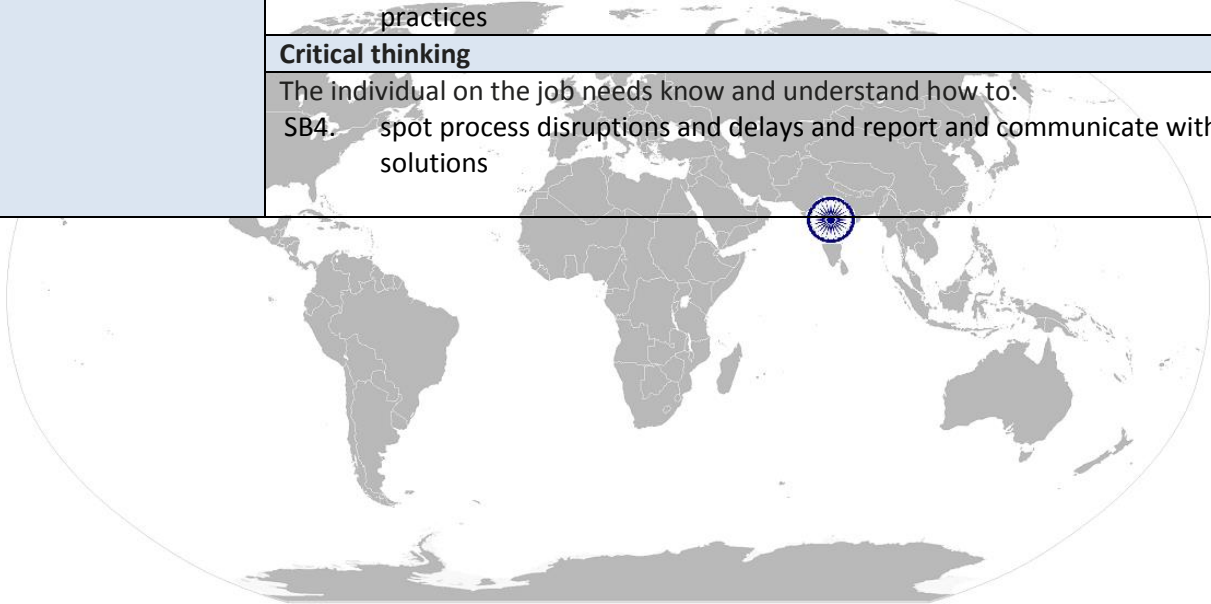
National Occupational Standard

Unit Code	G&J/N9902
Unit Title (Task)	Interact with colleagues and seniors
Description	This OS unit is about communicating with colleagues and seniors in order to achieve smooth and hazard-free work flow
Scope	<p>This unit/task covers the following:</p> <p>Interact with supervisor</p> <ul style="list-style-type: none"> • receive work instructions and raw materials from reporting supervisor • communicate to reporting supervisor about process-flow improvements, product defects received from previous process, repairs and maintenance of tools and machinery as required • communicate any potential hazards or expected process disruptions • handover completed work to supervisor <p>Interact with colleagues within and outside the department</p> <ul style="list-style-type: none"> • work as a team with colleagues and share work as per their or own work load and skills • work with colleagues of other departments • communicate and discuss work flow related difficulties in order to find solutions with mutual agreement • receive feedback from qc and rework in order to complete work on time
Performance Criteria(PC) w.r.t. the Scope	
Element	Performance Criteria
Interaction with supervisor	To be competent, the user/individual on the job must be able to: PC1. understand the work output requirements PC2. comply with company policy and rule PC3. deliver quality work on time as required by reporting any anticipated reasons for delays
Interactions with colleagues and other departments	To be competent, the user/individual on the job must be able to: PC4. put team over individual goals PC5. be able to resolve conflicts PC6. learn how to multi-task relevant activities
Knowledge and Understanding (K)	
A. Organizational Context	The user/individual on the job needs to know and understand: KA1. company's policies on: preferred language of communication, reporting and escalation policy, quality delivery standards, and personnel management KA2. reporting structure
B. Technical Knowledge	The user/individual on the job needs to know and understand how to: KB1. communicate effectively KB2. build team coordination

G&J/N9902

Coordinate with others

Skills (S) [Optional]	
A. Core Skills/ Generic Skills	Communication skills
	The individual on the job needs to know and understand how to: SA1. read and write preferred language of communication as prescribed by the company SA2. read job sheets and interpret technical details mentioned in the job sheet
B. Professional Skills	Decision making
	The individual on the job needs to know and understand: SB1. how to spot and communicate potential areas of disruptions to work process and report the same SB2. when to report to supervisor and when to deal with a colleague individually, depending on the type of concern
	Reflective thinking
	The individual on the job needs to know and understand how to: SB3. improve work processes by interacting with others and adopting best practices
	Critical thinking
The individual on the job needs know and understand how to: SB4. spot process disruptions and delays and report and communicate with solutions	

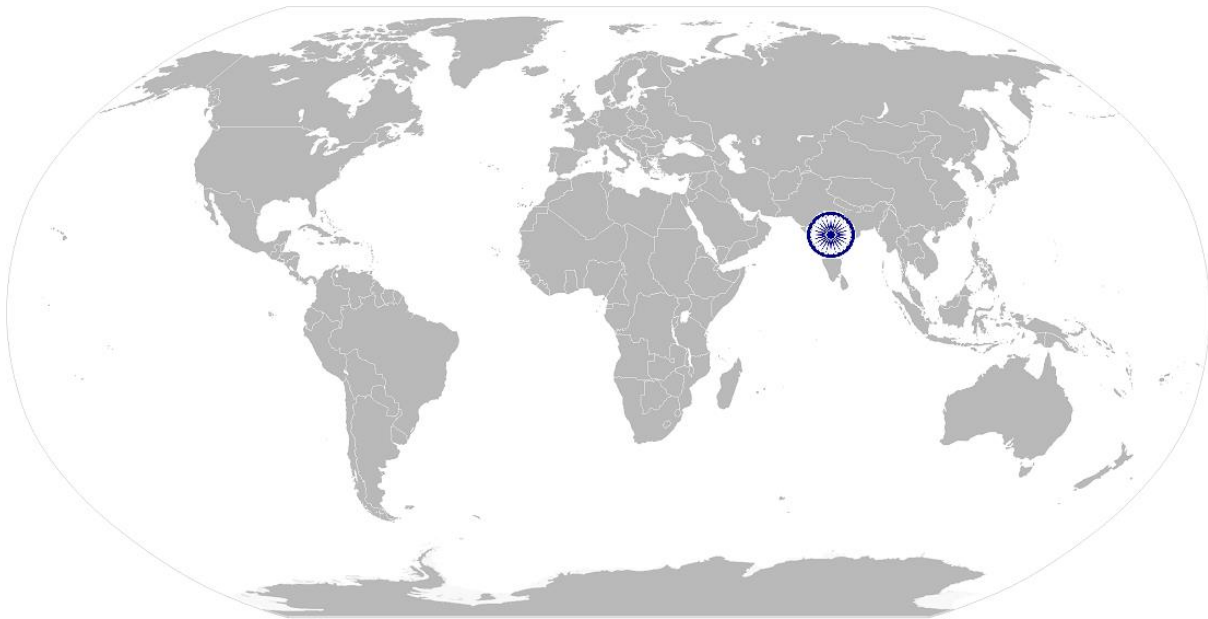


G&J/N9902

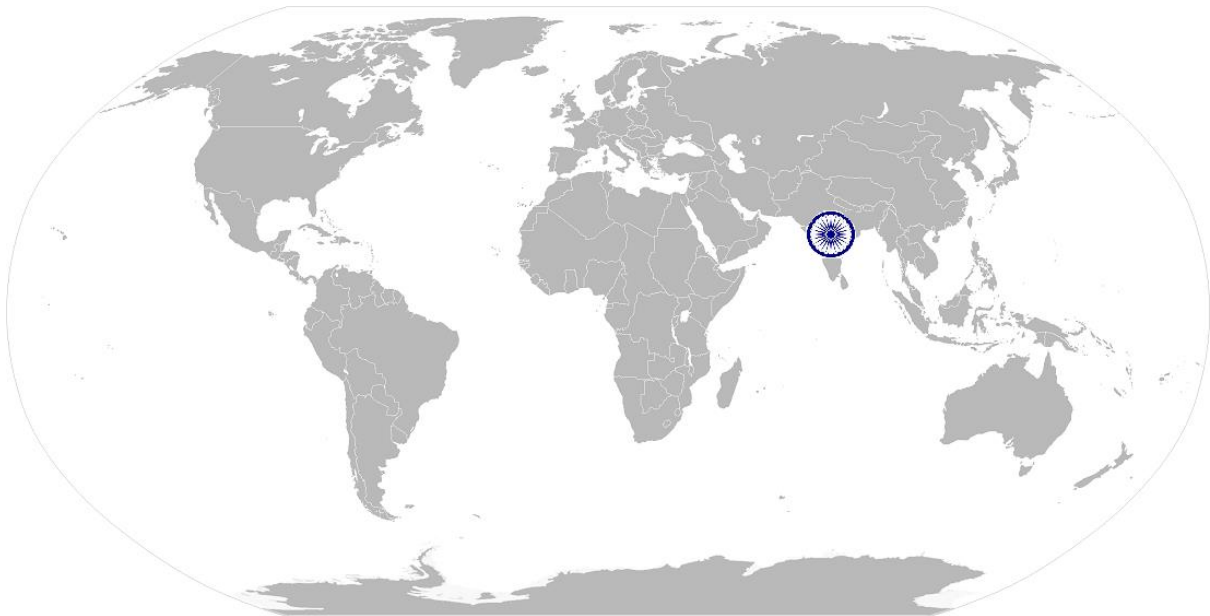
Coordinate with others

NOS Version Control

NOS Code	G&J/N9902		
Credits(NVEQF/NVQF/NSQF)	TBD	Version number	1.0
Industry	Gems & Jewellery	Drafted on	29/05/13
Industry Sub-sector	Cast and diamond-set jewellery	Last reviewed on	30/07/13
		Next review date	15/06/15



National Occupational Standard



Overview

This unit is about commitment towards reporting potential hazards, taking preventive measures to contain accidents in order to make the work environment safe for self and colleagues and maintaining occupational health and safety.

G&J/N9905

Maintain occupational health and safety

National Occupational Standard

Unit Code	G&J/N9905
Unit Title (Task)	Maintain occupational health and safety
Description	This OS unit is about being aware of, communicating and taking steps towards minimizing potential hazards and dangers of accidents on the job and maintaining occupational health and safety
Scope	<p>This unit/task covers the following:</p> <p>Understand potential sources of accidents</p> <ul style="list-style-type: none"> to avoid accidents related to use of potentially dangerous chemicals, sharp tools and machines <p>Use safety gear to avoid accidents</p> <ul style="list-style-type: none"> wear safety gear such as goggles, mask, gloves, ear plugs <p>Actively participate in the health and safety awareness campaigns</p> <ul style="list-style-type: none"> attend fire drills organised by the company or industrial zone learn first aid procedure be alert about designated assembly area in the event of an emergency read and understand the evacuation and emergency procedures <p>Communicate to reporting supervisor about:</p> <ul style="list-style-type: none"> process flow improvements that can reduce anticipated or repetitive hazards mishandling of tools, machines or hazardous materials electrical problems that could result in accident
Performance Criteria(PC) w.r.t. the Scope	
Element	Performance Criteria
Communicating potential accident points	To be competent, the user/individual on the job must be able to: PC1. spot and report potential hazards on time PC2. follow company policy and rules regarding use of hazardous materials PC3. attend and actively participate in the health and safety campaigns organised by the company
Using safety gear	To be competent, the user/individual on the job must be able to: PC4. use or wear safety gear as per the rules of the company
Knowledge and Understanding (K)	
A. Organizational Context	The user/individual on the job needs to know and understand: KA1. company's policies on: safety and hazards and personnel management KA2. reporting structure
B. Technical Knowledge	The user/individual on the job needs to know and understand: KB1. how different chemicals react and what could be the danger from them KB2. how to use machines and tools without suffering bodily harm

G&J/N9905

Maintain occupational health and safety

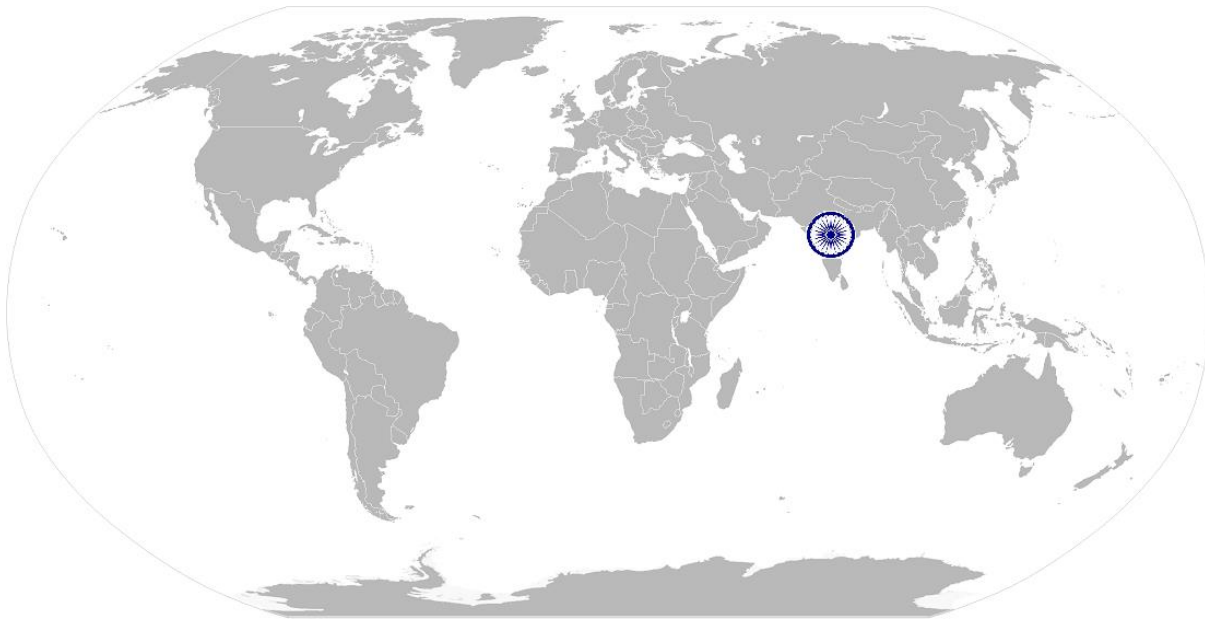
Skills (S) [Optional]	
A. Core Skills/ Generic Skills	Communication skills The individual on the job needs to know and understand how to: SA1. effectively communicate the danger
	Organising skills The individual on the job needs to know and understand how to: SA2. keep all the tools in an organised manner so as to avoid accidents SA3. keep the work environment safe and clean
	B. Professional Skills
	Decision making The individual on the job needs to know and understand how to: SB1. report potential sources of danger SB2. follow prescribed procedure in the event of an accident SB3. wear appropriate safety gear to avoid an accident
	Reflective thinking The individual on the job needs to know and understand to: SB4. learn from past mistakes regarding use of hazardous machines or chemicals
	Critical thinking The individual on the job needs to know and understand how to: SB5. spot danger
	Decision making The individual on the job needs to know and understand how to: SB6. report potential sources of danger SB7. follow prescribed procedure in the event of an accident SB8. wear appropriate safety gear to avoid an accident

G&J/N9905

Maintain occupational health and safety

NOS Version Control

NOS Code	G&J/N9905		
Credits(NVEQF/NVQF/NSQF)	TBD	Version number	1.0
Industry	Gems & Jewellery	Drafted on	29/05/13
Industry Sub-sector	Cast and diamond-set jewellery	Last reviewed on	30/07/13
		Next review date	15/06/15



Definitions

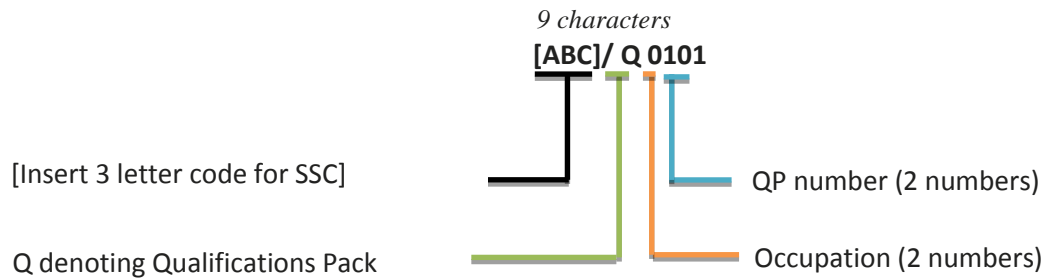
Keywords /Terms	Description
Sector	Sector is a conglomeration of different business operations having similar business and interests. It may also be defined as a distinct subset of the economy whose components share similar characteristics and interests.
Sub-sector	Sub-sector is derived from a further breakdown based on the characteristics and interests of its components.
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 an 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-function	Sub-functions are sub-activities essential to fulfil 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 organisation.
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 (OS)	NOS are occupational standards which apply uniquely in the Indian context.
Qualifications Pack (QP)	QP comprises the set of OS, together with the educational, training and other criteria required to perform a job role. A QP is assigned a unique qualifications pack code.
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 a 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 quality of performance required.
Knowledge and Understanding	Knowledge and understanding are statements which together specify the technical, generic, professional and organisational specific knowledge that an individual needs in order to perform to the required standard.
Organisational Context	Organisational context includes the way the organisation 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 the key to learning and working in today's world. These skills are typically needed in any work environment 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
CAD	Computer Aided Design
CAM	Computer Aided Manufacturing
IPR	Intellectual Property Rights
NOS	National Occupational Standard(s)
NVQF	National Vocational Qualifications Framework
NSQF	National Qualifications Framework
NVEQF	National Vocational Education Qualifications Framework
QP	Qualifications Pack

Annexure

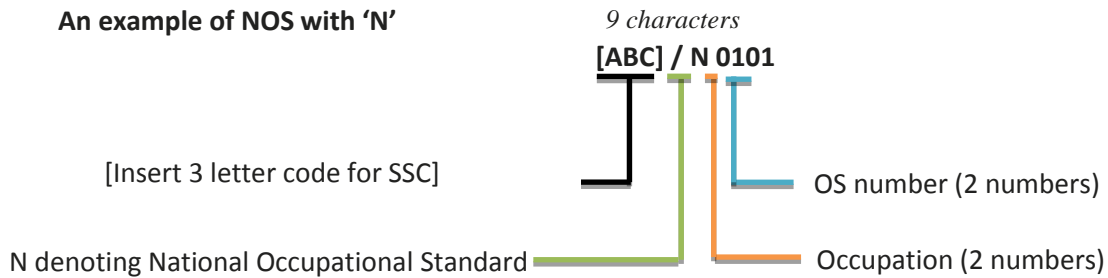
Nomenclature for QP and NOS

Qualifications Pack



Occupational Standard

An example of NOS with 'N'



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

Sub-sector	Range of Occupation numbers
Handmade gold and gems-set jewellery	01-20
Cast and diamond-set jewellery	21-40
Diamond processing	41-60
Gemstone processing	61-80
Jewellery retailing	81-98

Sequence	Description	Example
Three letters	Industry name	G&J
Slash	/	/
Next letter	Whether QP or NOS	N
Next two numbers	Occupation code	01
Next two numbers	OS number	01

CRITERIA FOR ASSESSMENT OF TRAINEES

Job Role Rubber Mould Maker

Qualification Pack G&J/Q2603

Sector Skill Council Gem & Jewellery

Guidelines for Assessment

1. Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Performance Criteria (PC) will be assigned marks proportional to its importance in NOS. SSC will also lay down proportion of marks for Theory and Skills Practical for each PC.
2. The assessment for the theory part will be based on knowledge bank of questions created by the SSC.
3. Individual assessment agencies will create theory question papers for candidates at every examination/training centre. (as per assessment criteria below)
4. Individual assessment agencies will create practical tests for skill evaluation for candidates at every examination/training centre. (as per assessment criteria below)
5. To pass the Qualification Pack, every candidate should score a minimum of 50% in theory and 70% in practical to successfully clear the assessment.
6. In case of successfully passing only certain number of NOS's, the candidate is eligible to take subsequent assessment on the balance NOS's to pass the Qualification Pack.

		Marks Allocation			
		Total Marks (80+20)	Out Of	Theory	Skills Practical
1. G&J/N2603 Produce the rubber mould	PC1. select appropriate rubber for creating mould	75	8	0	8
	PC2. place the master model and additional sprue (if any) accurately inside rubber layers		12	2	10
	PC3. set temperature for mould making as per operating standard		12	2	10
	PC4. accurately prepare rubber moulds		10	2	8
	PC5. precisely cut rubber mould ensuring flow of molten wax in the next process		12	2	10

	PC6. timely deliver rubber mould to next process		2	0	2
	PC7. produce number of moulds per day as per target given		2	0	2
	PC8. ensure damage free output with minimal hazards		5	0	5
	PC9. maintain allowance for shrinkage is made		4	1	3
	PC10. remove master model from hot rubber without damage		3	1	2
	PC11. produce quality okayed rubber mould and send with zero defects to next process		5	0	5
		Total	75	10	65
2. G&J/N9901 Respect and maintain IPR	PC1. be able to spot plagiarism and report	9	3	2	1
	PC2. be aware of patents and IPR		4	1	3
	PC3. not be involved in IPR violations		2	1	1
		Total	9	4	5
3. G&J/N9902 Coordinate with others	PC1. understand the work output requirements	8	2	1	1
	PC2. comply with company policy and rule		1	0	1
	PC3. deliver quality work on time as required by reporting any anticipated reasons for delays		1	0	1
	PC4. put team over individual goals		1	1	0
	PC5. be able to resolve conflicts		1	0	1
	PC6. learn how to multi-task relevant activities		2	1	1
		Total	8	3	5

4. G&J/N9905 Maintain occupational health and safety	PC1. spot and report potential hazards on time	8	2	1	1
	PC2. follow company policy and rules regarding use of hazardous materials		2	0	2
	PC3. attend and actively participate in the health and safety campaigns organised by the company		2	1	1
	PC4. use or wear safety gear as per the rules of the company		2	1	1
		Total	8	3	5