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**PEOPLE, RULES AND ORGANIZATIONS SUPPORTING  
THE PROTECTION OF ECOSYSTEM RESOURCES**

**Support to the Development and Pilot of Community  
Forestry Curriculum at FTI**

*Consultant Report and Recommendations*

This report was prepared for the United States Agency for International Development, Contract No. AID-669-C-12-00004 People, Rules and Organizations Supporting the Protection of Ecosystem Resources (PROSPER) Project

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# People, Rules and Organizations Supporting the Protection of Ecosystem Resources (PROSPER)

Support to the Development and Pilot of Community Forestry  
Curriculum at FTI

*Consultant Report and Recommendations*

July 2015

## **DISCLAIMER**

The author's views expressed in this publication do not necessarily reflect the views of the United States Agency for International Development or the United States Government.

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## **ACRONYMS**

CF	Community Forestry
FDA	Forestry Development Authority
FTI	Forestry Training Institute
PROSPER	People, Rules and Organizations Supporting the Protection of Ecosystem Resources
USAID	United States Agency for International Development

# **People, Rules and Organizations Supporting the Protection of Ecosystem Resources (PROSPER)**

## **BACKGROUND**

The Consultant was hired by Tetra Tech to support the USAID-funded People Rules and Organizations Supporting the Protection of Ecosystem Resources (PROSPER) program in Liberia. In partnership with the Forestry Training Institute (FTI) and other forest sector partners, PROSPER has invested in building up Liberia's forestry education to support the long-term goals of building the capacity of Liberians to manage their forests more sustainably, and with more equitable distribution of benefits from these resources.

Since 2012, the Consultant has provided technical assistance to FTI to build the capacity of its faculty, update the Institute's course structure, and create a community forestry curriculum. The community forestry curriculum, designed by USAID|PROSPER in partnership with the FTI Faculty, provides FTI faculty with rigorous and up-to-date curricular materials as they train future fieldworkers who will help communities through the verification process to become recognized forest communities and develop and implement management plans, among other activities, in accordance with the Community Rights Law. This contributes to PROSPER's overall goal by building the capacity of the forest practitioners who will support the growth and dissemination of community forestry as a viable management model in Liberia.

In April 2014, the Consultant wrote and compiled a comprehensive set of curricular materials on community forestry including lectures, learning activities, and readings for Liberia's national Forestry Training Institute. For faculty and students, the Consultant created an Internet-based course hosted on a digital learning management system (Canvas) that allows for free mobile downloads and surmounts some of the considerable material and financial obstacles that the faculty and students of the Training Institute face in terms of accessing learning materials on community forestry. Another major task undertaken by the consultant was to provide support and training for the FTI faculty in integrating student-centered teaching techniques into their classroom.

## **OBJECTIVES OF THE ASSIGNMENT**

The specific objectives are as follows:

- Assess the relevance of the contents and the efficacy of the delivery/ implementation of the community forestry curriculum; with a view to annually update the curriculum through the life of USAID|PROSPER to ensure that the final product adequately serves the needs of Liberia's forestry sector.
- Review, refine and update syllabi and lesson plans to reflect interactive teaching techniques and learner-centered principles, and the incorporation of additional resources made available through the digital archive created for FTI.
- Review and revise the institution's monitoring and evaluation systems for both faculty and students to support implementation of community forestry curriculum developed by FTI faculty with support from PROSPER.
- Conduct refresher training for FTI Faculty in participatory teaching techniques.

The Scope of Work for the assignment is found in Attachment 1. This Final Report includes a brief account of each task listed above as well as key findings and recommendations on how to further support the Forestry Training Institute and other sectoral partners.

### Tasks Completed

- The Consultant updated the community forestry curriculum on the Canvas digital learning platform (<https://canvas.instructure.com/courses/851452>). This digital platform provides FTI faculty and students with permanent and free Internet access to lectures, learning activities, and a digital library with nearly 300 references including peer-reviewed journal articles, reports, and books for FTI faculty and students. The Consultant updated and added articles to the digital library with an eye to Liberia-specific resources.
- The Consultant conducted an intensive teacher training on the CF website for FTI's CF faculty and Head of Instruction. The training included the features and the uses of this site. All of the faculty were required to demonstrate competence by using the website themselves, finding lectures, readings, learning activities, etc.
- The Consultant conducted a refresher training for FTI faculty in participatory teaching techniques to improve the delivery of the Community Forestry curriculum. The Consultant reviewed syllabi, lesson plans, and assignments with the FTI faculty and suggested specific interactive learning activities, readings, and illustrative examples for modules within the curriculum.
- The Consultant spent extensive time working with the FTI faculty to revise the curriculum for all three departments. This entailed working essentially as a registrar and consultant simultaneously. This investment of time was deemed worthwhile in that it achieved buy-in from the FTI faculty on the inclusion of a **core curriculum** consisting of Communications, Computers, Mathematics, and Introduction to Forestry for all FTI students. Through this core curriculum, all FTI students will at least be introduced to CF through the Introduction to Forestry course. In addition, all FTI students will emerge from Year 1 core courses with a shared set of skills and vocabulary. The curriculum revision exercise also rationalized the sequencing of courses.
- The Consultant reviewed and revised the monitoring plan for curriculum implementation and teacher evaluations.
- The Consultant reviewed the University of Liberia's draft curriculum for the College of Agriculture and Forestry with an eye to synergies with the Community Forestry Curriculum developed for FTI. The hope was to introduce FTI faculty to the University of Liberia faculty and to create opportunities for FTI to demonstrate their leadership in the CF sector.
- The Consultant inventoried and assessed the status of the computer hardware previously donated by USAID to FTI. The Consultant prepared five USB memory sticks loaded with the CF curriculum in order to provide a non-internet based version of the resources on the Canvas platform.
- The Consultant debriefed the PROSPER staff on the CF curriculum and the Canvas digital learning platform. The staff was oriented to the various modules for which they could provide guest lectures at FTI. Specific practicum for FTI students at PROSPER project sites were also outlined. If planned properly, FTI students could participate in a series of upcoming PROSPER activities in the upcoming quarter including: biodiversity training (Component 1); demarcation training (Component 2);

bushmeat and charcoal surveys (Component 3).

### Key Findings

- In the first year of the CF curriculum, use by the faculty of the Canvas site (i.e., lectures, readings, learning activities) was limited in large part because of disruptions to the school calendar due to Ebola. FTI faculty taught a limited number of the modules (1 and 3) during the shortened school term. There was no apparent use of the readings available on the Canvas platform due to a lack of confidence/competence among the faculty in the use of the website. Intensive training by the Consultant helped the faculty feel **much** more confident as they prepare for a new year of teaching.
- There is a large incoming FTI class with a strong level of interest in CF among these students. There is a perception among the faculty and administration of FTI that CF is a growth sector.
- FTI has ambitions to become national and regional center for teaching CF. One way to realize this ambition would be to support a Certificate Program in CF [see Recommendations].
- There is some internal dissonance / jealousy re. PROSPER's support for CF over other departments at FTI. This is, in some ways, unavoidable. However, sensitivity to these dynamics will be helpful in maintaining positive relations with the FTI faculty. The Consultant showed the non-CF faculty that the digital library and learning activities available on the Canvas platform contain a large number of resources that are relevant to other course and disciplines.
- There continues to be a marked lack of Liberia-specific literature available for students and instructors of forestry.
- FTI instructors are enthusiastic about interactive teaching techniques and learner-centered pedagogies. Faculty expressed confidence in integrating these new techniques into their teaching, especially with respect to creating lesson plans and incorporating participatory learning activities into their lectures.
- There continues to be a lack of physical space (e.g., no office spaces or regular office hours) and no institutional incentive to encourage interaction between instructors and students outside of classes. In response, the Consultant created time slots for "Office Hours" in the revised schedule for all the departments (Wood Science, Mechanics, Ranger) at FTI.
- In order to implement participatory learning activities in classes, FTI faculty need visual aides and other teaching materials, e.g., flip charts, markers, etc.
- The computer laboratory, which was funded by USAID, remains an underutilized resource. The computer lab and renovated classroom are not yet linked to the FTI wifi network, which makes the active use of the Community Forestry Curriculum via the Canvas website difficult. When Currently, FTI pays \$350/month for internet connectivity, but students are utilizing this resource mainly for social media.
- Despite past recommendations, FTI has not designed and implemented a standardized system to evaluate instructors, e.g., student evaluations and faculty peer visits. The Consultant developed an Evaluation Form for use by students in assessing quality of instruction and course content.



- The University of Liberia is revising its curriculum, which includes at least two CF courses. Based on the very brief descriptions provided in the University's draft, it is difficult to ascertain what the content of these courses will be. This signals an opportunity for PROSPER to introduce its CF curriculum and the Canvas digital learning platform for MORE forestry students in Liberia.

## **RECOMMENDATIONS**

### Curriculum Revision and Updates

#### *Recommendations*

1. STTA to update syllabi & lesson plans and learning activities based on experience of this year's classes.
2. STTA to update readings including newest revision of CF law, PROSPER reports and cases studies, etc.
3. STTA to help FTI develop the contents of the Introduction to Forestry course to ensure adequate representation of CF topics. This STTA could also support the construction of a Canvas platform for this course.

### Community Forestry Certificate

PROSPER's investments in FTI have encouraged the faculty and administration to pursue the possibility of developing a department in Community Forestry. Realistically, FTI is not prepared to take this step due to lack of trained faculty and lack of developed curriculum outside of the current courses developed with support from PROSPER. Rather than developing a new department, it is recommended that FTI develop a Certificate Program that would provide students with a focused track within the Forest Ranger department. This Certificate would give students important credentials that would signal to future employers their capacity to implement CF.

#### *Recommendations*

1. STTA to support FTI in developing and then proposing to its Board of Directors an official Certificate in Community Forestry. This would place FTI in a leadership role in the CF sector in Liberia and the Manu River Union region. In addition to required courses, this Certificate should include a practicum and an applied social forestry research project. If this initiative is pursued, PROSPER could make available small research stipends to encourage independent fieldwork by students.
2. Depute PROSPER staff from Monrovia and from field sites to provide guest lectures and to monitor teacher development.

### Computer

#### *Recommendations*

1. FTI should, as soon as possible, arrange for the delivery of new computers (COP Meadows indicated that there are computers available from USAID through an Ebola program).
2. PROSPER's computer technician, Alvis, should be deputed to FTI for installation of these computers and associated equipment. A strict computer protocol should be implemented to

including:

- a. Disabling of USB portals to prevent use of memory sticks infected viruses and prevent the disabling of computers.
- b. Blocking of social media sites (especially Facebook) on FTI's wireless.
- c. Login system to track who uses the computers.

## Monitoring and Evaluation

### *Recommendations*

1. FTI should institute a system of student evaluation for instructors. Such a system would provide valuable feedback in areas of teaching that need improvement; this feedback should be anonymous to ensure that students feel comfortable expressing themselves.
2. FTI should institute regular evaluation of instructors by the Dean of Students as well as outside observers (e.g., Ministry of Education, FDA) where practical.
3. STTA to create online evaluation system (e.g., SurveyMonkey) so that evaluations can be distributed electronically (e.g., sent to students' mobile phones) and thereby tracked over time.

## Teaching Material

Teaching materials in the CF curriculum can now be taught using an interactive digital learning management system (Canvas). However, other subjects at FTI continue to be taught using out-of-date material.

### *Recommendations*

1. PROSPER staff should work together to identify and upload reports, maps, etc. produced by the project for use by FTI. In turn, the Consultant can readily upload these resources to the Canvas platform.

## **ATTACHMENT 1: CONSULTANT SCOPE OF WORK**

### **Support to the Development and Pilot of Community Forestry Curriculum at FTI**

**Kenneth Bauer, PhD**  
**Community Forestry Curriculum Development Specialist**

The Consultant will undertake work in Liberia for Tetra Tech in support of the USAID People, Rules and Organizations Supporting the Protection of Ecosystem Resources (PROSPER) Program.

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## **TASKS**

This Scope of Work will support several tasks under Activity 1.3 of the current Work Plan. Upon approval of the COP, **tasks presented in the present SoW may be adjusted or modified.**

### **Activity 1.3: Develop a CF curriculum and support capacity development of FTI staff to implement**

In our annual work plan, PROSPER envisaged the assessment and revision of the community forestry curriculum in fulfilment of Contract Deliverable **8a**, to annually update the curriculum through the life of USAID|PROSPER to ensure that the final product adequately serves the needs of Liberia's forestry sector. Initially, the assessment of the first phase of implementation of the CF curriculum at FTI was scheduled for December, 2014. With the Ebola outbreak and the closing of education institutions, including FTI, this activity was deferred to June 2015.

Furthermore, PROSPER commits to continue to monitor and assess the use of the digital learning platform (Canvas) by students and faculty. Also, to continue to support the updating of the FTI website with relevant curricular materials (peer-reviewed journals, etc.) for FTI curriculum and compile a comprehensive digital library of articles, case studies, etc.

These tasks contribute firstly to the effective pilot of the community forestry curriculum and then to PROSPER's overall goal, which is to provide capacity to forest practitioners who will support the growth, development and dissemination of community forestry as a viable management model in Liberia.

The Consultant will also perform the following tasks;

- Conduct an assessment on the implementation of the community forestry curriculum, with special focus on its content, its placement in the FTI global curriculum (credit hours), and the extent to which the faculty capacity level and Ebola crisis affected its delivery.
- Review assignments and assessments used during the year by FTI faculty
- Review monitoring system put in place by FTI Faculty with support from PROSPER and its assimilation within the institution
- Develop and conduct a refresher teacher training workshop on participatory teaching techniques
- Update the digital archive of resource materials, including the FTI website on <http://www.liberiafti.wordpress.com>

## **DELIVERABLES**

1. An updated Community Forestry Curriculum (with teacher training guide) available for use at FTI – USAID|PROSPER Contractual Deliverable **8a**.
2. A Final Assessment Report, including a brief account of each task described, key findings and recommendations on how to further strengthen the implementation of the community forestry curriculum. A draft will be submitted for comment to the DCOP before the Consultant departs from Liberia.
3. Draft of additional illustrative syllabi to reflect updated modules for the implementation of the community forestry curriculum in conjunction with FTI Faculty, PROSPER Education Advisor and the DCOP
4. Updated digital archive of resource materials, including the FTI website on: <https://canvas.instructure.com/courses/851452>.

## **LEVEL OF EFFORT:**

Up to 20 working days starting on or around June 10, 2014, allocated as follows:

- One (1) day for review of background materials and discussions with the DCOP and Education Advisor;
- Three (2) working days for preparation of draft syllabi
- Two (3) working days for international travel (on or about June 14, 2014);
- Up to Eleven (12) working days in-country beginning on or about June 15, 2015
- Two (2) working days post-field mission to draft and finalize field mission report in the US and/or home of record.

Up to two additional days may be used to conduct follow-up arising from the field mission, if authorized by ARD and USAID.

A six-day working week (Monday through Saturday) is authorized under this contract while in Liberia.

### **REPORTING**

The Consultant will report to the Deputy Chief of Party or his designee throughout this assignment. Briefings and/or debriefings with the USAID Contract Officer's Representative, other USG officials, or FDA officials are subject to request by these parties.

**ATTACHMENT 2: FTI STUDENT EVALUATION FORMS**

**STUDENT EVALUATION FORM**

Course: \_\_\_\_\_

Instructor: \_\_\_\_\_

Please evaluate the course by answering the questions below.

Course Design and Effectiveness

*Hours/week you spent on coursework outside class*

\_\_\_\_\_ < 1

\_\_\_\_\_ 1-5

\_\_\_\_\_ 5-10

\_\_\_\_\_ 10-15

\_\_\_\_\_ > 15

*I think the overall quality of the course was*

\_\_\_\_\_ Excellent

\_\_\_\_\_ Very Good

\_\_\_\_\_ Good

\_\_\_\_\_ Fair

\_\_\_\_\_ Poor

*I learned a lot in the course.*

\_\_\_\_\_ Strongly Agree

\_\_\_\_\_ Agree

\_\_\_\_\_ Neutral

\_\_\_\_\_ Disagree

\_\_\_\_\_ Strongly Disagree

*I put a great deal of effort into the course.*

\_\_\_\_\_ Strongly Agree

\_\_\_\_\_ Agree

\_\_\_\_\_ Neutral

\_\_\_\_\_ Disagree

\_\_\_\_\_ Strongly Disagree

*I was intellectually engaged in the course.*

\_\_\_\_\_ Strongly Agree

\_\_\_\_\_ Agree

\_\_\_\_\_ Neutral

\_\_\_\_\_ Disagree

\_\_\_\_\_ Strongly Disagree

*The objectives of the course were clear to me.*

\_\_\_\_\_ Strongly Agree

\_\_\_\_\_ Agree

\_\_\_\_\_ Neutral

\_\_\_\_\_ Disagree

\_\_\_\_\_ Strongly Disagree

*I found the course to be well organized.*

\_\_\_\_\_ Strongly Agree

- \_\_\_\_\_ Agree
- \_\_\_\_\_ Neutral
- \_\_\_\_\_ Disagree
- \_\_\_\_\_ Strongly Disagree

*The assignments reinforced my understanding of the course material.*

- \_\_\_\_\_ Strongly Agree
- \_\_\_\_\_ Agree
- \_\_\_\_\_ Neutral
- \_\_\_\_\_ Disagree
- \_\_\_\_\_ Strongly Disagree

*I think the overall effectiveness of the teaching was*

- \_\_\_\_\_ Excellent
- \_\_\_\_\_ Very Good
- \_\_\_\_\_ Good
- \_\_\_\_\_ Fair
- \_\_\_\_\_ Poor

*The instructor set high standards*

- \_\_\_\_\_ Strongly Agree
- \_\_\_\_\_ Agree
- \_\_\_\_\_ Neutral
- \_\_\_\_\_ Disagree
- \_\_\_\_\_ Strongly Disagree

*The professor explained central concepts clearly*

- \_\_\_\_\_ Strongly Agree
- \_\_\_\_\_ Agree
- \_\_\_\_\_ Neutral
- \_\_\_\_\_ Disagree
- \_\_\_\_\_ Strongly Disagree

*This course was helpful for my forestry career.*

- \_\_\_\_\_ Strongly Agree
- \_\_\_\_\_ Agree
- \_\_\_\_\_ Neutral
- \_\_\_\_\_ Disagree
- \_\_\_\_\_ Strongly Disagree

*Comment on the aspects of the course that you think were most effective:*

*Comment on 1-3 aspects of the course that could be improved or enhanced:*

*Comment on 1-3 things that the instructor did well and should continue to do in the future:*

*Comment on 1-3 things that the instructor should focus on to improve his or her classroom effectiveness:*



**ATTACHMENT 3: FTI CURRICULUM SCHEDULE – RANGER A**

Year	Term	Course #	Course Title	Day	Time	Lab	Faculty	Credit Hours
YEAR 1								
1	1		Mathematics	MWF	8:15-9:15		Roberts	3
1	1		Communications	MWF	9:20-10:20		Tokpah	3
1	1		Botany	MWF	10:25-11:25	F 3-5	Garteh	3
1	1		OFFICE HOURS	MWF	11:30-12:30			
1	1		Agro-forestry 1	T/Th	8:15-9:15	Th 3-5	Kollie	2
1	1		Computer	T/Th	9:25-10:25	M-F 7-9	Jah	2
1	1		Introduction to Forestry	T/Th	10:30-11:30		Harris	2
1	1		Work Safety 1	T/Th	11:35-12:30		Davies	2
								<b>17</b>
1	2		Mathematics	MWF	8:15-9:15		Roberts	3
1	2		Communication	MWF	9:20-10:20		Tokpah	3
1	2		Forest Ecology	MWF	10:25-11:25		Harris	3
1	2		Silviculture 1	MWF	11:30-12:30	M 3-5	Cummeh	3
1	2		Agro-forestry 2	T/Th	8:15-9:15	Tu 3-5	Kollie	2
1	2		Computer	T/Th	9:20-10:20	M-F 7-9	Jah	2
1	2		OFFICE HOURS	T/Th	10:25-11:25			
1	2		Soil Science	T/Th	11:30-1:00	Th 3-5	Kollie	3
								<b>19</b>
1	3		Mathematics	MWF	8:15-9:15		Roberts	3
1	3		Communications	MWF	9:20-10:20		Tokpah	3
1	3		Community Level Forest Conservation & Protection	MWF	10:25-11:25		Harris	3
1	3		Dendrology 1	MWF	11:30-12:30		Garteh	3
1	3		Community Forestry 1	MWF	12:35-1:35		Tokpah	3
1	3		Forest Inventory	T/Th	8:15-9:15		Campbell	2
1	3		Introduction to GIS	T/Th	9:25-10:25	M-F 7-9	Jah	2
1	3		OFFICE HOURS	T/Th	10:30-11:30			
1	3		Forest Surveying & Mapping	T/Th	11:35-12:35		Arman	2
								<b>21</b>

**ATTACHMENT 3: FTI CURRICULUM SCHEDULE – RANGER**

Year	Term	Course #	Course Title	Day	Time	Lab	Faculty	Credit Hours
YEAR 2								
2	1		Community Forestry 2	MWF	8:15-9:15		Cummeh	3
2	1		Dendrology 2	MWF	9:20-10:20		Garteh	3
2	1		Forest Management 1	MWF	10:25-11:25		Roberts	3
2	1		OFFICE HOURS	MWF	11:30-12:30			
2	1		Forest Plants I	MWF	12:35-1:35		Garteh	3
2	1		Forest Mensuration	T/Th	8:15-9:15		Dongbo	2
2	1		Forest Protection 1	T/Th	9:20-10:20		Harris	2
2	1		Silviculture 2	T/Th	10:25-11:25		Cummeh	2
2	1		OFFICE HOURS	T/Th	11:30-12:30			
2	1		Forest Surveying & Mapping 1	T/Th	12:30-1:30		Olue & Aima	2
								<b>19</b>
2	2		Forest Protection 2	MWF	8:15-9:15		Harris	3
2	2		Forest Management 2	MWF	9:20-10:20		Roberts	3
2	2		Small Business Enterprise 1	MWF	10:25-11:25		JFK	3
			OFFICE HOURS	MWF	11:30-12:30			
2	2		Introduction to Procurement & Analysis	T/Th	8:15-9:15		Yeonay	2
2	2		Forest Policy, Law, & Administration 1	T/Th	9:20-10:20		Kollie	2
2			Forest Inventory	T/Th	10:25-11:25		Campbell	2
2	2		Forest Engineering	T/Th	11:30-12:30		Ballah	2
2	2		Forest Surveying & Mapping 2	T/Th	12:35-1:35		Olue & Aima	2
								<b>19</b>
2	3		Small Business Enterprises 2	MWF	8:15-9:15		JFK	3
2	3		Forest Products Utilization & Marketing	MWF	9:20-10:20		Ballah	3
2	3		OFFICE HOURS	MWF	10:25-11:25			
2	3		Special project	MWF	11:30-12:30		Tokpah	3
2	3		Work Safety 2	T/Th	8:15-9:15		Folley	2
2	3		Forest Policy, Law, & Administration 2	T/Th	9:20-10:20		Kollie	2
2	3		Internship	T/Th	10:25-11:25		FTI	2
								<b>15</b>

**ATTACHMENT 4: FTI CURRICULUM SCHEDULE – WOOD SCIENCE**

Year	Term	Course #	Course Title	Day	Time	Lab	Faculty	Credit Hours
<b>FIRST YEAR</b>								
1	1		Mathematics	MWF	8:15-9:15		Roberts	3
1	1		Communications	MWF	9:20-10:20		Tokpah	3
1	1		Chain Saw Operation & Maintenance	MW	10:25-11:35	Th 3-5	Parker	2
1	1		Computer	T/Th	8:15-9:15	M-F 7-9	Jah	2
1	1		OFFICE HOURS	T/Th	9:20-10:20			
1	1		Saw Doctoring I	T/Th	10:25-11:25	T 3-5	Blama	2
1	1		Introduction to Forestry	T/Th	11:30-12:30		Harris	2
								<b>14</b>
1	2		Mathematics	MWF	8:15-9:15		Roberts	3
1	2		Communication	MWF	9:20-10:20		Tokpah	3
1	2		OFFICE HOURS		10:25-11:25			
1	2		Forest Mensuration & Inventory	MWF	12:35-1:35	M 3-5	Dongbo/Campbell	3
1	2		Introduction to Sharpening 1	T/Th	8:15-9:15	T 3-5	Blama	2
1	2		Computer	T/Th	9:20-10:20	M-F 7-9	Jah	2
1	2		Community level forest conservation & protection	T/Th	11:30-1		Harris	3
								<b>16</b>
1	3		Mathematics	MWF	8:15-9:15		Roberts	3
1	3		Communications	MWF	9:20-10:20		Tokpah	3
1	3		Forest Engineering & Harvesting	MWF	10:25-11:25	M 3-5	Ballah	3
1	3		Wood Engineering & Science 1	MWF	11:30-12:30		Zwannah	3
1	3		Introduction to Sawmill Management	T/Th	8:15-9:15	T 3-5	Zwannah	2
1	3		Introduction to GIS	T/Th	9:25-10:25	M-F 7-9	Jah	2
1	3		Mechanics of Sawing	T/Th	10:30-11:30	W 3-5	Jackson	2
								<b>18</b>

**ATTACHMENT 4: FTI CURRICULUM SCHEDULE – WOOD SCIENCE**

Year	Term	Course #	Course Title	Day	Time	Lab	Faculty	Credit Hours
<b>SECOND YEAR</b>								
2	1		Welding	MWF	8:15-9:15	W 3-5	Blama	3
2	1		Circular Saw	MWF	9:20-10:20	M 3-5	Jackson	3
2	1		OFFICE HOURS	MWF	10:25-11:25			
2	1		Forest Management 1	MWF	11:30-12:30		Roberts	3
2	1		Wood Engineering & Science	T	10:25-11:25		Zwannah	1
2	1		Metallurgy	TH	10:25-11:25		Zwannah	1
2	1		Saw Doctoring 2	T/Th	11:30-1		Blama	3
								<b>14</b>
2	2		Band Saws	MWF	8:15-9:15	F 3-5	Zwannah/Jackson	3
2	2		Gang/sash Saw	MWF	9:20-10:20		Blama	3
2	2		OFFICE HOURS	MWF	10:25-11:25			
2	2		Sawmill Management	MWF	11:30-12:30		Zwannah	3
2	2		Intro to Saw Sharpening 2	T/Th	9:20-10:20	T 3-5	Blama	2
2	2		Forest Policy, Law, & Administration	T/Th	10:25-11:25		Davies	2
2	2		Sawmill Machines	T/Th	11:30-1	Th 3-5	Jackson	3
								<b>16</b>
2	3		Forest-Based Industry	MWF	9:20-10:20		Ballah	3
2	3		Forest Product Utilization & Marketing	MWF	10:25-11:25		Ballah/Zwannah	3
2	3		OFFICE HOURS					
2	3		Forest Products Processing & Utilization	MWF	12:35-1:35	F 3-5	Zwannah	3
2	3		Internship	T/Th	10:25-11:25		FTI	2
2	3		Special Problems / Project	T/Th	11:30-1		Tokpah	3
								<b>13</b>

**ATTACHMENT 5: FTI CURRICULUM SCHEDULE – MECHANICS**

Year	Term	Course #	Course Title	Day	Time	Lab	Faculty	Credit Hours
<b>FIRST YEAR</b>								
1	1		Mathematics	MWF	8:15-9:15		Roberts	3
1	1		Communications	MWF	9:20-10:20		Tokpah	3
1	1		Other Systems 1	MWF	10:25-11:25		Kollie	3
1	1		Material Knowledge	MWF	11:30-12:30		Parker	3
1	1		OFFICE HOURS	MWF	12:35-1:35			
1	1		Introduction to General Mechanics	T/Th	8:15-9:15		Kollie	1
1	1		Computer	T/Th	9:20-10:20	M-F 7-9	Jah	2
1	1		Introduction to Forestry	T/Th	10:30-11:30		Harris	2
1	1		Work Safety 1	T/Th	11:35-12:30		Davies	2
								<b>19</b>
1	2		Mathematics	MWF	8:15-9:15		Robert	3
1	2		Communications	MWF	9:20-10:20		Tokpah	3
1	2		Automotive Engine 1	MWF	10:25-11:25		Parker	3
1	2		Basic Metal Work	MWF	11:30-12:30	W 3-5	Parker	3
1	2		Principles of General Mechanics 1	T/Th	8:15-9:15	T 3-5	Parker	2
1	2		Computer	T/Th	9:20-10:20	M-F 7-9	Jah	2
1	2		Complete Estimate	T/Th	10:25-11:25		Yeanay	2
1	2		Two- and Four-Stroke Engines 1	T/Th	11:30-12:30		Kollie	2
1	2		OFFICE HOURS	T/Th	12:35-1:35			
								<b>20</b>
1	3		Mathematics	MWF	8:15-9:15		Roberts	3
1	3		Communications	MWF	9:20-10:20		Tokpah	3
1	3		Automotive Engine 2	MW	10:25-11:25	F 3-5	Kollie	2
1	3		Two- and Four-Stroke Engines 2	WF	11:30-12:30		Kollie	2
1	3		OFFICE HOURS	MWF	12:35-1:35			
1	3		Chain Saw	T/Th	8:15-9:15	T 3-5	Parker	2
1	3		Parts of the Chain Saw	T/Th	9:20-10:20		Parker	2
1	3		Trouble Shooting and Solutions	T/Th	10:25-11:25	Th 3-5	Kollie	2
1	3		Automotive Power Train 1	T/Th	12:35-1:35		Kollie	2
								<b>18</b>

**ATTACHMENT 5: FTI CURRICULUM SCHEDULE – MECHANICS**

Year	Term	Course #	Course Title	Day	Time	Lab	Faculty	Credit Hours
<b>SECOND YEAR</b>								
2	1		Light Duty Gasoline Engine	MWF	9:20-10:20		Kollie	2
2	1		Metal Work 2	MWF	10:25-11:25		Parker	2
2	1		OFFICE HOURS	MWF	11:30-12:30			
2	1		Automotive Electricity 1	T/Th	8:15-9:15		Parker	2
2	1		Automotive Power Train 2	T/Th	9:20-10:20		Kollie	2
2	1		Clutch System	T	10:30-11:30		Kollie	1
2	1		Cooling System	Th	10:30-11:30		Parker	1
2	1		Servicing & Repair	Th	11:35-12:35		Parker	1
								<b>11</b>
2	2		Heavy Duty Diesel Engine	M	8:15-9:15		Parker	1
2	2		Metal Work III	W	8:15-9:15		Parker	1
2	2		Automotive Electricity II	WF	9:20-10:20		Parker	2
2	2		Other Systems 2	T/Th	8:15-9:15		Kollie	2
2	2		Trouble Shooting & Solutions	T	9:20-10:20		Kollie	1
2	2		Brake Systems	Th	9:20-10:20		Kollie	1
2	2		OFFICE HOURS	T/Th	10:25-11:25			
2	2		Hydraulics Systems	T/Th	11:30-12:30		Parker	2
								<b>10</b>
2	3		Other Systems 2	MWF	8:15-9:15		Kollie	3
			OFFICE HOURS	MWF	9:20-10:20			
2	3		Special Problems Project	MWF	10:25-11:25		Tokpah	3
2	3		Small Business	T/Th	8:15-9:15		JFK	2
2	3		Internship	T/Th	9:20-10:20		FTI	2
								<b>10</b>