



APPRENTICESHIP CURRICULUM
for
Tyre Building
under
Rubber, Chemicals and Petrochemicals

1	Program Title : Tyre Building
2	Program Code, if any : RSC/Q0502, RSC/Q0504, RSC/Q0519, RSC/Q0521
3	Duration (hours and months) for theory (Block I) : 960 hours (5 months approximately)
4	Duration (hours and months) for On the Job Training (Block II): 5952 hours (31 months approximately with instructions)
5	Certifying body for theory component: RSDC
6	Certifying Body for On the Job training/practical component: Tyre manufacturing companies
7	Minimum eligibility criteria X th Standard (Educational Qualification and/or technical Qualification and Experience) Exemptions, if any: ITI / Diploma
8	Trainer's Qualification and Experience(BT and OJT) : BTech/BE preferably in Rubber, Chemical or Polymer with 5+ Yrs. Of experience in Rubber or related industry
9	Basic Training exemption criteria: Graduates
10	Indicative list of training tools required to deliver this qualification (may be attached as Annex A): <ul style="list-style-type: none"> • Tyre building machine • Strip Cutter/Feeders • Band Builders • Bead Flipping Machines • Sidewall Buffers • Guillotine Cutters • Slab Cutters • Fabric Processing Machines • Mill Aprons • Mill Feed Conveyors • Mill Strip Blenders • Air drums, etc. • Tread • Cords • Elastomer • Pull-out Spring Assembly • Down Tool Assembly • UP Tool Assembly • Bead Segment Spacer Magnetic-Non Magnetic • Knurled Shell Pipe • Line Marking Container Set • Trimming Blade Holder

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Formal structure of the curriculum

	Modules	Duration of Training-Theory (in hours)	Duration of Training-Practical (in hours)	Total duration (in hours)
Basic Training Program - Bicycle/Rickshaw Tyre Building Operator – TBM Semesters 1-2	1. Introduction	5	0	5
	2. Gender and PwD Sensitisation	5	0	5
	3. Equipment Readiness	5	10	15
	4. Raw Materials Appropriateness for Preparing Building Machine and Collecting	5	15	20
	5. Health & Safety	5	10	15
	6. Raw material appropriateness	5	15	20
	7. Operation in Building Bicycle/Rickshaw TBM Tyre	5	15	20
	8. Safety Aspects Related to Building Bicycle/Rickshaw TBM Tyre	5	10	15
	9. Operation in Post - Tyre Building Activities	5	15	20
	10. Material disposal and batch marking	5	15	20
	11. Precautions to Be Taken in Post building Activities	5	10	15
	12. Pre-housekeeping activities	3	6	9
	13. Operations in Housekeeping	5	15	20

	14. Post Housekeeping Activities	3	6	9
	15. Reporting, Recording and Documentation	2	6	8
	16. Information Security	2	6	8
	17. Carrying out quality checks	2	6	8
	18. Problem Identification and Necessary Action	2	6	8
Total		74	166	240
	Modules	Duration of Training-Theory (in hours)	Duration of Training-Practical (in hours)	Total duration (in hours)
Basic Training Program - Tyre Building Operator : Off the Road Tyre Semesters 2-3	Introduction	5	0	5
	Gender and PwD Sensitisation	5	0	5
	Equipment Readiness	5	15	20
	Raw material appropriateness for building machine	5	15	20
	Raw Material Appropriateness for Building off the Road Green Tyre	5	15	20
	Operation	5	15	20
	Health and Safety	5	15	20
	Post Tyre Building Operation	5	15	20
	Material disposal and batch marking	5	15	20
	Pre-housekeeping activities	5	10	15
	Housekeeping Operations	5	15	20
	Carrying out Reporting, Documentation and Information Security	5	10	15

I. Theory components (Block I)

	Carrying out quality checks	5	15	20
	Carrying out Problem Identification and Escalation	5	15	20
Total		70	170	240
	Modules	Duration of Training-Theory (in hours)	Duration of Training-Practical (in hours)	Total duration (in hours)
Basic Training Program - Tyre Building Operator-Passenger Vehicles Semesters 4-5	Introduction	5	0	5
	Gender and PwD Sensitisation	5	0	5
	Equipment readiness	5	10	15
	Raw material Appropriateness for Preparing Tyre Building Machine and Collecting All Components Required for Bias Tyre Building	5	15	20
	Manage Health and Safety	5	10	15
	Raw material Appropriateness for Building 2/3/4 wheeler passenger vehicle tyre	5	10	15
	Operation of Building 2/3/4 wheeler passenger vehicle tyre	5	10	15
	Operation of Post tyre building activities for passenger vehicle tyres	5	10	15
	Material disposal, batch marking and sampling	5	15	20
	Pre housekeeping activities	2	6	8
	Operations To carry out housekeeping	5	10	15
	Post housekeeping activities	5	10	15

	General Responsibility	5	10	15
	Reporting, Recording and Documentation	5	10	15
	Information Security	5	10	15
	Inspection, analyzing and reporting	5	10	15
	Problem Identification and Escalation	3	6	9
	Necessary Action	2	6	8
Total		82	158	240
	Modules	Duration of Training-Theory (in hours)	Duration of Training-Practical (in hours)	Total duration (in hours)
Basic Training Program - Tyre Building Operator-Commercial Vehicles Semesters 5-6	Introduction	5	0	5
	Gender and PwD Sensitisation	5	0	5
	Equipment readiness	5	15	20
	Raw material Appropriateness for Preparing Tyre Building Machine and Collecting All Components Required for Bias Tyre Building	5	15	20
	Manage Health and Safety	3	10	13
	Raw material Appropriateness for Building LCV/HCV/Tractor Commercial Vehicle Tyre	5	10	15
	Operation of Building LCV/HCV/Tractor Commercial Vehicle Tyre	5	10	15
	Operation of Post tyre building activities for commercial vehicle tyres	5	10	15

	Material disposal, batch marking and sampling	5	10	15
	Pre housekeeping activities	5	10	15
	Operations To carry out housekeeping	5	10	15
	Post housekeeping activities	5	10	15
	General Responsibility	2	10	12
	Reporting, Recording and Documentation	2	10	12
	Information Security	2	10	12
	Inspection, analysing and reporting	2	10	12
	Problem Identification and Escalation	2	10	12
	Necessary Action	2	10	12
Total		70	170	240
Total duration of BT		296	664	960
	Modules	Duration of Training-Theory (in hours)	Duration of Training-Practical (in hours)	Total duration (in hours)
On the Job Training Program: Bicycle/Rickshaw Tyre Building Operator – TBM Semesters 1-2	Equipment Readiness	4	89	93
	Raw Material Appropriateness for Preparing Building Machine and Collecting Components	4	89	93
	Health & Safety	4	89	93
	Raw material appropriateness	4	89	93
	Operation in Building Bicycle/Rickshaw TBM Tyre	4	89	93
	Safety Aspects Related to Building Bicycle/Rickshaw TBM Tyre	4	89	93
	Operation in Post - Tyre Building Activities	4	89	93

	Material disposal and batch marking	4	89	93
	Precautions to Be Taken in Post building Activities	4	89	93
	Pre-housekeeping activities	4	89	93
	Operations in Housekeeping	4	89	93
	Post Housekeeping Activities	4	89	93
	Reporting, Recording and Documentation	4	89	93
	Information Security	4	89	93
	Carrying out quality checks	4	89	93
	Problem Identification and Necessary Action	4	89	93
	Total	64	1424	1488
	Modules	Duration of Training-Theory (in hours)	Duration of Training-Practical (in hours)	Total duration (in hours)
On the Job Training Program: Tyre Building Operator : Off the Road Tyre Semesters 2-3	Equipment readiness	4	120	124
	Raw material appropriateness for building machine	4	120	124
	Raw material appropriateness for building off the road green tyre	4	120	124
	Operation	4	120	124
	Health & Safety	4	120	124
	Post Tyre Building Operation	4	120	124
	Material disposal and batch marking	4	120	124
	Pre housekeeping activities	4	120	124
	Housekeeping operations	4	120	124

Bicycle/Rickshaw Tyre Building Operator – TBM - Semesters 1-2

	Carrying out Reporting, Documentation and Information Security	4	120	124
	Carrying out Quality Checks	4	120	124
	Carrying out Problem Identification And Escalation	4	120	124
Total		48	1440	1488
	Modules	Duration of Training-Theory (in hours)	Duration of Training-Practical (in hours)	Total duration (in hours)
On the Job Training Program: Tyre Building Operator-Passenger Vehicles Semesters 4-5	Equipment readiness	4	79	83
	Raw material Appropriateness for Preparing Tyre Building Machine and Collecting All Components Required for Bias Tyre Building	4	78	82
	Manage Health and Safety	4	79	83
	Raw material Appropriateness for Building 2/3/4 wheeler passenger vehicle tyre	4	78	82
	Operation of Building 2/3/4 wheeler passenger vehicle tyre	4	79	83
	Operation of Post tyre building activities for passenger vehicle tyres	4	79	83
	Material disposal, batch marking and sampling	12	234	246
	Pre housekeeping activities	4	79	83
	Operations To carry out housekeeping	4	79	83
	Post housekeeping activities	4	79	83
	General Responsibility	4	79	83

	Reporting, Recording and Documentation	4	78	82
	Information Security	4	79	83
	Inspection, analysing and reporting	4	79	83
	Problem Identification and Escalation	4	79	83
	Necessary Action	4	79	83
Total		72	1416	1488
	Modules	Duration of Training-Theory (in hours)	Duration of Training-Practical (in hours)	Total duration (in hours)
On the Job Training Program: Tyre Building Operator-Commercial Vehicles Semesters 5-6	Equipment readiness	4	79	83
	Raw material Appropriateness for Preparing Tyre Building Machine and Collecting All Components Required for Bias Tyre Building	4	78	82
	Manage Health and Safety	4	79	83
	Raw material Appropriateness for Building LCV/HCV/Tractor Commercial Vehicle Tyre	4	78	82
	Operation of Building LCV/HCV/Tractor Commercial Vehicle Tyre	4	78	82
	Operation of Post tyre building activities for commercial vehicle tyres	4	79	83

	Material disposal, batch marking and sampling	12	237	249
	Pre housekeeping activities	4	79	83
	Operations To carry out housekeeping	4	79	83
	Post housekeeping activities	4	78	82
	General Responsibility	4	78	82
	Reporting, Recording and Documentation	4	78	82
	Information Security	4	79	83
	Inspection, analysing and reporting	4	79	83
	Problem Identification and Escalation	4	79	83
	Necessary Action	4	79	83
	Total	72	1416	1488
	Total duration of OJT	256	5696	5952

12 Total Pass marks

	Total and Pass Marks- Theory	Total and Pass Marks- Practical
Basic Training Program	210 out of 300	140 out of 200
On the Job Training Program	210 out of 300	140 out of 200

13 Job description-brief: On completion of the course, the individual has to perform the following job responsibilities:

- Building the bicycle/rickshaw tyre by assembling the different components on the tyre building chucks
- Building off the road green tyre by assembling the different components of the tyre building drum
- Building the 2/3/4 wheeler passenger vehicle tyres
- Building of 2/3/4 wheeler commercial vehicle tyres

14	Employment avenues/opportunities: Automotive Industry, Construction, Agriculture, Sports and Leisure Industry
15	Curriculum update version and date: 13.04.2020; 1.0
16	Curriculum revision date: 13.03.2023

Modules	Topics/Expected Key Learning outcomes
<p>Introduction</p> <p>Theory: 5 hours</p> <p>Practical: 00 hours</p> <p>Corresponding NOS: Bridge Module</p>	<ul style="list-style-type: none"> • List the benefits provided by the rubber sector and the tyre industry. • Summarise the role and the importance of the rubber sector and the tyre industry. • Paraphrase information (evidence, articles, etc.) regarding the rubber sector and the tyre industry. • Categorise various services and sub-sectors in the rubber industry. • Describe the key emerging trends in the rubber industry. • List a few major organisations in the rubber sector. • Compare the current and the projected markets, for Tyre Building Operator, in India and abroad. • Provide a few examples of current and upcoming trends in Tyre Building Operator. • Classify the skills and competencies along with a career path for a Bicycle/Rickshaw Tyre Building Operator – TBM.

<p>Gender and PwD Sensitisation</p> <p>Theory: 5 hours</p> <p>Practical: 00 hours</p> <p>Corresponding NOS: Bridge Module</p>	<ul style="list-style-type: none"> • Explain the concept of gender identity, roles and expressions of an individual • Recognise the difference and diversity among genders • Devise ways to get rid of discrimination on the basis of gender • Practise using gender-neutral/gender-inclusive terms to make everybody feel important and a part of the organisation • Implement strict laws to prevent sexual harassment towards the opposite gender • Spread the idea of equal payment, opportunities and just appraisal as a norm • Inform about the job roles that can be performed by PwD • Describe proper attitude towards Persons with disability • Prioritise strict laws to prevent workplace bullying, physical, and verbal abuse • Practise using of relevant and assistive technology
<p>Equipment Readiness</p> <p>Theory: 5 hours</p> <p>Practical: 10 hours</p>	<ul style="list-style-type: none"> • Summarise the importance of keeping the tools and equipment, required for tyre building, clean and ready to use • Demonstrate machine and equipment preparation process as per SOP

<p>Corresponding NOS: RSC/N0513</p>	<ul style="list-style-type: none"> • Assess the functions of the stitchers as per the required pressure mentioned in the specifications • Choose the correct building drum • Describe the availability of chuck on which the tyre is built • Recognise the importance of correct width of chuck • List the consequences of improper preparation • Identify problems to avoid the unnecessary delay
<p>Raw Materials Appropriateness for Preparing Building Machine and Collecting Components</p> <p>Theory: 5 hours</p> <p>Practical: 15 hours</p> <p>Corresponding NOS: RSC/N0513</p>	<ul style="list-style-type: none"> • List all the components required for preparing building machine • Determine the availability of all the components • Recognise tags , markings , date and shift to ensure correctness of codes • Identify the use of only within age components • Evaluate component dimensions as per the specifications • Examine sequential application of components (beads, ply and tread) and its impact if done incorrectly • Estimate the Impact on performance due to wrong application of components during tyre building • Discuss the Implication of poor off set application of beads and its effect on cured tyre

	<ul style="list-style-type: none"> • Explain proper usage of tread, chafer and side wall and its effect on cured tyre • State the importance of poor and wrinkled ply wound on the bead rings
<p>Health & Safety</p> <p>Theory: 5 hours</p> <p>Practical: 10 hours</p> <p>Corresponding NOS: RSC/N0513</p>	<ul style="list-style-type: none"> • Discuss the use of certified tools and equipment for tyre building • Recognise all safety norms (such as wearing protective gloves, mask, earplugs and safety shoes) • Follow safety measures as laid down by safety department. • Comply with health, safety, environment guidelines and regulations in accordance with international/national standards or the organizational standards
<p>Raw material appropriateness</p> <p>Theory: 5 hours</p> <p>Practical: 15 hours</p> <p>Corresponding NOS: RSC/N0514</p>	<ul style="list-style-type: none"> • List all the components required for preparing building bicycle/rickshaw TBM tyre • Determine the availability of all the components • Compare the specification and schedule while arranging the materials • Check the component for suitability (appearance and other quality checks) • Choose drum paint and solvent for freshening • State the poorly prepared material and power failures

<p>Operation in Building Bicycle/Rickshaw TBM Tyre</p> <p>Theory: 5 hours</p> <p>Practical: 15 hours</p> <p>Corresponding NOS: RSC/N0514</p>	<ul style="list-style-type: none"> • State sequence of consolidating components as per guidelines issued by the technical team • Recognise bead on grooves on either side of the chuck • Determine the application of ply spirally over the bead rings at a specified bias angle ensuring beads are well covered and the ends are stitched • Cite the application of stitchers and appropriate stitching pressures for proper and uniform stitching of treads with the ply/plies • Recommend if there are air traps at the bead area • Devise ways to use solvent to freshen the ply or tread if they are of low tack • Inspect the green tyre for blemishes and air pockets
<p>Safety Aspects Related to Building Bicycle/Rickshaw TBM Tyre</p> <p>Theory: 5 hours</p> <p>Practical: 10 hours</p> <p>Corresponding NOS: RSC/N0514</p>	<ul style="list-style-type: none"> • State the importance of safe distance from rotating drum • Recognise the reasons to avoid wearing loose shirt • Cite the importance of minimal usage of solvent • Explain all safety norms (such as wearing protective gloves, masks and • earplugs) • Elaborate health, safety, environment guidelines and regulations in accordance with international/national

	standards or the organizational standards.
Operation in Post - Tyre Building Activities Theory: 5 hours Practical: 15 hours Corresponding NOS: RSC/N0515	<ul style="list-style-type: none"> • State the methods of tracing bead area with stickers • Recognise marking on the tyre with crayon • Identify green tyres, wrinkles and air pockets • Show ways to record number of tyres built and number scrapped or held for disposition • Maintain the equipment required for tyre building • List the unused components to be discarded in the designated place • Maintain the special equipment required for each tyre and size properly in the designated area
Material Disposal and Batch Marking Theory: 5 hours Practical: 15 hours Corresponding NOS: RSC/N0515	<ul style="list-style-type: none"> • Cite the importance of identification and traceability by marking code , date and shift on the tyre with crayon batch as per the instructions laid down by the company • Identify the tyre builder by placing builder number sticker on the bead toe area of the tyre (or as per SOP)
Precautions to Be Taken in Post building Activities	<ul style="list-style-type: none"> • Recognise handling of the prepared product using hand gloves and other safety equipment

<p>Theory: 5 hours</p> <p>Practical: 10 hours</p> <p>Corresponding NOS: RSC/N0515</p>	<ul style="list-style-type: none"> • Comply with all safety norms (such as wearing protective gloves, shoes, safety mask etc.) • Explain the importance of waste management • Elaborate the importance of using eco-friendly materials • List the ways to replace materials with environment friendly substitute • Cite the necessity to follow international guidelines for health and safety
<p>Pre-housekeeping activities</p> <p>Theory: 3 hours</p> <p>Practical: 6 hours</p> <p>Corresponding NOS: RSC/N5001</p>	<ul style="list-style-type: none"> • State the importance of Inspection of the area while taking into account various surfaces • Identify the material requirements for cleaning the areas inspected, by considering risk, time, efficiency and type of stain • Recognise the importance of cleaning equipment for proper working • Select the suitable alternatives for cleaning the areas in case the appropriate equipment and materials are not available and inform the appropriate person • Plan the sequence for cleaning the area to avoid re-soiling clean areas and surfaces • Cite the necessity of adequate ventilation for

	<p>the work being carried out</p> <ul style="list-style-type: none"> • Describe the personal protective equipment required for the cleaning method and materials being used
<p>Operations in Housekeeping</p> <p>Theory: 5 hours</p> <p>Practical: 15 hours</p> <p>Corresponding NOS: RSC/N5001</p>	<ul style="list-style-type: none"> • Explain the use the correct cleaning method for the work area • Elaborate type of soiling and surface • State the importance of cleaning activity without disturbing others • Recognise accidental damage, if any, caused while carrying out the work • Describe reporting to the appropriate person any difficulties in carrying out your work • Identify any additional cleaning required that is outside one's responsibility or skill • Point out to the appropriate person about the cleaning responsibility outside one's skill
<p>Post Housekeeping Activities</p> <p>Theory: 3 hours</p> <p>Practical: 6 hours</p> <p>Corresponding NOS: RSC/N5001</p>	<ul style="list-style-type: none"> • Identify if there is no oily substance on the floor to avoid slippage • Explain the importance of maintaining order and make sure that no scrap is lying around • Maintain housekeeping equipment and supplies • List ways of housekeeping equipment and supplies • Elaborate procedures to deal with any accidental damage caused during the cleaning process

	<ul style="list-style-type: none"> • State the importance of cleanliness on completion of the work • Describe the necessity of returning the equipment, materials and personal protective equipment that were used to the right places making sure they are clean, safe and securely stored
<p>Reporting, Recording and Documentation</p> <p>Theory: 2 hours</p> <p>Practical: 6 hours</p> <p>Corresponding NOS: RSC/N5002</p>	<ul style="list-style-type: none"> • State ways to report data/problems/incidents as applicable in a timely manner • Recognise reporting to the appropriate authority as laid down by the company • Describe reporting procedures as prescribed by the company • Identify documentation to be completed relating to one's role • Plan recording details accurately in an appropriate format • Discuss ways to complete all documentation within stipulated time according to company procedure • Restate the importance of the final document meeting with the requirements of the persons who requested it or making any amendments accordingly
<p>Information Security</p> <p>Theory: 2 hours</p>	<ul style="list-style-type: none"> • Recognise the ways to respond to requests for information in an appropriate manner

<p>Practical: 6 hours</p> <p>Corresponding NOS: RSC/N5002</p>	<ul style="list-style-type: none"> • Explain the importance of following organisational procedures • Elaborate ways to ensure secured information • List ways to inform the concerned authority about the information received
<p>Carrying out quality checks</p> <p>Theory: 2 hours</p> <p>Practical: 6 hours</p> <p>Corresponding NOS: RSC/N5003</p>	<ul style="list-style-type: none"> • Use appropriate measuring instruments, equipment, tools, accessories etc. as required • Identify non-conformities to quality assurance standards • Recognise the impact on final product due to non-conformance to company standards • State corrective action to address problem • Assess quality check results • Explain reporting procedure where the cause of the defect cannot be identified
<p>Problem Identification and Necessary Action</p> <p>Theory: 2 hours</p> <p>Practical: 6 hours</p> <p>Corresponding NOS: RSC/N5004</p>	<ul style="list-style-type: none"> • Identify defects/indicators of problems and the causes that may lead to the problem • Recognise practices that may impact the final product quality • State ways to escalate the problem to avoid delay • Explain applicable corrections and formulate corrective action • Communicate problem/remedial action to appropriate parties

	<ul style="list-style-type: none"> • Evaluate implementation of corrective action taken to determine if the problem has been resolved • Escalate the problem within stipulated time • Elaborate that no delays are caused as a result of failure to escalate problems
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Tyre Building Operator: Off the Road Tyre - Semesters 2-3

Modules	Topics/Expected Key Learning outcomes
<p>Introduction</p> <p>Theory: 5 hours</p> <p>Practical: 00 hours</p> <p>Corresponding NOS: Bridge Module</p>	<ul style="list-style-type: none"> • List the benefits provided by the rubber sector and the tyre industry • Summarise the role and the importance of the rubber sector and the tyre industry • Paraphrase information (evidence, articles, etc.) regarding the rubber sector and the tyre industry • Categorise various services and sub-sectors in the rubber industry • Describe the key emerging trends in the rubber industry

	<ul style="list-style-type: none"> • List a few major organisations in the rubber sector • Compare the current and the projected markets, for Tyre Building Operator: Off the Road Tyre, in India and abroad • Provide a few examples of current and upcoming trends in Tyre Building Operator : Off the Road Tyre • Classify the skills and competencies along with a career path for a Tyre Building Operator: Off the Road Tyre
<p>Gender and PwD Sensitisation</p> <p>Theory: 5 hours</p> <p>Practical: 00 hours</p> <p>Corresponding NOS: Bridge Module</p>	<ul style="list-style-type: none"> • Explain the concept of gender identity, roles and expressions of an individual • Recognise the difference and diversity among genders • Devise ways to get rid of discrimination on the basis of gender • Practise using gender-neutral/gender-inclusive terms to make everybody feel important and a part of the organisation • Implement strict laws to prevent sexual harassment towards the opposite gender • Spread the idea of equal payment, opportunities and just appraisal as a norm • Inform about the job roles that can be performed by PwD

	<ul style="list-style-type: none"> • Describe proper attitude towards Persons with disability • Prioritise strict laws to prevent workplace bullying, physical, and verbal abuse • Practise using of relevant and assistive technology
<p>Equipment Readiness</p> <p>Theory: 5 hours</p> <p>Practical: 15 hours</p> <p>Corresponding NOS: RSC/N0519</p>	<ul style="list-style-type: none"> • Summarise the importance of keeping the tools and equipment, required for tyre building, clean and ready to use • Demonstrate machine and equipment preparation process as per SOP • Assess the functions of the stitchers and cross rollers as per the required pressure mentioned in the specifications • Choose the correct building drum • Describe the availability of chuck on which the tyre is built • Recognise the importance of correct width of chuck • Interpret different building machines- its operation, understanding of different switches, levers, foot pedals and emergency brakes • List the consequences of improper preparation • Identify problems to avoid the unnecessary delay
<p>Raw material appropriateness for building machine</p>	<ul style="list-style-type: none"> • List all the components required for preparing building machine • Determine the availability of all the components

<p>Theory: 5 hours</p> <p>Practical: 15 hours</p> <p>Corresponding NOS: RSC/N0519</p>	<ul style="list-style-type: none"> • Recognise tags , markings , date and shift to ensure correctness of codes and within age components • Evaluate component dimensions as per the specifications • Examine sequential application of components (beads, ply and tread) and its impact if done incorrectly • Estimate the Impact on performance due to wrong application of components during tyre building • Discuss the Implication of poor off set application of beads and its effect on cured tyre • Explain proper usage of tread, chafer and side wall and its effect on cured tyre • State the importance of poor and wrinkled ply wound on the bead rings
<p>Raw Material Appropriateness for Building off the Road Green Tyre</p> <p>Theory: 5 hours</p> <p>Practical: 15 hours</p> <p>Corresponding NOS: RSC/N0520</p>	<ul style="list-style-type: none"> • List all the components required for preparing building off the road green tyre • Determine the availability of all the components • Compare the specification and schedule while arranging the materials • Check the component for suitability (appearance and other quality checks) • Choose drum paint and solvent for freshening • State the poorly prepared material and power failures

<p>Operation</p> <p>Theory: 5 hours</p> <p>Practical: 15 hours</p> <p>Corresponding NOS: RSC/N0520</p>	<ul style="list-style-type: none"> • State sequence of consolidating components as per guidelines issued by the technical team • Recognise bead on grooves on either side of the chuck • Determine the application of ply spirally over the bead rings at a specified bias angle ensuring beads are well covered and the ends are stitched • Cite the application of stitchers and appropriate stitching pressures for proper and uniform stitching of treads with the ply/plies • Recommend if there are air traps at the bead area • Devise ways to use solvent to freshen the ply or tread if they are of low tack • Inspect the green tyre for blemishes and air pockets
<p>Health and Safety</p> <p>Theory: 5 hours</p> <p>Practical: 15 hours</p> <p>Corresponding NOS: RSC/N0520</p>	<ul style="list-style-type: none"> • Discuss the use of certified tools and equipment for tyre building • State the importance of safe distance from rotating drum • Recognise the reasons to avoid wearing loose shirt • Cite the importance of minimal usage of solvent • Explain all safety norms (such as wearing protective gloves, masks and earplugs) • Describe handling the prepared product using

	<p>hand gloves and other safety equipment</p> <ul style="list-style-type: none"> • Elaborate health, safety, environment guidelines and regulations in accordance with international/national standards or the organizational standards.
<p>Post Tyre Building Operation</p> <p>Theory: 5 hours</p> <p>Practical: 15 hours</p> <p>Corresponding NOS: RSC/N0521</p>	<ul style="list-style-type: none"> • State the methods of tracing bead area with stickers • Recognise marking on the tyre with crayon • Identify green tyres, wrinkles and air pockets • Show ways to record number of tyres built and number scrapped or held for disposition • Maintain the equipment required for tyre building • List the unused components to be discarded in the designated place • Maintain the special equipment required for each tyre and size properly in the designated area
<p>Material Disposal and Batch Marking</p> <p>Theory: 5 hours</p> <p>Practical: 15 hours</p> <p>Corresponding NOS: RSC/N0521</p>	<ul style="list-style-type: none"> • Cite the importance of identification and traceability by marking code , date and shift on the tyre with crayon batch as per the instructions laid down by the company • Identify the tyre builder by placing builder number sticker on the bead toe area of the tyre (or as per SOP)

<p>Pre-housekeeping activities</p> <p>Theory: 5 hours</p> <p>Practical: 10 hours</p> <p>Corresponding NOS: RSC/N5001</p>	<ul style="list-style-type: none"> • State the importance of Inspection of the area while taking into account various surfaces • Identify the material requirements for cleaning the areas inspected, by considering risk, time, efficiency and type of stain • Recognise the importance of cleaning equipment for proper working • Select the suitable alternatives for cleaning the areas in case the appropriate equipment and materials are not available and inform the appropriate person • Plan the sequence for cleaning the area to avoid re-soiling clean areas and surfaces • Cite the necessity of adequate ventilation for the work being carried out • Describe the personal protective equipment required for the cleaning method and materials being used
<p>Housekeeping Operations</p> <p>Theory: 5 hours</p> <p>Practical: 15 hours</p>	<ul style="list-style-type: none"> • Explain the use the correct cleaning method for the work area • Elaborate type of soiling and surface • State the importance of cleaning activity without disturbing others

<p>Corresponding NOS: RSC/N5001</p>	<ul style="list-style-type: none"> • Recognise accidental damage, if any, caused while carrying out the work • Describe reporting to the appropriate person any difficulties in carrying out your work • Identify any additional cleaning required that is outside one's responsibility or skill • Point out to the appropriate person about the cleaning responsibility outside one's skill • Identify if there is no oily substance on the floor to avoid slippage • Explain the importance of maintaining order and make sure that no scrap is lying around • Maintain housekeeping equipment and supplies • List ways of housekeeping equipment and supplies • Elaborate procedures to deal with any accidental damage caused during the cleaning process • State the importance of cleanliness on completion of the work • Describe the necessity of returning the equipment, materials and personal protective equipment that were used to the right places making sure they are clean, safe and securely stored
<p>Carrying out Reporting, Documentation</p>	<ul style="list-style-type: none"> • State ways to report data/problems/incidents as applicable in a timely manner

<p>and Information Security</p> <p>Theory: 5 hours</p> <p>Practical: 10 hours</p> <p>Corresponding NOS: RSC/N5002</p>	<ul style="list-style-type: none"> • Recognise reporting to the appropriate authority as laid down by the company • Describe reporting procedures as prescribed by the company • Identify documentation to be completed relating to one's role • Plan recording details accurately in an appropriate format • Discuss ways to complete all documentation within stipulated time according to company procedure • Restate the importance of the final document meeting with the requirements of the persons who requested it or making any amendments accordingly • Recognise the ways to respond to requests for information in an appropriate manner • Explain the importance of following organisational procedures • Elaborate ways to ensure secured information • List ways to inform the concerned authority about the information received
<p>Carrying out quality checks</p> <p>Theory: 5 hours</p> <p>Practical: 15 hours</p> <p>Corresponding NOS: RSC/N5003</p>	<ul style="list-style-type: none"> • Use appropriate measuring instruments, equipment, tools, accessories etc. as required • Discuss if range of checks are regularly and consistently performed

	<ul style="list-style-type: none"> • Identify non-conformities to quality assurance standards • Recognise the impact on final product due to non-conformance to company standards • State corrective action to address problem • Assess quality check results • Provide results of the findings to QC in charge/appropriate authority • Explain reporting procedure where the cause of the defect cannot be identified
<p>Carrying out Problem Identification And Escalation</p> <p>Theory: 5 hours</p> <p>Practical: 15 hours</p> <p>Corresponding NOS: RSC/N5004</p>	<ul style="list-style-type: none"> • Identify defects/indicators of problems and the causes that may lead to the problem • Recognise practices that may impact the final product quality • State ways to escalate the problem to avoid delay • Explain applicable corrections and formulate corrective action • Communicate problem/remedial action to appropriate parties • Evaluate implementation of corrective action taken to determine if the problem has been resolved • Escalate the problem within stipulated time • Elaborate that no delays are caused as a result of failure to escalate problems

Tyre Building Operator-Passenger Vehicles - Semesters 4-5

Modules	Topics/Expected Key Learning outcomes
Introduction Theory: 5 hours Practical:00 hours Corresponding NOS: Bridge Module	<ul style="list-style-type: none">• List the benefits provided by the Rubber Industry.• Summarise the role and the importance of the Rubber Industry.• Paraphrase information (evidence, articles, etc.) regarding Rubber Industry.• Categorise various services and sub-sectors in the Rubber Industry.

	<ul style="list-style-type: none"> • Describe the key emerging trends in the Rubber Industry. • List a few major organisations in the Rubber Industry • Compare the current and the projected markets, in India and abroad. • Provide a few examples of current and upcoming trends in demand for rubber products • Classify the skills and competencies along with a career path for a Tyre Building Operator- Passenger Vehicles
<p>Gender and PwD Sensitisation</p> <p>Theory: 5 hours</p> <p>Practical: 00 hours</p> <p>Corresponding NOS: Bridge Module</p>	<ul style="list-style-type: none"> • Explain the concept of gender identity, roles and expressions of an individual • Recognise the difference and diversity among genders • Devise ways to get rid of discrimination on the basis of gender • Practise using gender-neutral/gender-inclusive terms to make everybody feel important and a part of the organisation • Implement strict laws to prevent sexual harassment towards the opposite gender • Spread the idea of equal payment, opportunities and just appraisal as a norm • Inform about the job roles that can be performed by PwD

	<ul style="list-style-type: none"> • Describe proper attitude towards Persons with disability • Prioritise strict laws to prevent workplace bullying, physical, and verbal abuse • Practise using of relevant and assistive technology
<p>Equipment readiness</p> <p>Theory: 5 hours</p> <p>Practical: 10 hours</p> <p>Corresponding NOS: RSC/N1901</p>	<ul style="list-style-type: none"> • List the processes of cleaning tyre building machine and building drum ensuring building drum of the correct size is in place • Summarise different building tools which should always be kept ready • Discuss the functioning of electrical panel door • Discuss stitching pressure (tread/ply) as per specification
<p>Raw material Appropriateness for Preparing Tyre Building Machine and Collecting All Components Required for Bias Tyre Building</p> <p>Theory: 5 hours</p> <p>Practical: 15 hours</p> <p>Corresponding NOS: RSC/N1901</p>	<ul style="list-style-type: none"> • List the correct quantity of materials • Discuss visual inspection • List the desired quantity of raw materials • Discuss causes of delays as a result of improper preparation and failure to identify problems • Discuss FIFO

<p>Manage Health and Safety</p> <p>Theory: 5 hours</p> <p>Practical: 10 hours</p> <p>Corresponding NOS: RSC/N1901</p>	<ul style="list-style-type: none"> • Discuss Housekeeping and Safety in Tyre Building area • List clothes to be used in working hours • Summarise different personal protective equipment • Discuss different safety norms • Discuss proper use of solvent • List personal protective elements used while handling the hot knife to cut joints • List protective elements used to avoid inhalation of solvent vapour • List information about usage of different materials including water • Identify and ensure recyclable, non-recyclable and hazardous waste are segregated as per SOP
<p>Raw material Appropriateness for Building 2/3/4 wheeler passenger vehicle tyre</p> <p>Theory: 5 hours Practical: 10 hours</p> <p>Corresponding NOS: RSC/N1902</p>	<ul style="list-style-type: none"> • Discuss the batch size of tyre building material as per specified quantity
<p>Operation of Building 2/3/4 wheeler</p>	<ul style="list-style-type: none"> • Discuss batch sequence in shifts based on raw

<p>passenger vehicle tyre</p> <p>Theory: 5 hours</p> <p>Practical: 10 hours</p> <p>Corresponding NOS: RSC/N1902</p>	<p>material availability/rejection to maximize output</p> <ul style="list-style-type: none"> • Summarise how to Rotate drum at controlled speed, freshen surface and apply stitchers as per process requirement during the building process • Summarise material wastage and how it should be within tolerance limits • Discuss rework or rejection and how it should not be generated • List production quantity targets set for the operation • Summarise work instructions laid down by the company
<p>Operation of Post tyre building activities for passenger vehicle tyres</p> <p>Theory: 5 hours</p> <p>Practical: 10 hours</p>	<ul style="list-style-type: none"> • List the work instructions laid down by the company • Summarise the transportation of tyre to painting section • Discuss handing over the equipment to the next operator in clean and good condition
<p>Material disposal, Batch Marking and Sampling</p> <p>Theory: 5 hours</p> <p>Practical: 15 hours</p> <p>Corresponding NOS: RSC/N1903</p>	<ul style="list-style-type: none"> • List methods of disposing off waste material as per waste disposal procedures laid down by the company • Discuss formation of batch size as per company specifications

	<ul style="list-style-type: none"> • Discuss sample in specified form to lab for testing • Classify the remaining material to the designated storage area
<p>Pre housekeeping activities</p> <p>Theory: 2 hours</p> <p>Practical: 6 hours</p> <p>Corresponding NOS: RSC/N5001</p>	<ul style="list-style-type: none"> • List the material requirements for cleaning the areas inspected, by considering risk, time, efficiency and type of stain • Recognise the cleaning equipment is in proper working condition • Discuss the suitable alternatives for cleaning the areas in case the appropriate equipment and materials are not available and inform the appropriate person • Discuss cleaning activity informing affected people • Recognise if there is adequate ventilation for the work being carried out • List the personal protective equipment required for the cleaning method and materials being used
<p>Operations To carry out housekeeping</p> <p>Theory: 5 hours</p> <p>Practical: 10 hours</p> <p>Corresponding NOS: RSC/N5001</p>	<ul style="list-style-type: none"> • Discuss how to deal with accidental damage, if any, caused while carrying out the work

<p>Post housekeeping Activities</p> <p>Theory: 5 hours</p> <p>Practical: 10 hours</p> <p>Corresponding NOS: RSC/N5001</p>	<ul style="list-style-type: none"> • Identify that there is no oily substance on the floor to avoid slippage • Identify no scrap material is lying around • Discuss maintenance and storage of housekeeping equipment and supplies • Discuss workplace procedures to deal with any accidental damage caused during the cleaning process
<p>General Responsibility</p> <p>Theory: 5 hours</p> <p>Practical: 10 hours</p> <p>Corresponding NOS: RSC/N5001</p>	<ul style="list-style-type: none"> • List the schedules and records for housekeeping duty
<p>Reporting, Recording and Documentation</p> <p>Theory: 5 hours</p> <p>Practical: 10 hours</p> <p>Corresponding NOS: RSC/N5002</p>	<ul style="list-style-type: none"> • Discuss reporting procedures as prescribed by the company • Discuss the completion of documentation which should be completed relating to one's role • Discuss how the final document meets with the requirements of the persons who requested it or make any amendments accordingly • Identify that documents are available to all appropriate authorities to inspect

Information Security Theory: 5 hours Practical: 10 hours Corresponding NOS: RSC/N5002	<ul style="list-style-type: none"> List requests for information in an appropriate manner whilst following organizational procedures
Inspection, analysing and reporting Theory: 5 hours Practical: 10 hours Corresponding NOS: RSC/N5003	<ul style="list-style-type: none"> Identify that the total range of checks are regularly and consistently performed Identify non-conformities to quality assurance standards Identify potential causes of non-conformities to quality assurance standards Identify impact on final product due to non-conformance to company standards Analyse the Record of results of action taken Analyse effectiveness of action taken List reporting procedures where the cause of defect cannot be identified
Problem Identification and Escalation Theory: 3 hours	<ul style="list-style-type: none"> Identify defects/indicators of problems Identify any wrong practices that may lead to problems

<p>Practical: 6 hours</p> <p>Corresponding NOS: RSC/N5004</p>	<ul style="list-style-type: none"> • Identify practices that may impact the final product quality • Identify if the problem has occurred before • Identify other operations that might be impacted by the problem
<p>Necessary Action</p> <p>Theory: 2 hours</p> <p>Practical: 6 hours</p> <p>Corresponding NOS: RSC/N5004</p>	<ul style="list-style-type: none"> • Consider possible reasons for identification of problems • Consider applicable corrections and formulate corrective action • Identify action in a timely manner • Identify corrective action • Consider if corrective action selected is viable and practical • Discuss if correct solution is identified to an identified problem • Discuss that no delays should be caused as a result of failure to take necessary action

Modules	Topics/Expected Key Learning outcomes
<p>Introduction</p> <p>Theory: 4 hours</p> <p>Practical: 00 hours</p> <p>Corresponding NOS: Bridge Module</p>	<ul style="list-style-type: none"> • List the benefits provided by the Rubber Industry. • Summarise the role and the importance of the Rubber Industry. • Paraphrase information (evidence, articles, etc.) regarding Rubber Industry. • Categorise various services and sub-sectors in the Rubber Industry. • Describe the key emerging trends in the Rubber Industry. • List a few major organisations in the Rubber Industry • Compare the current and the projected markets, in India and abroad. • Provide a few examples of current and upcoming trends in demand for rubber products • Classify the skills and competencies along with a career path for a Tyre Building Operator- Passenger Vehicles
<p>Gender and PwD Sensitisation</p> <p>Theory: 4 hours</p> <p>Practical: 00 hours</p> <p>Corresponding NOS: Bridge Module</p>	<ul style="list-style-type: none"> • Explain the concept of gender identity, roles and expressions of an individual • Recognise the difference and diversity among genders • Devise ways to get rid of discrimination on the basis of gender • Practise using gender-neutral/gender-inclusive terms to make everybody

	<p>feel important and a part of the organisation</p> <ul style="list-style-type: none"> • Implement strict laws to prevent sexual harassment towards the opposite gender • Spread the idea of equal payment, opportunities and just appraisal as a norm • Inform about the job roles that can be performed by PwD • Describe proper attitude towards Persons with disability • Prioritise strict laws to prevent workplace bullying, physical, and verbal abuse • Practise using of relevant and assistive technology
<p>Equipment readiness</p> <p>Theory: 4 hours</p> <p>Practical: 17 hours</p> <p>Corresponding NOS: RSC/N2101</p>	<ul style="list-style-type: none"> • List the processes of cleaning tyre building machine and building drum ensuring building drum of the correct size is in place • Summarise different building tools which should always be kept ready • Discuss the functioning of electrical panel door • Discuss stitching pressure (tread/ply) as per specification
<p>Raw material Appropriateness for Preparing Tyre Building Machine and Collecting All Components For</p>	<ul style="list-style-type: none"> • List the correct quantity of materials • Discuss visual inspection • List the desired quantity of raw materials • Discuss causes of delays as a result of improper

<p>Bias Tyre Building</p> <p>Theory: 4 hours</p> <p>Practical: 17 hours</p> <p>Corresponding NOS: RSC/N2101</p>	<p>preparation and failure to identify problems</p> <ul style="list-style-type: none"> • Discuss FIFO
<p>Manage Health and Safety</p> <p>Theory: 4 hours</p> <p>Practical: 17 hours</p> <p>Corresponding NOS: RSC/N2101</p>	<ul style="list-style-type: none"> • Discuss Housekeeping and Safety in Tyre Building area • List clothes to be used in working hours • Summarise different personal protective equipment • Discuss different safety norms • Discuss proper use of solvent • List personal protective elements used while handling the hot knife to cut joints • List protective elements used to avoid inhalation of solvent vapour • List information about usage of different materials including water • Identify and ensure recyclable, non-recyclable and hazardous waste are segregated as per SOP
<p>Raw material Appropriateness for Building LCV/HCV/Tractor Commercial Vehicle Tyre</p>	<ul style="list-style-type: none"> • Discuss the batch size of tyre building material as per specified quantity

<p>Theory: 4 hours</p> <p>Practical: 17 hours</p> <p>Corresponding NOS: RSC/N2102</p>	
<p>Operation of Building LCV/HCV/Tractor Commercial Vehicle Tyre</p> <p>Theory: 4 hours</p> <p>Practical: 17 hours</p> <p>Corresponding NOS: RSC/N2102</p>	<ul style="list-style-type: none"> • Discuss batch sequence in shifts based on raw material availability/rejection to maximize output • Discuss how material wastage is kept within tolerance limits • Summarise how no rework or rejection is generated • Identify production quantity targets set for the operation • List work instructions as laid down by the company
<p>Operation of Post tyre building activities for commercial vehicle tyres</p> <p>Theory: 4 hours</p> <p>Practical: 17 hours</p> <p>Corresponding NOS: RSC/N2103</p>	<ul style="list-style-type: none"> • List the work instructions laid down by the company • Summarise the transportation of tyre to painting section • Discuss handing over the equipment to the next operator in clean and good condition
<p>Material disposal, Batch Marking and Sampling</p> <p>Theory: 12 hours</p>	<ul style="list-style-type: none"> • List methods of disposing off waste material as per waste disposal procedures laid down by the company

<p>Practical: 50 hours</p> <p>Corresponding NOS: RSC/N2103</p>	<ul style="list-style-type: none"> • Discuss formation of batch size as per company specifications • Discuss sample in specified form to lab for testing • Classify the remaining material to the designated storage area
<p>Pre housekeeping activities</p> <p>Theory: 4 hours</p> <p>Practical: 16 hours</p> <p>Corresponding NOS: RSC/N5001</p>	<ul style="list-style-type: none"> • List the material requirements for cleaning the areas inspected, by considering risk, time, efficiency and type of stain • Recognise the cleaning equipment is in proper working condition • Discuss the suitable alternatives for cleaning the areas in case the appropriate equipment and materials are not available and inform the appropriate person • Discuss cleaning activity informing affected people • Recognise if there is adequate ventilation for the work being carried out • List the personal protective equipment required for the cleaning method and materials being used
<p>Operations To carry out housekeeping</p> <p>Theory: 4 hours</p> <p>Practical: 17 hours</p> <p>Corresponding NOS: RSC/N5001</p>	<ul style="list-style-type: none"> • Discuss how to deal with accidental damage, if any, caused while carrying out the work •

<p>Post housekeeping Activities</p> <p>Theory: 4 hours</p> <p>Practical: 15 hours</p> <p>Corresponding NOS: RSC/N5001</p>	<ul style="list-style-type: none"> • Identify that there is no oily substance on the floor to avoid slippage • Identify no scrap material is lying around • Discuss maintenance and storage of housekeeping equipment and supplies • Discuss workplace procedures to deal with any accidental damage caused during the cleaning process
<p>General Responsibility</p> <p>Theory: 4 hours</p> <p>Practical: 17 hours</p> <p>Corresponding NOS: RSC/N5001</p>	<ul style="list-style-type: none"> • List the schedules and records for housekeeping duty
<p>Reporting, Recording and Documentation</p> <p>Theory: 4 hours</p> <p>Practical: 17 hours</p>	<ul style="list-style-type: none"> • Discuss reporting procedures as prescribed by the company • Discuss the completion of documentation which should be completed relating to one's role • Discuss how the final document meets with the

<p>Corresponding NOS: RSC/N5002</p>	<p>requirements of the persons who requested it or make any amendments accordingly</p> <ul style="list-style-type: none"> • Identify that documents are available to all appropriate authorities to inspect
<p>Information Security</p> <p>Theory: 4 hours</p> <p>Practical: 17 hours</p>	<ul style="list-style-type: none"> • List requests for information in an appropriate manner whilst following organizational procedures
<p>Inspection, Analysing and Reporting</p> <p>Theory: 4 hours</p> <p>Practical: 17 hours</p> <p>Corresponding NOS: RSC/N5003</p>	<ul style="list-style-type: none"> • List requests for information in an appropriate manner whilst following organizational procedures
<p>Problem Identification and Escalation</p> <p>Theory: 4 hours</p> <p>Practical: 17 hours</p> <p>Corresponding NOS: RSC/N5004</p>	<ul style="list-style-type: none"> • Identify defects/indicators of problems • Identify any wrong practices that may lead to problems • Identify practices that may impact the final product quality • Identify if the problem has occurred before • Identify other operations that might be impacted by the problem

<p>Necessary Action</p> <p>Theory: 4 hours</p> <p>Practical: 17 hours</p> <p>Corresponding NOS: RSC/N5004</p>	<ul style="list-style-type: none"> • Consider possible reasons for identification of problems • Consider applicable corrections and formulate corrective action • Identify action in a timely manner • Identify corrective action • Consider if corrective action selected is viable and practical • Discuss if correct solution is identified to an identified problem • Discuss that no delays should be caused as a result of failure to take necessary action
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II. Practical/On the job Training component (Block II)

Bicycle/Rickshaw Tyre Building Operator – Semesters 1-2

Units	Topics/Expected Key Learning outcomes
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<p>Equipment Readiness</p> <p>Theory: 4 hours</p> <p>Practical: 89 hours</p> <p>Corresponding NOS: RSC/N0513</p>	<ul style="list-style-type: none"> • Prepare the tools and equipment required for tyre building by cleaning and making them ready to use • Perform machine and equipment process as per SOP • Work with electronic gadgets provided on the building machine panel • Set up the widths and selection of rings and components for the building of desired size/s • Set up stitcher pressure and their impact • Operate stitchers and their settings in tyre building • Test the functions of stitchers as per the required pressure by the specification • Apply correct spacing width on building rings • Analyse cases highlighting the consequences of improper preparation
<p>Raw Materials Appropriateness for Preparing Building Machine and Collecting Components</p> <p>Theory: 4 hours</p> <p>Practical: 89 hours</p> <p>Corresponding NOS: RSC/N0513</p>	<ul style="list-style-type: none"> • Assemble all the components required for preparing building machine • Analyse tags, markings , date and shift to ensure correctness of codes • Practise using components within age. • Prepare component dimensions as per the specifications. • Plan sequential application of components for desired impact • Apply proper application to get better performance of components during tyre building • Perform proper application of beads and document its effect on cured tyre • Operate different components like tread, chafer and side wall to see its effect on cured tyre • Demonstrate the importance of poor and wrinkled ply wound on the bead rings • Observe the effect of wrong dimension of the components • Modify abnormalities in equipment performance

	<ul style="list-style-type: none"> • Show implications of delays in the preparation process • Examine Types of defects leading to rejections and their indicators, reasons • Find out possible solutions to stop rejection
Health & Safety Theory: 4 hours Practical: 89 hours Corresponding NOS: RSC/N0513	<ul style="list-style-type: none"> • Perform the use of certified tools and equipment for tyre building • Practise all safety norms (such as wearing protective gloves, mask, earplugs and safety shoes) • Prepare material and energy audit reports • Check for spills/leakages in various tasks/activities/processes • Demonstrate health, safety, environment guidelines and regulations in accordance with international/national standards or the organizational standards • Monitor cleanliness and safety requirements for commencing building operation. • Practise dealing with emergencies, for example, power failures, fire, system failures, spillages and manual intervention to avoid disasters • Replace materials by environment friendly substitutes • Implement ways to conserve energy
Raw material appropriateness Theory: 4 hours Practical: 89 hours Corresponding NOS: RSC/N0514	<ul style="list-style-type: none"> • Prepare the components required for building bicycle/rickshaw TBM tyre • Analyse the specification and schedule while arranging the materials • Practise using suitable material for desired results • Use drum paint and solvent for freshening • Select well-prepared material to avoid unwanted consequences • Perform sequential application of components for positive impact

	<ul style="list-style-type: none"> • Use tread, chafer and side wall for its effect on cured tyre • Practise right dimension of the components • Inspect tyres getting scrapped due to building fault and resolve the issue
<p>Operation in Building Bicycle/Rickshaw TBM Tyre</p> <p>Theory: 4 hours</p> <p>Practical: 89 hours</p> <p>Corresponding NOS: RSC/N0514</p>	<ul style="list-style-type: none"> • Analyse sequence of consolidating components as per guidelines issued by the technical team • Place bead on grooves on either side of the chuck • Apply ply spirally over the bead rings at a specified bias angle ensuring beads are well covered and the ends stitched • Perform the application of stitchers and appropriate stitching pressures for proper and uniform stitching of treads with the ply/plies • Examine that there are no air traps at the bead area • Release the tyre after tyre building is over • Use solvent to freshen the ply or tread if they are of low tack • Practice ways to inspect the green tyre for blemishes and air pockets • Perform quality checks as per the requirement • Compare different units of measurement
<p>Safety Aspects Related to Building Bicycle/Rickshaw TBM Tyre</p> <p>Theory: 4 hours</p> <p>Practical: 89 hours</p>	<ul style="list-style-type: none"> • Maintain safe distance from rotating drum • Perform minimal usage of solvent • Practise all safety norms (such as wearing protective gloves, masks and earplugs) • Collect information on the pattern of electricity and fuel consumption • Carry out routine cleaning of tools, machines and equipment • Replace materials with environment friendly substitutes

<p>Corresponding NOS: RSC/N0514</p>	<ul style="list-style-type: none"> • Monitor material and water conservation processes • Comply with health, safety, environment guidelines and regulations in accordance with international/national standards or the organizational standards • Report malfunctioning (fumes/sparks/emission/vibration/noise) and lapse in maintenance of equipment
<p>Operation in Post - Tyre Building Activities</p> <p>Theory: 4 hours</p> <p>Practical: 89 hours</p> <p>Corresponding NOS: RSC/N0515</p>	<ul style="list-style-type: none"> • Place the builder number sticker on the bead area for traceability • Practise marking on the tyre with crayon • Inspect green tyre and check for wrinkles and air pockets • Rectify /repair wrinkles and awl vent the air-pockets • Place the Ok green tyres on Pin stands provided near the building machine for service man to pick up and move to curing area • Practice loading the built green tyre on plants equipped with overhead hook conveyors • Record number of tyres built and number scrapped or held for disposition • Analyse the equipment required for tyre building • Report any repair and maintenance requirement to the Supervisor • Perform the disposal of the unused components to the designated place • Assemble the special equipment required for each tyre and size properly in the designated area
<p>Material Disposal and Batch Marking</p> <p>Theory: 4 hours</p>	<ul style="list-style-type: none"> • Perform code marking • Analyse the importance of identification and traceability by marking code, date and shift on the tyre • Practise marking as per the guidelines/instructions laid down by the company

<p>Practical: 89 hours</p> <p>Corresponding NOS: RSC/N0515</p>	<ul style="list-style-type: none"> • Evaluate the importance of identifying non-conforming products and their storage • Carry out placing builder number sticker on the bead toe area of the tyre(as per the SOP
<p>Precautions to Be Taken in Post building Activities</p> <p>Theory: 4 hours</p> <p>Practical: 89 hours</p> <p>Corresponding NOS: RSC/N0515</p>	<ul style="list-style-type: none"> • Perform handling of the prepared product using hand gloves and other safety equipment. • Practise wearing protective equipment before venturing out for work • Analyse energy/electricity audit report to identify high energy/electricity consumption areas • Implement energy efficient systems in a phased manner • Categorise recyclable, non-recyclable and hazardous waste • Check the impact of poor practices on health, safety and environment • Prepare material and energy audit reports • Analyse material audit report to decipher excessive consumption of material and water • Examine health, safety, environment guidelines and regulations in accordance with international/national standards or the organizational standards
<p>Pre-housekeeping activities</p> <p>Theory: 4 hours</p> <p>Practical: 89 hours</p> <p>Corresponding NOS: RSC/N5001</p>	<ul style="list-style-type: none"> • Inspect the area while taking into account various surfaces • Analyse the material requirements for cleaning the areas inspected, by considering risk, time, efficiency and type of stain • Examine if the cleaning equipment is in proper working condition • Practise the selection of suitable alternatives for cleaning the areas in case the appropriate equipment and materials are not available and inform the appropriate person

	<ul style="list-style-type: none"> • Prepare the sequence for cleaning the area to avoid re-soiling clean areas and surfaces • Devise ways to inform the affected people about the cleaning activity • Display the appropriate signage for the work being conducted • Test if there is adequate ventilation for the work being carried out • Practise wearing the personal protective equipment required for the cleaning method and materials being used
<p>Operations in Housekeeping</p> <p>Theory: 4 hours</p> <p>Practical: 89 hours</p> <p>Corresponding NOS: RSC/N5001</p>	<ul style="list-style-type: none"> • Use the correct cleaning method for the work area • Analyse the type of soiling and surface • Carry out cleaning activity without disturbing others • Practise dealing with accidental damage, if any, caused while carrying out the work • Perform reporting to the appropriate person any difficulties in carrying out your work • Prepare a report describing responsibility that is beyond one's skill to the concerned authority • Examine most appropriate place to carry out test cleans and why this should be done before applying treatments • Modify the operations as per the convenience
<p>Post Housekeeping Activities</p> <p>Theory: 4 hours</p> <p>Practical: 89 hours</p>	<ul style="list-style-type: none"> • Prepare the surface oil-proof to avoid slippage • Report if there are any scrap materials lying around • Maintain housekeeping equipment and supplies • Practise storage of housekeeping equipment and supplies • Comply with procedures to deal with any accidental damage caused during the cleaning process

<p>Corresponding NOS: RSC/N5001</p>	<ul style="list-style-type: none"> • Demonstrate ways to make area clean and dry after the completion of work • Return the equipment, materials and personal protective equipment that were used to the right places making sure they are clean, safe and securely stored • Dispose of the waste garnered from the activity in an appropriate manner • Perform proper disposal of used and un-used solutions according to manufacturer's instructions, and clean the equipment thoroughly • Maintain schedules and records for housekeeping duty • Replenish any necessary supplies or consumables
<p>Reporting, Recording and Documentation</p> <p>Theory: 4 hours</p> <p>Practical: 89 hours</p> <p>Corresponding NOS: RSC/N5002</p>	<ul style="list-style-type: none"> • Report data/problems/incidents as applicable in a timely manner • Practise reporting to the appropriate authority as laid down by the company • Compare different methods of recording information • Analyse reporting procedures as prescribed by the company • Evaluate procedures for recording damage, breakages etc. • Prepare documentation to be completed relating to one's role • Assemble details accurately in an appropriate format • Construct all documentation within stipulated time according to company procedure • Examine the final document meets the requirements of the persons who requested it or make any amendments accordingly • Inspect all the documents before sending it to concerned authorities

<p>Information Security</p> <p>Theory: 4 hours</p> <p>Practical: 89 hours</p> <p>Corresponding NOS: RSC/N5002</p>	<ul style="list-style-type: none"> • Practice ways to respond to requests for information in an appropriate manner • Perform organisational procedures in respect to information security • Use different methods to ensure secured information • Inform the appropriate authority of requests for information received • Implement the consequences if the procedures are not followed
<p>Carrying out quality checks</p> <p>Theory: 4 hours</p> <p>Practical: 89 hours</p> <p>Corresponding NOS: RSC/N5003</p>	<ul style="list-style-type: none"> • Perform total range of checks regularly and consistently • Practise the use appropriate measuring instruments, equipment, tools, accessories etc. as required • Point out non-conformities to quality assurance standards • Inspect potential causes of non-conformities to quality assurance standards • Analyse the impact on final product due to non-conformance to company standards • Evaluate the need for action to ensure that problems do not recur • Suggest corrective action to address problem • Review effectiveness of corrective action • Interpret the results of the quality check correctly • Take up results of the findings with QC in charge/appropriate authority • Examine the results of the findings within stipulated time • Record of results of action taken • Assemble adjustments not covered by established procedures for future reference • Review effectiveness of action taken

	<ul style="list-style-type: none"> • Use reporting procedures where the cause of defect cannot be identified
<p>Problem Identification and Necessary Action</p> <p>Theory: 4 hours</p> <p>Practical: 89 hours</p> <p>Corresponding NOS: RSC/N5004</p>	<ul style="list-style-type: none"> • Analyse defects/indicators of problems • Inspect any wrong practices that may lead to problems • Perform practices that may impact the final product quality • Examine if the problem has occurred before • Locate other operations that might be impacted by the problem • Modify ways to overcome delay • Test materials and samples for non-conformance and evaluate the results wherever necessary • Practice applicable corrections and formulate corrective action • Formulate action in a timely manner • Communicate problem/remedial action to appropriate parties • Demonstrate corrective action for problems identified according to the company procedures • Report/document problem and corrective action in an appropriate manner • Monitor corrective action • Implement corrective action to resolve problems

Tyre Building Operator: Off the Road Tyre- Semesters 2-3

Units	Topics/Expected Key Learning outcomes
<p>Equipment Readiness</p> <p>Theory: 4 hours</p> <p>Practical: 120 hours</p> <p>Corresponding NOS: RSC/N5019</p>	<ul style="list-style-type: none"> • Prepare the tools and equipment required for tyre building by cleaning and making them ready to use • Perform machine and equipment process as per SOP • Work with electronic gadgets provided on the building machine panel • Set up the widths and selection of rings and components for the building of desired size/s • Measure the drum width and set it as per the required specification • Set up stitcher pressure for its proper impact • Operate stitchers and their settings in tyre building • Test the functions of stitchers as per the required pressure by the specification • Inspect different building machines- its operation, understanding of different switches, levers, foot pedals and emergency brakes • Apply correct spacing width on building rings • Analyse cases highlighting the consequences of improper preparation
<p>Raw material appropriateness for building machine</p> <p>Theory: 4 hours</p> <p>Practical: 120 hours</p> <p>Corresponding NOS: RSC/N5019</p>	<ul style="list-style-type: none"> • Assemble all the components required for preparing building machine • Analyse tags, markings , date and shift to ensure correctness of codes • Practise using components within age. • Prepare component dimensions as per the specifications. • Plan sequential application of components for desired impact • Apply proper application to get better performance of components during tyre building • Perform proper application of beads and document its effect on cured tyre

	<ul style="list-style-type: none"> • Operate different components like tread, chafer and side wall to see its effect on cured tyre • Demonstrate the importance of poor and wrinkled ply wound on the bead rings • Observe the effect of wrong dimension of the components • Modify abnormalities in equipment performance • Show implications of delays in the preparation process • Examine Types of defects leading to rejections and their indicators, reasons • Find out possible solutions to stop rejection
<p>Raw Material Appropriateness for Building off the Road Green Tyre</p> <p>Theory: 4 hours</p> <p>Practical: 120 hours</p> <p>Corresponding NOS: RSC/N5020</p>	<ul style="list-style-type: none"> • Prepare the components required for building off the road green tyre • Analyse the specification and schedule while arranging the materials • Practise using suitable material for desired results • Use drum paint and solvent for freshening • Select well-prepared material to avoid unwanted consequences • Perform sequential application of components for positive impact • Use tread, chafer and side wall for its effect on cured tyre • Practise right dimension of the components • Inspect tyres getting scrapped due to building fault and resolve the issue • Importance of identifying non-conforming products and their storage
<p>Operation</p> <p>Theory: 4 hours</p> <p>Practical: 120 hours</p>	<ul style="list-style-type: none"> • Analyse sequence of consolidating components as per guidelines issued by the technical team • Place bead on grooves on either side of the chuck • Apply ply spirally over the bead rings at a specified bais angle ensuring

<p>Corresponding NOS: RSC/N5020</p>	<p>beads are well covered and the ends stitched</p> <ul style="list-style-type: none"> • Perform the application of stitchers and appropriate stitching pressures for proper and uniform stitching of treads with the ply/plies • Examine that there are no air traps at the bead area • Release the tyre after tyre building is over • Use solvent to freshen the ply or tread if they are of low tack • Practice ways to inspect the green tyre for blemishes and air pockets • Perform quality checks as per the requirement • Compare different units of measurement
<p>Health and Safety</p> <p>Theory: 4 hours</p> <p>Practical: 120 hours</p> <p>Corresponding NOS: RSC/N5020</p>	<ul style="list-style-type: none"> • Use of certified tools and equipment for tyre building • Maintain safe distance from rotating drum • Perform minimal usage of solvent • Practise all safety norms (such as wearing protective gloves, masks and earplugs) • Prepare material and energy audit reports • Check for spills/leakages in various tasks/activities/processes • Prioritise dealing with emergencies, for example, power failures, fire, system failures, spillages and manual intervention to avoid disasters • Collect information on the pattern of electricity and fuel consumption • Carry out routine cleaning of tools, machines and equipment • Replace materials with environment friendly substitutes • Monitor material and water conservation processes • Comply with health, safety, environment guidelines and regulations

	<p>in accordance with international/national standards or the organizational standards</p> <ul style="list-style-type: none"> • Report malfunctioning (fumes/sparks/emission/vibration/noise) and lapse in maintenance of equipment • Implement ways to conserve energy
<p>Post Tyre Building Operation</p> <p>Theory: 4 hours</p> <p>Practical: 120 hours</p> <p>Corresponding NOS: RSC/N5021</p>	<ul style="list-style-type: none"> • Place the builder number sticker on the bead area for traceability • Practise marking on the tyre with crayon • Inspect green tyre and check for wrinkles and air pockets • Rectify /repair wrinkles and awl vent the air-pockets • Practice loading the built green tyre on plants equipped with overhead hook conveyors • Perform patch repair if inner liner is damaged or with minor holes • Record number of tyres built and number scrapped or held for disposition • Analyse the equipment required for tyre building • Report any repair and maintenance requirement to the Supervisor • Propose the disposal of the unused components to the designated place • Assemble the special equipment required for each tyre and size properly in the designated area
<p>Material Disposal and Batch Marking</p> <p>Theory: 4 hours</p> <p>Practical: 120 hours</p> <p>Corresponding NOS: RSC/N5021</p>	<ul style="list-style-type: none"> • Perform code marking • Analyse the importance of identification and traceability by marking code, date and shift on the tyre • Practise marking as per the guidelines/instructions laid down by the company • Evaluate the importance of identifying non-conforming products and their storage • Assess the code marking techniques

	<ul style="list-style-type: none"> • Carry out placing builder number sticker on the bead toe area of the tyre(as per the SOP)
<p>Pre-housekeeping activities</p> <p>Theory: 4 hours</p> <p>Practical: 120 hours</p> <p>Corresponding NOS: RSC/N5001</p>	<ul style="list-style-type: none"> • Inspect the area while taking into account various surfaces • Analyse the material requirements for cleaning the areas inspected, by considering risk, time, efficiency and type of stain • Examine if the cleaning equipment is in proper working condition • Practise the selection of suitable alternatives for cleaning the areas in case the appropriate equipment and materials are not available and inform the appropriate person • Prepare the sequence for cleaning the area to avoid re-soiling clean areas and surfaces • Devise ways to inform the affected people about the cleaning activity • Display the appropriate signage for the work being conducted • Test if there is adequate ventilation for the work being carried out • Practise wearing the personal protective equipment required for the cleaning method and materials being used
<p>Housekeeping Operations</p> <p>Theory: 4 hours</p> <p>Practical: 120 hours</p> <p>Corresponding NOS: RSC/N5001</p>	<ul style="list-style-type: none"> • Use the correct cleaning method for the work area • Analyse the type of soiling and surface • Carry out cleaning activity without disturbing others • Practise dealing with accidental damage, if any, caused while carrying out the work • Perform reporting to the appropriate person any difficulties in carrying out your work • Prepare a report describing responsibility that is beyond one's skill to the concerned authority • Examine most appropriate place to carry out test cleans and why this

	<p>should be done before applying treatments</p> <ul style="list-style-type: none"> • Modify the operations as per the convenience • Prepare the surface oil-proof to avoid slippage • Report if there are any scrap materials lying around • Maintain housekeeping equipment and supplies • Practise storage of housekeeping equipment and supplies • Comply with procedures to deal with any accidental damage caused during the cleaning process • Demonstrate ways to make area clean and dry after the completion of work • Return the equipment, materials and personal protective equipment that were used to the right places making sure they are clean, safe and securely stored • Dispose of the waste garnered from the activity in an appropriate manner • Perform proper disposal of used and un-used solutions according to manufacturer's instructions, and clean the equipment thoroughly • Maintain schedules and records for housekeeping duty • Replenish any necessary supplies or consumables
<p>Carrying out Reporting, Documentation and Information Security</p> <p>Theory: 4 hours</p> <p>Practical: 120 hours</p>	<ul style="list-style-type: none"> • Report data/problems/incidents as applicable in a timely manner • Practise reporting to the appropriate authority as laid down by the company • Compare different methods of recording information • Analyse reporting procedures as prescribed by the company • Evaluate procedures for recording damage, breakages etc. • Prepare documentation to be completed relating to one's role

<p>Corresponding NOS: RSC/N5002</p>	<ul style="list-style-type: none"> • Assemble details accurately in an appropriate format • Construct all documentation within stipulated time according to company procedure • Examine the final document meets the requirements of the persons who requested it or make any amendments accordingly • Inspect all the documents before sending it to concerned authorities • Practice ways to respond to requests for information in an appropriate manner • Perform organisational procedures in respect to information security • Use different methods to ensure secured information • Inform the appropriate authority of requests for information received • Interpret the consequences if the procedures are not followed
<p>Carrying out quality checks</p> <p>Theory: 4 hours</p> <p>Practical: 120 hours</p> <p>Corresponding NOS: RSC/N5003</p>	<ul style="list-style-type: none"> • Perform total range of checks regularly and consistently • Practise the use appropriate measuring instruments, equipment, tools, accessories etc. as required • Point out non-conformities to quality assurance standards • Inspect potential causes of non-conformities to quality assurance standards • Analyse the impact on final product due to non-conformance to company standards • Evaluate the need for action to ensure that problems do not recur • Suggest corrective action to address problem • Review effectiveness of corrective action • Interpret the results of the quality check correctly • Examine the results of the findings within stipulated time

	<ul style="list-style-type: none"> • Suggest results of the findings with QC in charge/appropriate authority • Record of results of action taken • Assemble adjustments not covered by established procedures for future reference • Review effectiveness of action taken • Use reporting procedures where the cause of defect cannot be identified
<p>Carrying out Problem Identification And Escalation</p> <p>Theory: 4 hours</p> <p>Practical: 120 hours</p> <p>Corresponding NOS: RSC/N5004</p>	<ul style="list-style-type: none"> • Analyse defects/indicators of problems • Inspect any wrong practices that may lead to problems • Perform practices that may impact the final product quality • Examine if the problem has occurred before • Locate other operations that might be impacted by the problem • Modify ways to overcome delay • Test materials and samples for non-conformance and evaluate the results wherever necessary • Practice applicable corrections and formulate corrective action • Formulate action in a timely manner • Communicate problem/remedial action to appropriate parties • Demonstrate corrective action for problems identified according to the company procedures • Report/document problem and corrective action in an appropriate manner • Monitor corrective action • Implement corrective action to resolve problems

Units	Topics/Expected Key Learning outcomes
<p>Equipment readiness</p> <p>Theory: 4 hours</p> <p>Practical: 79 hours</p> <p>Corresponding NOS: RSC/N1901</p>	<ul style="list-style-type: none"> • Demonstrate equipment preparation process as per company requirements • Practise no delays which may be caused as a result of improper preparation and failure to identify problems • Demonstrate how safety devices function properly on the machine before starting the work • Manage guide lights for breaker and chaffer centering
<p>Raw material Appropriateness for Preparing Tyre Building Machine and Collecting All Components Required for Bias Tyre Building</p> <p>Theory: 4 hours</p> <p>Practical: 78 hours</p> <p>Corresponding NOS: RSC/N1901</p>	<ul style="list-style-type: none"> • Perform collection of all materials required for the batch • Compare the batch code of each material with the batch code on the job schedule given by the planning department • Demonstrate the use of components such as bead, tread, plies, freshening solvent, swab and hand stitcher etc • Manage the approval of laboratory for the material to be fed • Manage use of identified and approved materials
<p>Manage Health and Safety</p> <p>Theory: 4 hours</p>	<ul style="list-style-type: none"> • Demonstrate how to ensure no spillage of Naphtha or solvent • Manage handling of tyres safely by using gloves to avoid continued contact

<p>Practical: 79 hours</p> <p>Corresponding NOS: RSC/N1901</p>	<p>with harmful materials like carbon black etc.</p> <ul style="list-style-type: none"> • Demonstrate health, safety, environment guidelines, regulations etc.in accordance with company procedure • Use Forklift / Trolleys etc. while lifting heavy materials such as heavy finished tyres to avoid physical injury • Practise compliance with applicable environmental, waste management and disposal regulations • Perform routine cleaning of tools, machines and equipment • Practise revised processes and environment friendly materials in a phased manner • Perform disposal of non-recyclable waste appropriately
<p>Raw material Appropriateness for Building 2/3/4 wheeler passenger vehicle tyre</p> <p>Theory: 4 hours</p> <p>Practical: 78 hours</p> <p>Corresponding NOS: RSC/N1902</p>	<ul style="list-style-type: none"> • Demonstrate through visual inspection, that tyre building material is of desired quality (free of contamination etc.)

<p>Operation of Building 2/3/4 wheeler passenger vehicle tyre</p> <p>Theory: 4 hours</p> <p>Practical: 79 hours</p> <p>Corresponding NOS: RSC/N1902</p>	<ul style="list-style-type: none"> • Practice machine set up as per type of the equipment/machine as per SOP • Demonstrate how guide lights function for breaker and chaffer centering • Perform application of drum cement on building drum • Assess Plies, number as required as per tyre size and Ply Rating (PR) on the drum at opposite angle followed with consolidation with hand tool • Perform application of breaker on the top of the band • Analyse application of Bead, numbers and construction as per tyre size and PR, which are placed on bead holder on both side of the drum, with pressure by movement of the holders • Perform application of ply turn-up & turn-down stitchers before & after applying bead • Practise application of chafer on both ends / edges of the green tyre • Perform application of Tread on the top • Perform centre line marking • Manage the quality of output and company's product requirement
<p>Operation of Post tyre building activities for</p>	<ul style="list-style-type: none"> • Practise green tyre removal from the TBM and putting on a trolley

<p>passenger vehicle tyres</p> <p>Theory: 4 hours</p> <p>Practical: 79 hours</p> <p>Corresponding NOS: RSC/N1903</p>	<ul style="list-style-type: none"> • Perform spray painting the tyre from the inside and outside and dry in a hot chamber and allow to cool for definite time • Demonstrate the process of removal of tyre and its transportation to curing section for tyre curing • Perform visual inspection of tyre for defects
<p>Material disposal, Batch Marking and Sampling</p> <p>Theory: 12 hours</p> <p>Practical: 234 hours</p> <p>Corresponding NOS: RSC/N1903</p>	<ul style="list-style-type: none"> • Practise carrying out disposal of waste material safely • Demonstrate tyre making for the right product • Practise carrying out tyre marking as per instructions laid down by the company (in terms of weight, colour etc.) • Perform lab testing, if warranted • Perform sample specified lab testing
<p>Pre housekeeping activities</p> <p>Theory: 4 hours</p> <p>Practical: 79 hours</p> <p>Corresponding NOS: RSC/N5001</p>	<ul style="list-style-type: none"> • Perform inspection of the area while taking into account various surfaces • Practise the sequence for cleaning the area to avoid re-soiling clean areas and Surfaces • Determine the appropriate signage for the work being conducted
<p>Operations To carry out housekeeping</p> <p>Theory: 4 hours</p>	<ul style="list-style-type: none"> • Use the correct cleaning method for the work area, type of soiling and surface • Evaluate cleaning activity without disturbing others

<p>Practical: 79 hours</p> <p>Corresponding NOS: RSC/N5001</p>	<ul style="list-style-type: none"> • Report to the appropriate person any difficulties in carrying out your work • Report through identification to the appropriate person any additional cleaning required that is outside one's responsibility or skill
<p>Post housekeeping activities</p> <p>Theory: 4 hours</p> <p>Practical: 79 hours</p> <p>Corresponding NOS: RSC/N5001</p>	<ul style="list-style-type: none"> • Undertake assurance of completion of work leaving the area clean and dry, meeting requirements • Review the return of equipment, materials and personal protective equipment that were used to the right places making sure they are clean, safe and securely stored • Demonstrate disposal of the waste garnered from the activity in an appropriate manner • Demonstrate disposal of used and un-used solutions according to manufacturer's instructions, and clean the equipment thoroughly
<p>General Responsibility</p> <p>Theory: 4 hours</p> <p>Practical: 79 hours</p> <p>Corresponding NOS: RSC/N5001</p>	<ul style="list-style-type: none"> • Analyse any necessary supplies or consumables

<p>Reporting, Recording and Documentation</p> <p>Theory: 4 hours</p> <p>Practical: 78 hours</p> <p>Corresponding NOS: RSC/N5002</p>	<ul style="list-style-type: none"> • Report data/problems/incidents as applicable in a timely manner • Report to the appropriate authority as laid down by the company • Demonstrate the recording of details accurately in an appropriate format
<p>Information Security</p> <p>Theory: 4 hours</p> <p>Practical: 79 hours</p> <p>Corresponding NOS: RSC/N5002</p>	<ul style="list-style-type: none"> • Practise Informing the appropriate authority of requests for information received
<p>Inspection, analysing and reporting</p> <p>Theory: 4 hours</p> <p>Practical: 79 hours</p> <p>Corresponding NOS: RSC/N5003</p>	<ul style="list-style-type: none"> • Use appropriate measuring instruments, equipment, tools, accessories etc.as required • Evaluating the need for action to ensure that problems do not recur • Demonstrate corrective action to address problem • Practise effectiveness of corrective action • Interpret the results of the quality check correctly • Use results of the findings with QC in charge/appropriate authority • Use the results of the findings within stipulated time

	<ul style="list-style-type: none"> • Practise adjustments not covered by established procedures for future reference
<p>Problem Identification and Escalation</p> <p>Theory: 4 hours</p> <p>Practical: 79 hours</p> <p>Corresponding NOS: RSC/N5004</p>	<ul style="list-style-type: none"> • Practise no delays as a result of failure to escalate problems • Demonstrate problem as per laid down by escalation matrix • Evaluate the problem within stipulated time • Analyse the problem in an appropriate manner • Evaluate that no delays are caused as a result of failure to escalate problems
<p>Necessary Action</p> <p>Theory: 4 hours</p> <p>Practical: 79 hours</p>	<ul style="list-style-type: none"> • Use appropriate materials and sample, conduct tests and evaluate results to establish reasons to confirm suspected reasons for non-conformance (where required) • Demonstrate the ways to Communicate problem/remedial action to appropriate parties • Use corrective action in a timely manner • Use corrective action for problems identified according to the company Procedures • Practise reporting/documenting problem and corrective action in an appropriate manner • Evaluate implementation of corrective action taken to determine if the

	<p>problem has been resolved</p> <ul style="list-style-type: none"> • Use corrective action for problems identified according to the company procedures
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Tyre Building Operator- Commercial Vehicles- - Semesters 5-6

Units	Topics/Expected Key Learning outcomes
<p>Equipment readiness</p> <p>Theory: 4 hours</p> <p>Practical: 79 hours</p> <p>Corresponding NOS: RSC/N2101</p>	<ul style="list-style-type: none"> • Demonstrate equipment preparation process as per company requirements • Practise no delays which may be caused as a result of improper preparation and failure to identify problems • Demonstrate how safety devices function properly on the machine before starting the work • Manage guide lights for breaker and chaffer centering

<p>Raw material Appropriateness for Preparing Tyre Building Machine and Collecting All Components Required for Bias Tyre Building</p> <p>Theory: 4 hours</p> <p>Practical: 78 hours</p> <p>Corresponding NOS: RSC/N2101</p>	<ul style="list-style-type: none"> • Perform collection of all materials required for the batch • Compare the batch code of each material with the batch code on the job schedule given by the planning department • Demonstrate the use of components such as bead, tread, plies, freshening solvent, swab and hand stitcher etc • Manage the approval of laboratory for the material to be fed • Manage use of identified and approved materials
<p>Manage Health and Safety</p> <p>Theory: 4 hours</p> <p>Practical: 79 hours</p> <p>Corresponding NOS: RSC/N2101</p>	<ul style="list-style-type: none"> • Demonstrate how to ensure no spillage of Naphtha or solvent • Manage handling of tyres safely by using gloves to avoid continued contact with harmful materials like carbon black etc. • Demonstrate health, safety, environment guidelines, regulations etc.in accordance with company procedure • Use Forklift / Trolleys etc. while lifting heavy materials such as heavy finished tyres to avoid physical injury • Perform compliance with applicable environmental, waste management and disposal regulations • Perform routine cleaning of tools, machines and equipment

	<ul style="list-style-type: none"> • Practise revised processes and environment friendly materials in a phased manner • Perform disposal of non-recyclable waste appropriately
<p>Raw material Appropriateness for Building LCV/HCV/Tractor Commercial Vehicle Tyre</p> <p>Theory: 4 hours</p> <p>Practical: 78 hours</p> <p>Corresponding NOS: RSC/N2102</p>	<ul style="list-style-type: none"> • Demonstrate through visual inspection, that tyre building material is of desired quality (free of contamination etc.)
<p>Operation of Building LCV/HCV/Tractor Commercial Vehicle Tyre</p> <p>Theory: 4 hours</p> <p>Practical: 78 hours</p> <p>Corresponding NOS: RSC/N2102</p>	<ul style="list-style-type: none"> • Perform application of drum cement on building drum, if necessary • Practise application of pre-built 1st band followed by 2nd Band and so on as per tyre size and PR • Perform application of 3rd band and do turn down operation • Practise application of Breaker on the top of the band • Perform application of Bead, numbers and construction as per tyre size and PR, which are placed on bead holder on both side of the drum, with pressure

	<p>by movement of the holders</p> <ul style="list-style-type: none"> • Practise application of ply turn-up & turn-down stitchers are applied before & after applying bead • Perform application of chafer on both ends / edges of the green tyre • Practise application of Tread on the top • Demonstrate the rotation of drum at controlled speed, how to freshen surface and apply stitchers as per process requirement during the building process • Perform application of centre line marking is on the top of tread • Manage the quality of output matching company's product requirements
<p>Operation of Post tyre building activities for commercial vehicle tyres</p> <p>Theory: 4 hours</p> <p>Practical: 79 hours</p> <p>Corresponding NOS: RSC/N2103</p>	<ul style="list-style-type: none"> • Practise green tyre removal from the TBM and putting on a trolley • Perform spray painting the tyre from the inside and outside and dry in a hot chamber and allow to cool for definite time • Demonstrate the process of removal of tyre and its transportation to curing section for tyre curing • Perform visual inspection of tyre for defects

<p>Material disposal, Batch Marking and Sampling</p> <p>Theory: 12 hours</p> <p>Practical: 237 hours</p> <p>Corresponding NOS: RSC/N2103</p>	<ul style="list-style-type: none"> • Practise carrying out disposal of waste material safely • Demonstrate tyre making for the right product • Practise carrying out tyre marking as per instructions laid down by the company (in terms of weight, colour etc.) • Perform lab testing, if warranted • Perform sample specified lab testing
<p>Pre housekeeping activities</p> <p>Theory: 4 hours</p> <p>Practical: 79 hours</p> <p>Corresponding NOS: RSC/N5001</p>	<ul style="list-style-type: none"> • Perform inspection of the area while taking into account various surfaces • Practise the sequence for cleaning the area to avoid re-soiling clean areas and Surfaces • Determine the appropriate signage for the work being conducted
<p>Operations To carry out housekeeping</p> <p>Theory: 4 hours</p> <p>Practical: 79 hours</p> <p>Corresponding NOS: RSC/N5001</p>	<ul style="list-style-type: none"> • Use the correct cleaning method for the work area, type of soiling and surface • Evaluate cleaning activity without disturbing others • Report to the appropriate person any difficulties in carrying out your work • Report through identification to the appropriate person any additional cleaning required that is outside one's responsibility or skill

<p>Post housekeeping activities</p> <p>Theory: 4 hours</p> <p>Practical: 78 hours</p> <p>Corresponding NOS: RSC/N5001</p>	<ul style="list-style-type: none"> • Undertake assurance of completion of work leaving the area clean and dry, meeting requirements • Review the return of equipment, materials and personal protective equipment that were used to the right places making sure they are clean, safe and securely stored • Demonstrate disposal of the waste garnered from the activity in an appropriate manner • Demonstrate disposal of used and un-used solutions according to manufacturer's instructions, and clean the equipment thoroughly
<p>General Responsibility</p> <p>Theory: 4 hours</p> <p>Practical: 78 hours</p> <p>Corresponding NOS: RSC/N5001</p>	<ul style="list-style-type: none"> • Analyse any necessary supplies or consumables
<p>Reporting, Recording and Documentation</p> <p>Theory: 4 hours</p> <p>Practical: 78 hours</p> <p>Corresponding NOS: RSC/N5002</p>	<ul style="list-style-type: none"> • Report data/problems/incidents as applicable in a timely manner • Report to the appropriate authority as laid down by the company • Demonstrate the recording of details accurately in an appropriate format • Perform completion of all documentation within

	stipulated time according to company procedure
Information Security Theory: 4 hours Practical: 79 hours Corresponding NOS: RSC/N5002	<ul style="list-style-type: none"> • Practise Informing the appropriate authority of requests for information received
Inspection, Analysing and Reporting Theory: 4 hours Practical: 79 hours Corresponding NOS: RSC/N5003	<ul style="list-style-type: none"> • Use appropriate measuring instruments, equipment, tools, accessories etc.as required • Evaluating the need for action to ensure that problems do not recur • Demonstrate corrective action to address problem • Practise effectiveness of corrective action • Interpret the results of the quality check correctly • Use results of the findings with QC in charge/appropriate authority • Use the results of the findings within stipulated time • Practise adjustments not covered by established procedures for future reference
Problem Identification and Escalation Theory: 4 hours	<ul style="list-style-type: none"> • Practise no delays as a result of failure to escalate problems

<p>Practical: 79 hours Corresponding NOS: RSC/N5004</p>	<ul style="list-style-type: none"> • Demonstrate problem as per laid down by escalation matrix • Evaluate the problem within stipulated time • Analyse the problem in an appropriate manner • Evaluate that no delays are caused as a result of failure to escalate problems
<p>Necessary Action</p> <p>Theory: 4 hours</p> <p>Practical: 79 hours</p> <p>Corresponding NOS: RSC/N5004</p>	<ul style="list-style-type: none"> • Use appropriate materials and sample, conduct tests and evaluate results to establish reasons to confirm suspected reasons for non-conformance (where required) • Demonstrate the ways to Communicate problem/remedial action to appropriate parties • Use corrective action in a timely manner • Use corrective action for problems identified according to the company Procedures • Practise reporting/documenting problem and corrective action in an appropriate manner • Evaluate implementation of corrective action taken to determine if the problem has been resolved • Use corrective action for problems identified according to the company procedures

Assessment strategy (Basic training and On the Job Training):

1. Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Performance Criterion (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. Assessment will be conducted for all compulsory NOS, and where applicable, on the selected elective/option NOS/set of NOS.
4. Individual assessment agencies will create unique question papers for theory part for each candidate at each examination/training center (as per assessment criteria provided in the Qualification Packs and Model Curricula for all four job roles.
5. Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/training center based on this criterion.
6. To pass the Qualification Pack, every trainee should score a minimum of 70% of aggregate marks to successfully clear the assessment.
7. In case of unsuccessful completion, the trainee may seek reassessment on the Qualification Pack.
8. The assessment of candidates will be conducted at NOS level.
9. Assessment criterion has been defined for each NOS and it includes both theoretical and practical skills on which the candidate will be assessed.
10. Practical knowledge is tested through assessor driven evaluation, Situational Judgment Tests and Simulations. A mix of the three is used to evaluate the trainee on his practical knowledge of the QP.
11. The candidate is assessed on skills, knowledge and behavioural aspects.

Annexure A

Attachment : List of Tools and Equipment

- Tyre building machine
- Strip Cutter/Feeders
- Band Builders
- Bead Flipping Machines

- Sidewall Buffers
- Guillotine Cutters
- Slab Cutters
- Fabric Processing Machines
- Mill Aprons
- Mill Feed Conveyors
- Mill Strip Blenders
- Air drums, etc.
- Tread
- Cords
- Elastomer
- Pull-out Spring Assembly
- Down Tool Assembly
- UP Tool Assembly
- Bead Segment Spacer Magnetic-Non Magnetic
- Knurled Shell Pipe
- Line Marking Container Set
- Trimming Blade Holder