



FOREST RESEARCH INSTITUTE UNIVERSITY DEHRADUN

(Under section 3 of the UGC Act 1956)

M. Sc. WOOD SCIENCE AND TECHNOLOGY

PLACEMENT BROCHURE

2009



From the Director's Desk

The Forest Research Institute established in 1906, is a pioneer world level institution in the field of forestry education and research. It has launched a two year M. Sc. Course in Wood Science and Technology from the academic year 1996. The course deals with wood as a material, besides covering the processing and manufacturing technologies for wood and wood based products.

The intake of students is based on their performance in an All India Entrance Examination conducted by the Forest Research Institute University every year. Excellent infrastructure, state of the art laboratories, highly qualified, motivated and committed faculty members go a long way in ensuring the all round development of the professionals emerging from this University. The curriculum and syllabi are regularly upgraded with the help of experts. The students use the vast knowledge and expertise of FRI, a name synonymous with the development of forestry, wood science and technology in South Asia. The course, thus, prepares professional leaders to fulfill the demands in wood based industries and research organizations. It is therefore no wonder that all of our students are part of some of the best wood based industries and research organizations within our country and abroad.

On behalf of the Institute, I invite corporates, business organizations and other employers to organize Campus Recruitment Programmes in our University and assess the caliber of our budding wood technologists who are amongst the best in Asia. I am confident that a visit to our Institute will be mutually beneficial.

I wish all the students of M. Sc. Wood Science and Technology the very best in their career. I am sure that they will make significant progress in their profession.

*(Dr. S. S. Negi), IFS
Forest Research Institute, Dehradun*



ABOUT THE UNIVERSITY

Forest Research Institute University

GENESIS

Forest Research Institute (FRI), Dehradun has its roots in the erstwhile Imperial Forest Research Institute established in 1906 to organize and lead forestry research activities in the country. The Institute also administered training to forest officers and forest rangers in the country and after Independence it was aptly renamed Forest Research Institute and Colleges. In 1988, forestry research set up in the country was reorganized. The FRI and its research centers were brought under the administrative umbrella of newly created Indian Council of Forestry Research & Education (ICFRE) under the Ministry of Environment and Forests, Government of India. Forest Research Institute was conferred the status of Deemed University in 1991. Since 2006 it is known as Forest Research Institute University (Under section 3 of UGC Act 1956 vide notification No.F.9-25/89-U.3 dated 6-12-1991)

OBJECTIVES

- To impart education in different branches of forestry and environment
- To provide facilities for research and development and dissemination of knowledge in the field of forestry and environment
- To create consciousness about forest and environment among people through forestry extension programs
- To carry out such other activities as may be necessary and desirable to further safeguarding of environment and protection of forests and wildlife

COURSES OFFERED BY THE FRI UNIVERSITY

M.Sc. Wood Science & Technology

M.Sc. Forestry

M.Sc. Environment Management

Post-Masters Diploma in Management of Non Wood Forest Products

Post-Masters Diploma in Natural Resource Management

Post-Graduate Diploma in Pulp & Paper Technology



M. Sc. Wood Science And Technology

M. Sc. Wood Science & Technology At A Glance

The Forest Research Institute University offers a two-year M. Sc. course in Wood Science and Technology. This prestigious course is the only one of its kind in India. It deals with wood in a material science approach as is being done for metals, plastics and other materials, besides covering the processing and manufacturing technology of various wood products along with a course on wood adhesives. Besides providing basic knowledge on Physics, Chemistry, Mechanics and Engineering of wood, it provides detailed exposure on wood ultra structure and its effect on wood properties; basics of wood bio-degradation and its prevention; special processing techniques for satisfactory utilization of fast growing plantation wood, both as direct sawn solid wood and as reconstituted engineered structural timber and products such as structural particle board; utilization of ligno-celluloses and agro-residues for reconstituted products, laminated wood, laminated veneer lumber, panel strand lumber, etc. which have been recently proved efficacious substitutes for traditional forest products.

The classroom exposure is adequately supplemented by laboratory work including practicals in various technologies on pilot plants, with which the Institute is uniquely equipped. Excursions to important industrial units are conducted to provide onsite exposure to students. The students are also given a chance to take up short duration industrial attachments and dissertation projects of industrial interest in F.R.I. laboratories and pilot plants.



INFRASTRUCTURE

F. R. I. is one of the pioneer and premier institute in forestry research & development in Indian sub continent famous for its historical main building, its lush green campus with various world class laboratories and Pilot plants. Following are the disciplines related to Wood Science and Technology course:

WOOD SEASONING

- Solar kiln
- Vacuum kiln
- Dehumidification kiln
- Steam heated kiln
- Electrically heated automated kiln
- Testing laboratory
- Wood plasticization pilot plant
- Wood plasticization (bending) unit.



Solar kiln

WOOD WORKING AND FINISHING

- Wood workshop with planners, sanders
- Finishing unit with spray gun, gloss meter
- Ammonia fumigation pilot plant

SAW MILLING & SAW DOCTORING

- Log yard, sawmill
- Saw doctoring machinery



Finger Jointing Machine

WOOD PRESERVATION

- Preservative development and testing laboratory
- Pressure treatment plant
- Non-pressure treatment plants
- Creosote treatment plant
- Boucherie plant for bamboo and poles treatment



Pressure Treatment Plant

BOTANY

- Xylarium and botanical garden with 450 wood yielding species
- Arboretum and nearly 20,000 authentic wood samples from India and abroad
- Wood identification labs for anatomical studies
- Herbarium with 3,30,000 specimens



Xylarium

WOOD COMPOSITE

- Pilot plants for manufacturing of resin, plywood, particle board, MDF and wood polymer composites
- Reconstituted engineered structural lumbers (LVL, OSB, PSL), Flush doors
- Testing laboratory for composite wood products and resin



Adhesive Lab



INFRASTRUCTURE

TIMBER ENGINEERING

Timber engineering museum
Wood building structure and construction workshop
Fabrication, design and testing laboratory

TIMBER MECHANICS

Destructive testing laboratory and non-destructive testing laboratory
Wooden products testing laboratory for Indian Standards
Data bank of strength properties of different woods species including foreign species

ENTOMOLOGY

Timber entomology laboratory and insectory
Entomology museum

WOOD CHEMISTRY

Chemical properties of wood, pulping and essential oil extraction

STATISTICS

Statistical quality control, Sampling techniques

PATHOLOGY

Timber pathology laboratory, Pathology museum

COMPUTER SECTION

The Institute has state-of-the-art computer facilities equipped with high speed LAN in distributed Windows 2000 server environment. The center has Internet connectivity through a high speed leased line connection. Internet connectivity is available to faculty members and students.



Universal Testing Machine



Computer Lab

NATIONAL FOREST LIBRARY AND INFORMATION CENTER

National Forest Library and Information Center is richest in document collection on forestry and allied sciences in South and South-East Asia, having more than 1,65,000 books and other publications, more than 7,000 ledger files containing research articles, etc. on different forest species, wood science subjects, and almost all Indian and foreign journals on forestry and allied sciences.



National Forest Library and Information Center



COURSE CONTENT

A Post Graduate In Wood Science & Technology is proficient in the following disciplines

Wood Anatomy : Wood structure and identification. Anatomy of angiosperms, gymnosperms and bamboo. Wood quality assessment, wood defects, juvenile and mature wood. Various types of microscopes, their working and utility.

Saw Milling and Saw Doctoring : Log yard management. Saw milling equipment , their capacities and specifications. Log scanners and computerized BOF system. Saw blade geometry, quality, choice of metal and maintenance.

Wood Physics : Wood-liquid relations, thermal, dimensional, electrical, dielectric and piezo-electric properties of wood. Growth stresses in timber, sound transmission and acoustic in buildings.

Wood Preservation : Wood preservatives and testing of efficacy of preservative. Treatment methods and various preservative plants. Qualitative and quantitative analysis of preservatives. Economics of preservatives and fire protection of timber.

Wood Chemistry : Chemical properties of wood and pulping. Essential oils, gums and adhesives extraction. Techniques of dimensional stabilization of wood by chemical modification.

Product Design and Fabrication : Product performance in use and tolerances, design aspects in furniture and joinery, workmanship in furniture and joinery; joints, finishing. Laminated finger jointed timber, design of pallets, load and section calculations.

Specialized Uses Of Wood : Industrial and engineering uses, uses and specialized machines; suitable timber species and special processing requirements of timber.

Timber Mechanics : Strength properties of different wood species (destructive and non destructive testing). Testing for Indian standards. Identification, measurement and evaluation of defects in wood. Principles, importance and grading rule in assessment of quality of logs and sawn timber.

Timber Engineering and Construction : Design, constructions, shear strength and analysis of linear structural timber components: beam, ties, purlins, columns, low cost structures, trusses and arches configuration.

Wood Working and Finishing : Wood working operations; planing, thicknessing, mortising, tenoning, rebating, grooving, moulding, shaping, turning, drilling, carving

and sanding. Working defects and remedies. Method of assessment, working quality index for the species. Specification and design of machines; planer, thicknesser, mortiser, tenoner, moulder, router, turning lathe, drill. 4-side planer cum moulder, cnc router, dowel making, oscillatory 3-drum sander and gloss meter.

Wood Seasoning : Air seasoning and kiln seasoning. Solar kiln, kiln design and specification and seasoning defects. Special sawing methods like BTS for Eucalyptus spp. and SDR for Poplar spp. Testing for indian standards, wood plasticization by ammonia treatment.

Wood Composite and Adhesives : Adhesives, plywood, particle and fibre board, block board, flush doors, modified woods ,laminated wood, laminated veneer lumber, lumber from reconstituted destructured lignocellulogic materials. Testing for indian standards.

Timber Protection : Study of fungal degradation of wood and its control. Quarantine regulations for import of timber. Insect attack on wood and its control. Use of pesticides and insecticides. Phytosanitary certification.

Botany : Classification, characteristics, external morphology, identification of barks, stems, leaves, flowers, fruits, seeds of gymnosperms and angiosperms.

Statistics : Statistical quality control techniques, sampling techniques, design principle and analysis of experiments.

Computer Applications : Introduction to MS-Word, MS-DOS, MS-Excel, MS-Powerpoint and internet.

Human Resource Management : Nature and scope of management, principles and functions of manager, manpower planning, work motivation, leadership qualities, organizational behaviour. Industrial relations, transactional analysis at work, values and ethics. Concept, practice, new trends, HRD mechanisms and various instruments. Training, job rotation and job enrichment.

Term Paper : Literature review and analysis of research problems.

Dissertation Work : Four month project work in wood science related topics from Forest Products Division.

Industrial Attachment : One month industrial attachment to reputed wood based industry.



FIELD EXPOSURE

INDUSTRIAL ATTACHMENTS

D.S. Doors Pvt. Ltd., Faridabad
In Trading Pvt. Ltd., Gurgaon
DAH Furniture Pvt. Ltd., Faridabad
Sethia Handicrafts Pvt. Ltd., Jodhpur
Basant Handicrafts Pvt. Ltd., Jodhpur
C.L. Gupta Exports Ltd., Moradabad
Janardan Plywood Industries Pvt. Ltd., Dehradun
Usha Shriram Enterprises Pvt. Ltd., New Delhi
Vamani Overseas Pvt. Ltd., Faridabad
Classic Furniture Mfg.Co. (P) Ltd., Faridabad
Evergreen International Pvt. Ltd., Gurgaon
Punjab Plywood Industries Pvt., Ltd. Yamunanagar
Ecoboard Pvt. Ltd., Pune
Paharpur Cooling Towers Ltd., Kolkata
Parvatiya Plywood Industry, Nainital
K.C. Plywoods and Industries, Jammu
Surabhi Art World, Jodhpur
Nuchem Industries (Nu-Wud), Sohana
Jai Balajee Plywood Industry, Haryana
R.R. Industries, New Delhi
IPRITI, Bangalore

VISITS

Bureau of Indian Standard, Delhi
IPIRTI, Bangalore
IWST, Bangalore
AFRI, Jodhpur
Sun-city Furniture, Jodhpur
Evergreen International Pvt. Ltd., Jodhpur
Various Sports Goods Industries of Jalandhar
Various Plywood Industries of Yamunanagar
Furniture Industries of Goa & Mumbai
Common Facility Center, Jodhpur
National Parks and sanctuaries of Karnataka and Uttrakhand

SPECIAL LECTURES

By Scientists of IWST, Bangalore

EXTRA CURRICULAR ACTIVITIES

Leading a balanced life is one of the oldest recommendations in Indian tradition. There are number of student committees that enable students to balance their life by pursuing extra-curricular activities. Choices are immense, from organizing cultural events to organizing sports meet, competitions, various activities of Nature Club. FRI University facilitates students' involvement to help them shape their world outside studies.



Cultural Programme



Sports Meet

M. Sc. Wood Science And Technology



FACULTY

TIMBER MECHANICS

Dr. Vimal Kothiyal
Mr R. Bhandari
Mr. A. K. Khanduri
Mr. K. K. Uniyal
Mr.Y .S. Negi
Dr.Y. M. Dubey
Mr. S. D. Sharma

WOOD WORKING & FINISHING

Dr. Kishan Kumar V. S.
Mr. Sachin Gupta

WOOD COMPOSITE

Mr. D. P. Khali
Mr. J. P. Singh
Dr. Anil Negi

WOOD SEASONING

Dr. S. P. S. Rawat
Mr. A. S. Kambo
Mr. Chetan Swaroop
Mr. N. K. Upreti
Mr. K. L. Arora
Mr. M. C. Kukreti

WOOD PRESERVATION

Dr. Sadhna Tripathi
Mr. Ajmal Samani
Dr. P. B. Dobriyal
Mr. Ram Lal
Mr. S. N. Nautiyal

TIMBER ENGG. & CONSTRUCTION

Mr. K.S. Pruthi (Retd.)

CHEMISTRY

Dr. V. K. Varshney
Dr. Vineet Kumar
Dr. Rashmi Sherawat
Mr. Rakesh Kumar

SYSTEMATIC BOTANY

Dr.Sas Biswas
Dr. Veena Chandra
Mr. Anup Chandra

FOREST ENTOMOLOGY

Dr. M. Ahmad
Dr.R .K.Thakur
Mr.R.S.Bhandari
Dr. Shamila Kalia

STATISTICS

Mr. S. S. Rajput
Mr. Raman Nautiyal
Mr. S. K. Sheel
Mr. A. S. Chauhan

HUMAN RESOURCE & MANAGEMENT

Mr. R.S. Bhatt

CELLULOSE AND PAPER

Dr. S. Naithani

WOOD ANATOMY

Dr. Sangeeta Gupta
Dr. P.K.Pande

FOREST PATHOLOGY

Dr. N.S.K.Harsh
Mr. Amit Pandey
Dr.Y.P.Singh

IT CELL

Er. Neelesh Yadav

EXTERNAL FACULTY

Dr. Ernest Kuersten



PLACEMENT CELL

There is a well-organized placement cell, which works on recruitment and industrial training of students. Ten batches have already passed with 100 percent placement in reputed wood based industries.

Prime Recruiters

BUYING HOUSES/ TRADING COMPANIES

William E Connor & Associate, Pvt. Ltd. (UK),
New Delhi
Meva International, LLC(USA), Jaipur
Li & Fung (Taiwan), New Delhi
Olam International, Singapore
Adonis Decor LLC, Dubai, UAE
Sahara India Commercial Corporation Ltd.
Mumbai
Mayar India Hk. Ltd., Delhi
Allied Resin Pvt. Ltd., Kolkata
ASCU India Pvt.Ltd., Kolkata
Habufa Hasmair, Jaipur
Swadeep Exports Pvt. Ltd., Kolkata
Dilip Trading Compony, Jaipur
Something Else Pvt. Ltd., India
J & J Buying House, India
Art Asia Pvt. Ltd., Jaipur
Homag India Pvt Ltd., Bangalore

EXPORTER/ PLYWOOD INDUSTRIES

Bajaj-Ecotech Products Pvt. Ltd., India
Archid Ply Pvt. Ltd., Rudrapur
Kit Ply Pvt. Ltd., New Delhi
Mangalam Timber Products Pvt. Ltd.,
Mumbai
Rama Wood Crafts, Satna
Pragati Hi-Tec Pvt. Ltd., Yamunanagar
Ecoboards Pvt. Ltd., Pune
Jai Balajee Plywood Industry, Delhi
Galaxy Plywood Industry, Yamuna Nagar
Himalayan Plywood Industry, Chandigarh
Hitache- K.K Manufacturing Company,
Calcutta
Janardan Plywood Industries Pvt. Ltd.,
Dehradun
Novopan India Pvt. Ltd., Hubli
Parvatiya Plywood Industry, Ram Nagar
Punjab Plywood Industries, Yamuna Nagar
Samrat Plywood Pvt. Ltd., Chandigarh
Tirupati Plywood Industry, Sikar

EXPORTER/ SOLID WOOD INDUSTRIES

C.L. Gupta Exports Pvt. Ltd., Moradabad
Evergreen International Pvt. Ltd., Gurgaon
and Jodhpur
In Trading Pvt. Ltd., Gurgaon
DAH furniture Pvt. Ltd., Faridabad
Highland House Pvt. Ltd., Jhunjhunu
Saraswati Art World, Jodhpur
Sun-city Furniture, Jodhpur
Classic Furniture Mfg. Co.Pvt. Ltd., Faridabad
Riya Enterprises, Gandhidham
Laxmi Doors Pvt. Ltd., Lucknow
A.K. Lumbers, Delhi
Fishcher Modular, Ludhiana
Manglam Arts, Jaipur
Basant Handicraft, Jodhpur
Usha Shriram Enterprises Pvt. Ltd., New Delhi
Laxmi Associates Pvt. Ltd., Jaipur

RESEARCH/ACADEMIC INSTITUTES

University of Canterbury, New Zealand
Pennsylvania State University, U.S.A.
Virginia Tech., U.S.A.
Forest Research Institute, Dehradun.
Institute of Wood Science & Technology,
Banglore
Dresden University of Technology, Germany
Rubber Board, Kerala
IPIRTI, Banglore
College of Forestry, Akola, Maharashtra
Process cum Development Centre, Meerut



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FOREST RESEARCH INSTITUTE UNIVERSITY, DEHRADUN

FEEDBACK FORM

(Please fax/post the completed form to the placement office, FRIU, Dehradun)

1. Name of the organization: _____

2. Contact Person: _____

3. Address for communication: _____

Telephone Number _____

Fax _____

E-mail _____

4. Job Details:

Functional Areas	Places of Postings	No. of offers

5. Facilities required: Yes No

OHP Computer / LCD Other

6. Desired dates (Placement Selection): _____

7. Selection Methods: Resumes Interview Other



For more information, please contact:

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Champion in University Sports Meet



Final Year Batch of Wood Science & Technology (2006-08)



Boys' Hostel



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