



National Association of Woodworkers N.Z. Inc.

National Certificate in Woodturning

This is a hands-on training course intended to take the novice or inexperienced woodturner from the very beginning of their learning through to creating exhibition quality work. Time with a qualified/experienced tutor and time for the student to practice alone are required. Measurable outcomes are specified and the tutor must ensure that the student achieves these outcomes.

This course was designed by woodturners for Aoraki Polytechnic and it is now delivered by the National Association of Woodworkers (NAW). The NAW requires that each participating student be a member of the NAW. The NAW further requires that a representative of each participating club attend a meeting with other club representatives once a year to share knowledge and consider improvements to the course.

Each club may choose their own timescale for delivery of this training. This may be shorter evening sessions or full day sessions. The time requirements set out in the documents for both time with the tutor and time on their own should be met. The learning outcomes set out in the documents must be met by the student and signed off by the tutor.

There is no specified order for undertaking the modules within each stage but each stage should be completed before progressing to the next stage. It is also wise for students to complete all compulsory modules of Stage 2 before beginning the elective modules for that stage. Students may be competent to undertake Stage 3 elective modules while also doing Stage 3 compulsory modules. Note that a pre-requisite for Stage 3 elective modules is that the same elective subject has been completed in Stage 2. Similarly Stage 4 electives require that Stages 2 and 3 electives on the same subject be completed.

Some clubs choose to integrate the Stage 2 modules so that some subjects (eg bandsaw) are spread over many learning sessions. If this is done it is still important for the student to complete the time and woodturning work required to meet the outcomes.

Note: Additional information may be obtained from Dick Veitch at dveitch@kiwilink.net.nz

National Certificate in Woodturning – Course Content

Stage 1 – Introduction All students to complete this stage.

Module Name	Tuition Hours	Student Hours	Learning Outcome	Possible Projects
Introduction to Woodturning	12	20	Turn on and operate the lathe, Prepare wood for turning, Identify chisels, Use a chisel, Sharpen tools, Plan and work to designs, Finish turned objects, Use a bandsaw	Egg cup, bag handle, honey dipper, small bowl

Stage 2 – Woodturning Fundamentals

Compulsory Modules All students to complete these seven modules.

Module Name	Tuition Hours	Student Hours	Learning Outcome	Possible Projects
Bandsaw	6	16	Turn on the bandsaw. Check and set guides on the bandsaw and make a straight cut. Cut a circle of wood up to 100mm thick. Change the band. Clean and carry out minor maintenance tasks. Sharpen a parting tool.	Lidded box, tea light
Chucking	6	16	Turn a blank between centres using a 3 or 4 jaw chuck, Turn a bowl in a 3 or 4 jaw chuck. Use a spigot and a dovetail mount. Sharpen a 55 ° bowl gouge.	Two bowls, small footed open vase, mortar and pestle.
Faceplate Work	6	16	Mount a blank correctly on a faceplate. On a faceplate turn the outside of a bowl. Sharpen a small 35 ° bowl gouge	Bowl created using a faceplate as initial mounting. Top of wigstand.
Finishing	6	16	Work through grades of sandpaper by hand to prepare work for a finish. Apply an oil finish to completed work, Apply a sealer and wax to completed work. Employ safe practices to protect against dust, noise and eye damage. Sharpen a skew chisel.	Small platter, partially-turned before class, goblet
Spindle Turning	6	20	Round a piece of wood between centres. Turn beads on a piece of wood held between centres. Complete a spindle turned project. Sharpen a spindle roughing gouge.	Medium cylinder used for practice, i.e. creating and removing beads, coves, and v-cuts. Foot roller. Stem for wig stand.
Timber	6	12	Identify some commonly used timbers. Identify some commonly used noxious timbers. Protect themselves against the dangers of dust. Sharpen a large bowl gouge.	Egg using highly-figured timber. Roughed-out green bowl, prepared for storage
Tools	6	12	Use a parting tool. Use a bowl, roughing and spindle gouge. Use a grinder to sharpen tools. Sharpen a spindle gouge. Hone a chisel.	Tool handle (round). Small bowl to meet specific size requirements.

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S2 Elective Modules – each student to complete four of the following.

Module Name	Tuition Hours	Student Hours	Learning Outcome	Possible Projects
Carving	6	16	Draw and carve a design on a turned project, Use some basic wood carving tools,	Wide-rimmed bowl (turned previously) with addition of carved motif, 200-250mm diameter
Children's Toys	6	16	Produce a toy that includes a turned component, Finish with a child safe finish.	Toys that are fully or primarily turned: ball-and-cup toy babies' rattles with noisemaking cavity or captive rings
Colouring	6	16	Mix water or oil colours to achieve the desired depth of colour. Apply water or oil colours, or waxes or pastes to a finished article, Apply a finish to give lift to the colours.	Wide-rimmed bowl / plate / teal ight, prepared in advance for application of colour, 200 - 250 mm diameter
Embellishment	6	16	Index and add grooves to a turned piece. Use a dremel to add a simple texture to a turned piece	Two small (200mm) bowls / platters with wide rims
Jewellery	6	16	Turn small beads. Turn a pendant. Mount turnings onto clips, mounts and slides	3, 5 or more identical beads, finished using a small jam chuck and strung using appropriate fittings. Pendant of student's design
Laminating	6	16	Select the appropriate quality wood to glue together, Prepare the joints for laminating, Select the appropriate glue, Glue and clamp their work, Produce a laminated and turned project	A bowl with a laminate rim and a weed pot with inset laminates as per the SAWG project sheets.
Off-centre Turning	6	16	Select the appropriate material, Select the appropriate drive spur, Select the appropriate drive spur, Use a safe lathe speed, Produce a simple off centre project, between centres	Letter opener as per SAWG project sheet.
Ornamental Turning	6	16	Turn wood ready for a simple project for the rose engine. Make a pattern on the wood using the rose engine	
Turning Other Materials	6	16	Turn a pen using one of the following materials:., - Corian, - Acrylic, - Aluminium	Twist pen with barrel turned from acrylic. Copper ferrule, trimmed and polished on spigot chuck for student's use outside class

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Stage 3 – Intermediate Woodturning

Compulsory Modules All students to complete these seven modules.

Module Name	Tuition Hours	Student Hours	Learning Outcome	Possible Projects
Chuckling	6	16	Clean the bottom of a bowl using Cole jaws (or similar). Use a jam chuck to complete a project. Clean the bottom of a bowl using a vacuum chuck	Students complete bottoms of two bowl turned previously. A lidded box is made and finished using a jam chuck.
Design and Form	4	12	Produce a design for a wood turned object, that includes all necessary features, Produce the object according to design specifications	Design a bowl that reflects good design principles. Turn a bowl to match the design
Faceplate Work	6	16	Mount a natural edged bowl blank correctly onto a face plate, Mount a winged bowl blank correctly on to a face plate, Turn the outside of a natural edged bowl blank, Turn the outside of a winged bowl blank	Natural edged bowl. Bowl with two wings (from half-log). Small platter with wide, thin rim
Finishing	6	16	Fill cracks and holes in turned work, Work through grades of sandpaper by power to prepare for a finish, Wet sanding, Spray lacquer or polyurethane finish, Employ safe practices to protect against dust, solvents, noise and eye damage.	Medium-sized platter. Small item made of timber that has gaps or cracks to be filled
Hollow Form	12	20	Design and produce a vessel, Use hollowing tools, Clear shavings from inside of vessel	All projects start with an end grain block 150 x 150 x 250. Day one an open-mouth vase. Day two a hollow form with 75% opening.
Spindle Turning	6	20	Design a project using multiple centres, Mark centres on a blank, Turn a project using multiple centres	A chair leg, matched candlesticks, balusters, or other spindle item to be replicated
Tools	6	10	Use a bowl saving device. Sharpen and use a scraper	Matching bowls from bowlsaved blanks

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S3 Elective Modules – each student to complete four of the following. The student must have completed Stage 2 of each elective chosen for Stage 3.

Module Name	Tuition Hours	Student Hours	Learning Outcome	Possible Projects
Carving	6	16	Design a turned item to accommodate part of it being carved. Carve the item as designed.	Student's choice: Vase or bowl with carved rim, or three-footed bowl.
Children's Toys	6	16	Produce a children's toy that includes a turned component and uses at least one other woodworking discipline in the production of the toy.	Student's choice of toys that include one or more woodworking disciplines besides turning: • Pull toy • Jointed doll • Carousel
Colouring	6	16	Apply gold or silver leaf foils to produce a gilded effect on parts of turned wooden projects. Apply crackle paints and crackle effects to parts of turned wooden projects. Apply texture pastes to parts of turned wooden projects. Apply a finish to add protection to the projects.	Colour applied to small (150mm) broad-rimmed bowls made prior to the class.
Embellishment	6	16	Use a texture tool for embellishment. Use a chatter tool for embellishment. Use a poker machine for embellishment. Use a Dremel or similar machine for embellishment. Apply appropriate finishes to decorated areas.	Partially-turned items of student's choice for embellishment (plus waste surface for experimenting).
Jewellery	6	16	Design and turn a matched three piece set of jewellery (one brooch or pendant, plus an earring set.)	Student's design for three matching items of jewellery (pair of earrings plus pendant).
Laminating	6	16	Prepare the joints using a table saw and/or buzzer with a purpose made jig. Laminate and clamp the bowl. Produce a segmented bowl.	Laminated bowl made as per SAWG project sheet.
Off-centre Turning	6	16	Select or design an off-centre faceplate (cross-grain) project that can be made without use of specialised equipment. Complete the off-centre faceplate (cross-grain) project	Off-centre bowl as per SAWG project sheet and course notes.
Ornamental Turning	6	16	Design an item to be decorated on more than one surface using the rose engine. Make a jig to achieve the desired design. Make the turned item and complete the surface decoration.	
Turning Other Materials	6	16	Turn a project using either Tagua nuts, or antler. Prepare and turn an embellishment for a wood turned project using bone.	Bud vase of tagua nut.. The SAWG project: "Box, Deer Antler". Bone finial or button for the top of a box.

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Stage Four – Advanced Woodturning**Compulsory Modules** All students to complete these four modules.

Module Name	Tuition Hours	Student Hours	Learning Outcome	Possible Projects
Design and Form	4	12	Research and develop a written design according to customer/tutor specifications. Produce a turned project that meets customer/tutor specifications	Design & execution of a set of items for the office of a corporate executive. Turning an item that corrects a design flaw in a previously-turned or pictured item.
Finishing	6	16	Select and apply a finish that is appropriate to particular woods and items.	Items of students' choice, one with smooth surface and one with textured or natural surface, both with "competition-grade" finish.
Hollow Form	12	20	Design and produce a deep hollowed vessel with a narrow opening.	All projects start with an end grain block 150 x 150 x 250. Day one a hollow form as specified. Day two another of similar size but add a rim, collar, or lid.
Tool Development	4	10	Modify or create a tool or jig for turning. Demonstrate the successful use of the new or modified tool or jig.	A tool or jig of reasonable complexity created to achieve a purpose and successfully used for that purpose in turning

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S4 Elective Modules – each student to complete three of the following. The student must have completed Stages 2 and 3 of each elective chosen for Stage 4.

Module Name	Tuition Hours	Student Hours	Learning Outcome	Possible Projects
Carving	6	16	Design a turned item where the carving significantly alters the form of the finished work. Produce the carved item	Student's choice of project that meets learning outcomes
Children's Toys	6	16	Design and produce a decorated toy that includes multiple turned components	Student's choice of project that meets learning outcomes
Colouring	6	16	Apply a marbled paint effect to a turned wood project using traditional marbling techniques. Successfully mix and apply a variety of colour combinations using traditional marbling techniques. Apply a lasting finish to the marbled area to add depth and protect it.	Colour applied to small (150mm) broad-rimmed bowls made prior to the class.
Embellishment	6	16	Use copper, gold or other metals to embellish a wood turned project. Use a range of natural materials such as rope, cord, feathers, stones, beads to embellish a turned wooden project.	Student's choice of project that meets learning outcomes
Jewellery	6	16	Design and produce a jewellery set (three of the following – bangle, pendant, earring set, ring, brooch, stick pin) that incorporates colour, added media or other embellishment	Student's choice of project that meets learning outcomes
Laminating	6	16	Design and produce a woodturned project to include an irregular shape within laminated segments.	Bowl or hollow form, as per the SAWG "Segment Patterns" in the Tips and Jigs part of their website
Off-centre Turning	6	16	Design and produce an off centre and/or multi axis project that extends the application of off centre principles and includes the use of at least three different centres or axis.	A range of projects for students to choose from or develop their own.
Ornamental Turning	6	16	Design an object to make effective use of an ornamental turning jig. Turn wood ready for the ornamental turning jig. Make a pattern on the wood using the ornamental turning jig. Design an item to be decorated on more than one surface, using an ornamental jig. Make the turned and embellished item.	
Turning Other Materials	6	16	Design and produce a wood turned article which has an area of resin as a finished decorative feature. Include inlays of other materials or objects incorporated in resin as a feature. Select and use the appropriate tools necessary to turn an article that includes poured resins. Finish resins on the lathe to a high polished standard.	A bowl with a resin rim that includes added decorative items.

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