



National Certificate in Woodturning

The National Association of Woodworkers offers the Certificate in Woodturning as a high quality, nation-wide, woodturner training programme. This programme was developed by Aoraki Polytechnic.

Benefits include more complete and professional training for our members, including the opportunity for members to earn a recognised qualification.

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. Experienced turners may find the initial courses fairly easy but they will benefit from going “back to basics”. This is training at a tertiary education level. Time with a qualified/experienced tutor and time for the student to practice alone are required as specified in the following tables. The tutor and students select the projects to be worked on to achieve the Learning Outcomes identified in the attached tables.

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.

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 six modules.

Module Name	Tuition Hours	Student Hours	Learning Outcome	Possible Projects
Bandsaw	6	16	Draw the planned cuts on the wood. The correct size and type of blade is used. Check and set guides on the bandsaw. Turn on the bandsaw. Make a straight cut. Cut a circle of wood. Clean the saw and change the band. Explain precautions and mistakes. Sharpen a parting tool. Use a parting tool.	Lidded box, tea light, salad servers, thickness callipers, depth calliper, Bandsaw circle cutter.
Chucking	6	16	Create a drawing for the projects to be made. Turn a cross grain item held on a screw chuck. Turn a bowl inside and out in a 4 jaw chuck using a spigot and a dovetail mount. Turn a spindle item using a 4 jaw chuck. Sharpen a 55° bowl gouge. Use a 55° bowl gouge.	Two bowls, small footed open vase, mortar and pestle. Bottom of a wig stand.
Faceplate Work	6	16	Create a drawing for the bowl to be made. Mount a blank correctly on a faceplate. On a faceplate turn the outside of a bowl. Sharpen a 35° bowl gouge. Use a 35° bowl gouge	Bowl created using a faceplate as initial mounting. Top of wig stand.
Finishing	6	16	Create a drawing for the skew chisel project to be made. 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, dibble, rolling pin, tartle, whistle, spurtle, wand, towel roll holder. Tool handle (round).
Spindle Turning	6	20	Create a drawing for the spindle turning project to be made. Round a piece of wood between centres. Turn beads, coves and grooves on a piece of wood held between centres. Sharpen a spindle roughing gouge. Use a spindle roughing gouge.	Medium cylinder used for practice, i.e. creating and removing beads, coves, and v-cuts. Foot roller. Bag handle. Stem for wig stand.

Timber	6	12	Create a drawing for the natural edged bowl to be made. Identify some commonly used timbers. Identify some toxic timbers. Demonstrate cutting with the grain and timber use in appropriate orientation. Rough out a green blank. Seal a blank for storage. Sharpen a large bowl gouge. Use a large bowl gouge.	Egg using highly-figured timber. Roughed-out green bowl, prepared for storage. A bowl to utilise the sharpened bowl gouge.
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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. Correctly and safely use some basic wood carving tools,	Wide-rimmed bowl or platter (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 non-toxic finish.	Toy car, ball-and-cup toy, babies' rattles, tumble doll, spinning top.
Colouring	6	16	Mix colours to achieve the desired depth of colour. Apply water or oil colours. Apply a finish to give lift to the colours.	Wide-rimmed bowl / plate / tealight, 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 project and material. Select the appropriate drive spur. Use a safe lathe speed. Produce a simple off-centre project as per the design.	Letter opener as per SAWG project sheet. Oval tool handle. Mallet with square head.
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 small item 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.

Stage 3 – Intermediate Woodturning

Compulsory Modules All students to complete these seven modules.

Module Name	Tuition Hours	Student Hours	Learning Outcome	Possible Projects
Chucking	6	16	Complete a plan for one of these projects. 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 an object that reflects good design principles. Turn that object to match the design
Faceplate Work	6	16	Mount a natural edged bowl blank onto a face plate or screw chuck. Mount a winged bowl blank onto a face plate or screw chuck. Complete the natural edged bowl. Complete the winged bowl. Complete a small platter.	Natural edged bowl. Bowl with two wings (from half-log). Small square platter with wide, thin rim
Finishing	6	16	Fill cracks and holes in turned work. Work through grades of sandpaper by power or freewheeler to prepare for a finish. Wet sanding. Spray lacquer or polyurethane finish.	Medium-sized platter. Small item such as bud vase made of timber that has gaps or cracks to be filled
Hollow Form	12	20	Design and produce a vessel with a 75% opening. Use hollowing tools. Achieve even wall thickness. Clear shavings from inside of vessel.	All projects start with an end grain block 150 x 150 x 250; or a cross grain block 200 square and 100 thick. Day one an open-mouth vase/vessel. Day two a hollow form with 75% opening.
Spindle Turning	6	20	Design a project to include multiple matched spindle turning. The spindle turning to include at least one bead and one cove. Mark the cutting points on a blank. Turn a project using multiple matched spindle turning.	Chair legs, stool, matched candlesticks, balusters, or other spindle items to be replicated
Tools	6	10	Use a bowl saving device. Sharpen and use a scraper	Matching bowls from bowlsaved blanks

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	Toy parts are accurately marked on the wood. 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 or sprayed on colour to parts of turned wooden projects. Apply texture pastes, or texture which is then coloured to parts of turned wooden projects. Apply a finish to add protection to the projects.	Colour or texture applied to small (150mm) broad-rimmed bowl made prior to the class. Or platter. Or wall hanging.
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 made in advance for embellishment (plus waste surface for experimenting). Wide rim bowl. Back of platter or bowl. Chatter on box end-grain surfaces or spinning top. Vase for pyrography.
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.

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 a "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; or a cross grain block 200 square and 100 thick. Day one a hollow form with an opening of 25%. Day two another of similar size but add a rim, collar, or lid; or hollow from the bottom.
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

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 and does not include turned rings or beads.	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.