

III. 協力内容の検討

1. 協力内容は、次のような提案となる。

表III.1 協力内容のまとめ

何を協力するのか	科目の教育内容・方法の改善		教師の指導能力向上
何を強化することから始めればよいか。	現行教科書の見直し 教科書の改訂	実習方法の見直し 実践教材実験用機材補足追加 聴視覚教材の協力	教師の養成能力の強化 教師の能力強化
どこまで協力して、どこまでは協力しないか。	現場に見合った実践的な授業内容とするための重要科目の教育内容・方法の改定に目標をおき、実習の強化を図る。 実践的でない科目は今回の対象としない。		昨今の建設現場に対応した授業 各教師の直接関係しない研究テーマについてはタッチしない
いかに	<ul style="list-style-type: none"> 通訳・翻訳者を介して、JICA 専門家とC/Pが共同で現行教科書に補足・改良すべき項目があるか検討し、補足・改良内容の案を作成する。 この際、現場書類（標準仕様書ASSHTO等標準の基準・仕様書等）の活用を行う。 担当教師が改善した教科書を授業に使用し、専門家と共に学生の反応をみて、さらに補足・改善を行い本格授業への採用を目指す。 	<ul style="list-style-type: none"> JICA 専門家とC/Pが協力し、ハードのみならずソフトに重点をおき、実習方法を見直す。 実践機材の使い方については、建設業者等から講師を招聘する。 実験用器具の使い方については不明なものは、納入業者等が講師を派遣する。 視聴覚教材は、本格開始後に参考となりうるベトナム国内の施設を共同で見学し規模などを確認する。必要教材の供与も検討する。 	下記について教師・専門家共同で把握する <ul style="list-style-type: none"> ベトナムの現場の現況 ベトナムの建設業界のニーズ 卒業生のコメント 学生・第三者の意見 上記目的のため下記を実施する <ul style="list-style-type: none"> 民間会社との定期的懇談会 教師セミナーへの民間会社社員の招聘 現場見学会 インターネットHP ¹ の英語版をオープンし、情報公開を行い、外部との情報交換を目指す
日本での研修			現場見学 実習は言葉の問題から無理？
誰に	各担当の教師	(受け取り担当部署、責任者については、協議中とのこと)	高速道路建設に関連する科目担当の教師、および経営陣
いつ	2010年から3年を目処とする		
協力しない部分は誰がどのようにカバーするか。	COT及びMOT、MOETが担当する（自助努力が可能）。		
留意点	翻訳に多大な労力を要するし、信頼性には留意する必要がある。 まとまった数の教師が一同に対応しなく済むように配慮する。	供与した機材が有効に活用されているかどうかの指標の設定	勤務継続性を保つ方策 各自の向上意欲を持たせる方策

¹ 現在 COT では下記の Web が解説されている

-www.utt.edu.vn: Official Web Site of COT (Instruction/News/Organization/Enrolment etc)

-www.svtvt.net: Play Ground for COT Students (Forum)

2. 投入項目

本事業の目的は、COT卒業生の高速道路建設での実践的貢献度を高めるため、その授業内容・実習方法の改善を行い、教師の現場への理解力を増し、養成能力向上を目指すものである。

ベトナム側の投入は、任命されたカウンターパートの主体的作業実行、事務所等作業環境の供与である。

日本側の投入項目は、教科書・実習内容の見直し支援、教師の能力強化策支援（セミナー・業者との懇談会、日本研修）、機材協力の3点である。

(1) 教科書・実習内容見直し支援

前章の表II.3.4で、“COT側が強化すべき第1位優先順位とした各教科書、および調査団が強化必要科目とした教科書”の目次と図表から推測した各教科書についてのコメントをまとめると次のようになる。

表III.2 教科書の見直し細目

Category A Subject	Current Text Book-Table of Contents	具体的コメント
1 Construction material (60 hours) 現行授業 時間数	C2 Nature stone materials	
	C3 Portland Cement	目次から見る限り、大方の項目は網羅されている。
	C4 Concrete	
	C5 Mortar	
	C6 Timber	建設用材料では、土、骨材、木材のような自然材料とコンクリート（鉄筋、添加剤を含む）、橋梁・仮設用鉄材等を分けて別科目とし、各々の強度特性、使用上の注意に重点を置いた組み立て方を提案したい。
	C7 Cement/Additives	
	C8 Asphalt Concrete	
	C9 Metal	
	2 Geology (30 hours)	C1 Soil & Rock C2 Movement of earth C3 Investigation
3 Soil Mechanics (45 hours) 消し線をつけたものは、 他の項目に含めてよい と考えられるもの	C1 Soil Characters	土質については現状のままでも可とするが、 下記は基本的な重要項目とする。
	C3 Stress in Soil	✓ 土の種類とその特性、使用上注意すべき点
	C4 Bearing Capacity	✓ 軟弱地盤処理、圧密沈下計算
	C5 Settlement	✓ 土圧計算
	C6 Pressure of RW C7 Slope stability	✓ 斜面崩壊・すべり計算
3.Lab Experiment	現講座の改善	土質試験（水浸CBRを追加、但し3軸試験は排除）
	試験機の手入れ	骨材試験（粒度、粒形、硬度、水分量）
	キャリブレーション	コンクリート配合・強度試験
	供試体の養生法	アスファルト混合物配合・マーシャル試験
4 Geodesy Theory (60 hours)	C1 General & Tolerance	許容誤差、誤差修正方法が重要
	C2 Theodolite	
	C3 Distance Measurement	現在は、Total Stationではほぼ全ての測量が実施されているが、測角、距離、高さについて基本的な手計算ができ、かつトランシットのコンピュータ計算の理解が必要
	C4 Leveling	
	C5 Terrain Survey	この項目は実習で行うことが望ましい。
	C6 Applied survey	GPS測量の基本も必要
4. Survey Practice	現講座の増強・改善	トランシット、テープ、レベルに加え、TSを強化する GPS測量の初期的実習
	5 Material Mechanics (60 hours)	C2.Axial Compression C3 Shearing C4 Stress C5 Inner Moment C6 Distortion C7 Deflection C8 Complex Force C9 Stability C10 Dynamic Load C11 Fatigue
12 Road Construction (Soil & Drainage)	VI. Blasting	発破による工事は環境問題があるが、ベトナムでは未だ使用されているので、軽く触れるだけでよい
	A. Embankment Materials	土の種類、特性、切盛り土量変化率は重要
	B. Preparation for Embankment Construction	最適含水比と密度の関係は重要

(45 hours)	III. Compaction of Soil Material	
	IV. Soil Works by Manual	高速道で手作業は少ないので減らすべき
	V. Soil Works by Machine	機械土工は重要で、機械の運用計画を重視する
	VII. Widening	高速道での拡幅は少ない
	VIII. Soft Ground treatment	段切り、排水処理、転圧が重要項目
	XIII. Soft ground consolidation	Soil Mechanicsで実施する
		現行のDrainageを強化する
13	XI. Pavement Structure & materials	舗装構造、良質材料の基本は重要
Road Construction (Pavement) (45 hours)	XII. Base Course	下層路盤、上層路盤への材料の使い分け
	XIV. Asphalt Pavement	セメント等添加した改良材料の工法
	XV. Concrete Pavement	アスファルト舗装の温度管理は重要
	IX. Inspection & Acceptance	養生方法・目地の切り方が特に重要
		表題をInspection & Repairとする
	X. Construction Management	
	XVI. Construction Management	No18での別講座とする
14		高度な工事管理ではなく下記のようなもの
Road management & exploitation		記録のとり方
		指示に対する対応
15	C2 Topo Survey (Foundation)	この地形測量は測量の講座で行うので不要
Bridge Construction I (75 hours)	C3 Abut & Pier	直接・杭・ケーソン等の基礎構造授業
	C4 Steel & Composite bridge	下部構造物の場合、シューや落下防止装置の基本的紹介
15	C1 RC bridge	RCのほか現在主流のPCが必要
Bridge Construction II	C2 Arch & Suspension Bridge	アーチ橋のようなRigid Frame構造、斜長橋、つり橋の詳細講義は短期大学では不要？
	C3 Management of Site	これは 独立し 現場管理講座 とすべき
15	C1 Bearing capacity of Bridge	
Bridge Construction III	C2 Maintenance of Bridge	短期大学では不要？
16		橋梁の点検項目、方法は、別途維持管理という講座を設けて行うほうが好ましい
Bridge Inspection /Repair (75 hours)		
16		出来形検査方法、記録方法
Field Inspection	現講座の改善	締め固め試験について砂置換法とRI方法を比較
		平坦性試験方法
17	C1-Fundamental of RC Concrete	RCのほか現在主流のPCが必要
RC structure (60 hours)	C2-Structural element under tension & Compression	引張応力、圧縮応力
	C3 Structural element under bending	曲げ応力 このほか緊張ケーブルの項目が必要
18	新講座	報告・連絡の方法
Construction project management (60+30 hours)		図面と仕様書の見方
		数量の拾い方(土量、コンクリート量、鉄筋)
		施工図の描き方(鉄筋曲げ加工図)
		QC 面の充実
		作業員への指示の方法と時間管理票
		労働安全衛生法基礎
		環境保護法関連条項
調査団強化推薦Subject		
Road Safety Facilities Operation Facilities	新講座	道路安全施設・運営管理施設は、特に高速道路では必須のものであり、その概要を科目に取り入れ、建設に必要な高速道路の全体像を示すことを目的とする
Quality Control	現講座の改善・統合	現在のいくつかの科目の教科書にも分散して品質管理の項目があるが、統合して独立した品質管理の科目を立ち上げるもの
English	現講座の改善 (現在の一般的会話に専門用語の講座も加える)	技術基本用語 英語仕様書 基本会話 英語でのレポートの作り方の講座は不要

連続橋、エクストラロード
橋、斜張橋、吊橋については、
設計はもちろん、建設計画も
高度すぎると考えられる

上記の教科書見直し作業を行い、授業を試行し、修正作業を行うために必要となる、作業室、通訳の制限から考え、作業は、いくつかのグループに分け、下記のサイクルを実施していくものとする。このためのプロジェクト期間は通算3年とする。下記の期間には事前の教科書の翻訳数ヶ月と専門家の作成する英語素案のベトナム語への翻訳および各教師との折衝、変更も含まれる。

なお、本格プロジェクトでの教科書の見直しは、各教科書の英訳が事前に完了していることが前提となる。また、教科書の改訂では、すでに橋梁建設の教科書で採用されている、各章ごとのドリルを設け、学生の理解度をより高める工夫を行う。

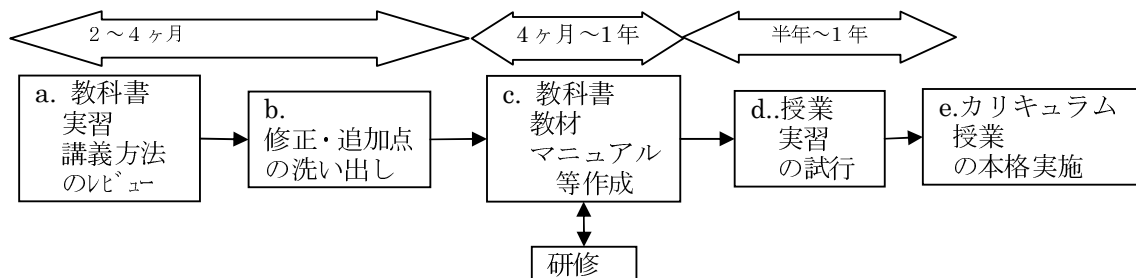


図 III.1 プロジェクト期間従事概念図

上記教科書見直しは下記のような多岐にわたる専門家を必要とする。チーフアドバイザーは、各専門家とカウンターパートと共同作業を行いながら、そのコメント・意見を調整し、プロジェクト全体方向を統一していく役割を担う。

表III.3 各専門家の推定所要期間

科目	所要期間	備考
1.総括/カリキュラム改善計画	11ヶ月	すべての科目を各専門家と相談しながら改善計画作成を指導し、実施を監督する。
2.地質学、基礎地盤	6ヶ月	理学系 (大学教授OB)
3.建設材料	6ヶ月	建設業者出身者が好ましい
4.土質力学、土質試験	6ヶ月	同上
5.測量、測量実習	6ヶ月	測量会社出身者が好ましい
6.道路建設(路体・排水)	6ヶ月	コンサルタント
7.道路建設(舗装・付帯設備)	6ヶ月	コンサルタント
8.施工管理、現場管理(安全)、品質出来高管理	6ヶ月	公団出身者
9.橋梁点検補修(橋梁建設)	6ヶ月	建設業者出身者。主要業務は橋梁点検補修。
10.鉄筋コンクリート	6ヶ月	(大学教授OB)
11.道路設計、カルバート設計・施工	6ヶ月	公団出身者/コンサルタント
12.建設法令	3ヶ月	この科目についてはベトナム人専門家の仕事とし、総括が目を通す
13.労働安全	3ヶ月	
14.技術者の職業倫理	4ヶ月	
15.材料力学	4ヶ月	ベトナム人専門家
16.構造力学	4ヶ月	ベトナム人専門家 (材料力学に含む)
土木英語		2年生以上での英語授業に実践性を持たせる。他の専門家による兼務
17.業務調整員/機材仕様作成支援	17ヶ月	チーフアドバイザー・各専門家の支援及び会計担当
合計17人	106MM (内、本邦専門家71MM、業務調整員17MM、ベトナム人専門家18MM)	

(2) 教師の能力強化策支援

チーフアドバイザーの担当業務としてCOTのカウンターパートを支援し下記の業務を行う。

- 1) ベトナム建設業界との懇談会の設置指導
- 2) 教師セミナーへの業者からの講師派遣要請方法の指導
- 3) ベトナムでの現場見学会での着目点、アンケートの作成
- 4) ベトナム企業の現場での1月前後の教師の研修
- 5) 日本での見学会の支援
- 6) 教師の評価方法の提案

教師の能力強化策は、COTが主体で行うが、チーフアドバイザーは、各専門家と相談しながら、COT側に対し、助言を与え、JICAに対しては適宜進捗状況を報告するものとする。

ベトナムでの業者との懇談会、研修先はベトナム業者の協力の下、COTが主催して行う。

日本での研修は、いくつかのグループに分け、日本国内業者の協力を得て高速道路建設現場数箇所のほか、JICA研修センターを想定している。

教師の評価方法については、専門家を通じ、日本の事例を紹介しながら、COT主体で改善していくものとする。下記に ベトナムMOET省令と日本で試みられている教師評価方法の比較を参考までに示す。

表III.4 教員評価制度の比較

	ベトナムMOET省令	日本の事例
	コンテスト対象の授業で評価	3年間を通算した評価
教育内容	講義・演習	科目達成目標を示したか 教員は目標達成に努めたか 学生は努力したか 科目は今後有効か
	授業内容 教師のメモ 使用教材	科目・関連分野が好きになったか 学生側からの評価が加わる
	指導教員	大学院生に対する指導実績
	学生指導	学生の外部発表への支援・努力
研究内容	教材作成	準備教材内容
	受賞	賞ごとに異なる評点
	論文・作品	ローカル論文、英語による国際論文、発表雑誌発行数等で評価点が異なる
	発表講演	講演会の規模、仕様言語で異なる
	著作	印税収入の額
	特許	特許料の額
社会貢献	研究計画	
	学会活動	学会からの評価
	研究費補助金 その他研究費	政府・団体・企業からの補助金額 大学への貢献度合い
報奨	優秀教師証明書交付 \$50の副賞金 昇格・昇給はない	過去3年間の評価が高い場合年功序列ではなく昇格・昇給が行われる。降格・減俸もある。

(3) 機材協力

前章II.3.6に示したように、COTの機材は、実践的教育を行うには十分な質と数が不足している。本詳細計画策定調査では、個々の機材の現状確認を行う時間的余裕がなかったが、本格調査では次のような手順で、協力していく必要がある。

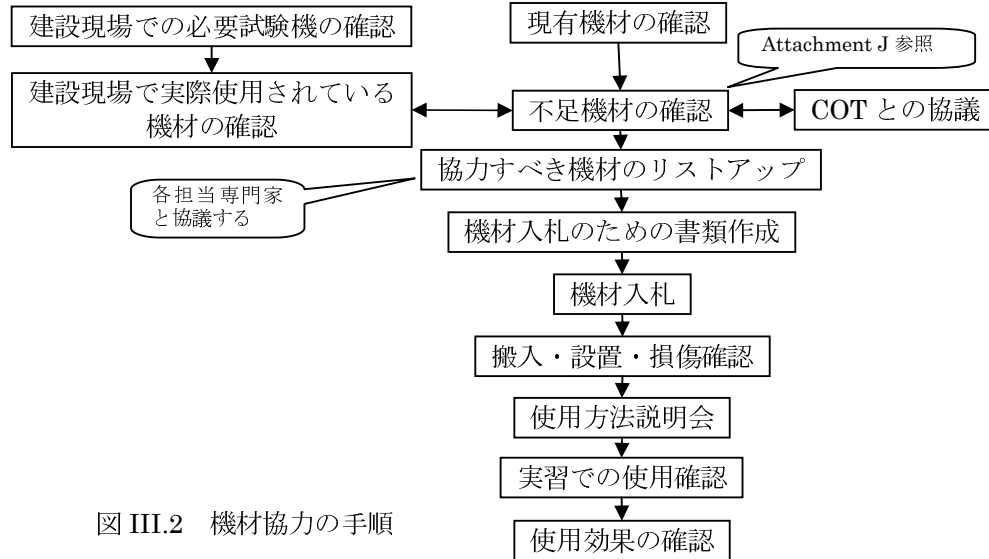


図 III.2 機材協力の手順

上記の手続きのため、下記の専門家をアサインする必要がある。

試験機等入札書類作成納入管理 8ヶ月 測量・土質他試験機選択と供与の実施作業を行う

3. 協力計画

- PDM(次ページ以降参照)

PROJECT DESIGN MATRIX (PDM)案

プロジェクト名：Project for Enhancing Capacity of Transport College

「高速道路建設事業従事者養成能力強化プロジェクト」

実施機関：交通運輸省交通短大（COT）

ターゲットグループ： COT 道路・橋梁建設分野教師 最終受益者： COT 道路橋梁建設分野学生、建設業界

プロジェクト要約	指標	入手手段	外部条件
<p style="text-align: center;"><u>上位目標</u></p> <p>1. COT の道路・橋梁建設分野卒業生の高規格道路(高速道路を含む)建設能力が向上する</p> <p>2. 他の交通短大での道路・橋梁建設分野にかかわる主要科目の教育能力が向上する</p>	<p>1-1. COT 道路・橋梁建設分野卒業生への業界からの評価が高まる</p> <p>1-2. 教育内容に対する卒業生の評価が高まる。</p> <p>2-1 COT で作成された教材が他短大で採用される</p> <p>2-2 COT から教育能力強化に関する情報提供</p>	<p>企業に対するアンケート</p> <p>卒業生に対するアンケート</p> <p>他短大等での教科書等採用実績</p> <p>MOET のウェブサイトへの COT 教科書掲載実績</p>	<p>MOET のウェブサイトへの教科書掲載活動が MOET によって維持される。</p>
<p>プロジェクト目標</p> <p>道路・橋梁建設分野において、現場のニーズに対応した教育能力が向上する。</p>	<p>1. 新しい教材が道路・橋梁建設分野のカリキュラムに反映される。</p> <p>2. 教師の企業での研修が実施される</p>	<p>カリキュラムの変更実績</p> <p>研修実績</p>	
<p>成果</p> <p>1. 選定された科目リスト(1)の科目に対し内容、講義および実習方法が改善され、担当教師の能力が向上する</p> <p>2. 選定された科目リスト(2)の科目の問題点および改善方法が明確になる。</p> <p>3. 教師の能力向上のための企業と連携した研修制度の確立</p>	<p>1-1 新しい教材が作成される</p> <p>1-2 新しい教材により授業・実習が実施される</p> <p>2-1 提案された改善策の 50%以上が実施される</p> <p>3-1 企業と連携した教師のための研修が制度化される</p>	<p>承認された教材数</p> <p>新しい教材を利用した授業の実績</p> <p>提案された改善策の改善実績</p> <p>COT 内での公式文書</p> <p>企業等との合意文書</p>	<p>技術移転を受けた教官が勤務し続ける</p> <p>企業の協力が得られる</p>

<p>活動</p> <p>1. 別添科目リスト(1)の科目に対し以下の活動を実施する</p> <p>1-1 既存教材、実習および指導方法のレビュー</p> <p>1-2 既存教材、実習および指導方法の改善方法の検討、改善実施計画の作成</p> <p>1-3 教材、実習マニュアルの作成</p> <p>1-4 教材を使った授業の実施</p> <p>1-5 それに基づく教材の見直し・確定</p> <p>2. 別添科目リスト(2)の科目に対し以下の活動を実施する</p> <p>2-1 既存教材、実習および指導方法をレビューし、必要があれば科目リスト(1)に追加すべき1以上の科目を選定し、当該科目に対し活動1を実施する</p> <p>2-2 科目リスト(2)に残った科目のうち必要な科目に対し、改善対策（機材含む）を検討する。</p> <p>3-1 教員の能力および関連事項に関する調査</p> <p>3-2 企業と教師との懇談会等の設置</p> <p>3-3 企業と連携した教師の研修制度案の作成（分野、人員、期間、費用負担など）</p> <p>3-4 研修枠組みの形成のため企業との協議</p> <p>3-5 いくつかの研修の試行</p> <p>3-6 研修制度の確立</p>	<p>Inputs (日本側)</p> <p>(a) 専門家</p> <p>(b) 機材</p> <p>(c) 日本研修</p> <p>(d) セミナー等の開催</p>	<p>(ベトナム側)</p> <p>(a) カウンターパート</p> <p>(b) 執務環境の整備</p> <p>(c) 活動に必要な経費</p>	<p>前提条件</p>
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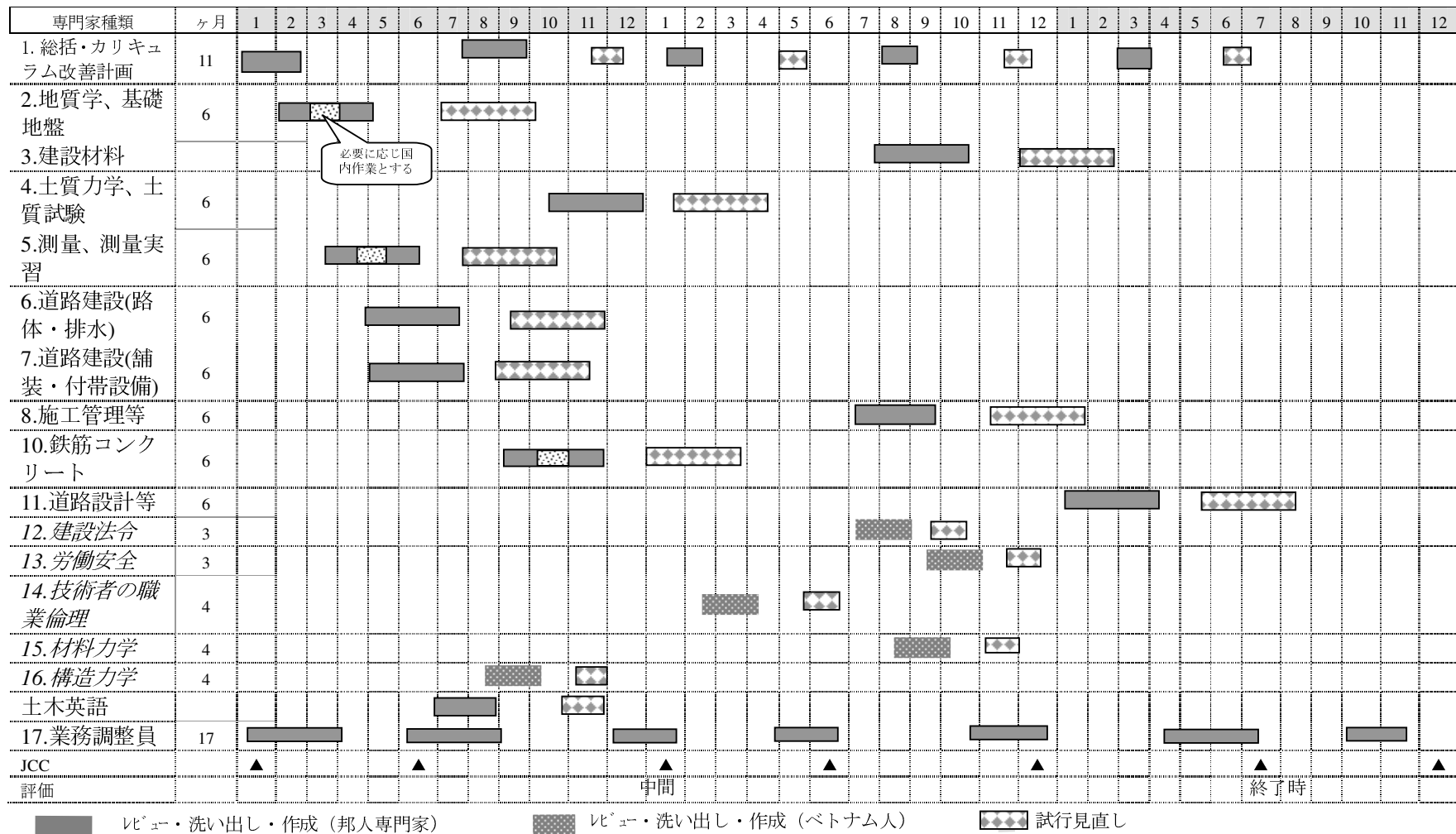
科目リスト(1)	
1) Construction Material	1) 建設材料
2) Geodesy	2) 測量学
3) Reinforce Concrete	3) 鉄筋コンクリート
4) Bridge Inspection and Repair	4) 橋梁点検補修
5) Road Foundation Construction	5) 道路建設 (路体)
6) Road Pavement Construction	6) 道路建設 (舗装)
7) Road Maintenance and Operation	7) 道路維持運営
8) Construction Site Management	8) 現場管理
9) Occupation Moral	9) 職業倫理
10) English in Construction	10) 土木英語

科目リスト(2)	
1) Construction Geology	1) 地質学
2) Soil-mechanics	2) 土質力学
3) Material Toughness	3) 材料力学
4) Bridge Construction	4) 橋梁建設
5) Fundamental Mechanics	5) 基礎力学
6) Structural Mechanics	6) 構造力学
7) Labor safety	7) 労働安全
8) Ground and Foundation	8) 基礎と地盤
9) Bridge Design	9) 橋梁設計
10) Road Design	10) 道路設計
11) Culvert Designing and Building	11) カルバート設計・施工

● 投入規模（専門家、機材、パイロット事業）

専門家	71MM	約1億7750万円
調整員	17MM	約3700万円
現地専門家	18MM	約200万円
通訳	100MM	約1000万円
借り上げ車両	80台M	約1600万円
機材納入管理	8MM	約2000万円
機材		約2億円
一般業務費		約1000万円
本邦研修	0.7MMx5人x3年	訳1000万円
	計	4億8250億円

表III.5 教科書見直し・教師能力強化のための専門家アサイメント表(案)



上記は、カウンターパートとなるCOT教師側の動員可能性、通訳の確保、総括の能力を考え、4つのグループとしている。
 チーフアドバイザーは、全ての教科書・教材のレビューをする傍ら、調整員と共に研修・建設業者等との交流組織の設立を図る。

4. 実施に当たっての留意事項

翻訳のための人数は専門家の同数ないし半数とするが、以下のような問題が考えられる。

- 1) かなり深い専門用語があるのであらかじめその辞書を作る必要がある
- 2) 専門家には上記のほか教師の研修手配、機材の受け入れ手配に対する支援業務がある。

5. 5項目評価

(1)妥当性： ニーズ・政策との整合性： ターゲットグループの妥当性： 日本の支援対象としての妥当性：	3(2)に記載の通り、本プロジェクトはベトナム政府の関連政策及びニーズに合致している。 近代的な高速道路の建設事業の管理・監督に従事するにあたっては必要な技術の習得・向上は、欠かせられない重要な要素である。高規格道路建設事業に必要な技術能力を有する優れた技術者を大幅に増員するため、同国運輸交通省（MOT）は傘下の高速道路建設事業における中核的な技術者の教育に中心的役割を担う交通短期大学（COT）の年間の入学生枠を近年急速増加させつつあることから、COTの道路・橋梁建設分野をプロジェクトの対象にしたことは妥当である。 高速道路整備は対ベトナム国別援助計画において4つの重点分野である「経済成長促進・国際競争力強化」の開発課題とされている「都市開発・運輸交通・通信ネットワーク整備」の援助項目として位置づけられている。また3(3)に記載の通り、JICAの支援方針などとも合致している。 また、日本は高速道路の計画・設計・整備・維持管理を50年近く実施してきた豊富な経験や高度な技術を蓄積しているため、日本の技術の優位性は高い。こうした日本の優れた技術は、プロジェクト対象となるCOT側の優れた技術者養成というニーズにも合致している。
(2)有効性： プロジェクト目標と成果との因果関係：	現場からのニーズに合った実践的高速道路建設技術者の育成を目指すべく教師の能力向上を目標とするものであるため、主として現場重視の観点から対象とする科目を絞り込み、選ばれた科目に対し教育内容や方法を改善するとともに、企業と連携した教師の研修制度の確立を主たる成果とし、日本人専門家の技術的な支援の下、改善活動をカウンターパートである教師が自ら行い、研修へ参加するようプロジェクト設計している。このような活動によって、教育の中心である教師は現場のニーズを常時更新できる上に、更新されたニーズを科目の内容への反映方法を把握できるため、プロジェクト目標の達成が可能と考えられる。
(3)効率性： アウトプット・タイミング・コスト：	1) 本プロジェクトの主要な活動は教材・実習および指導方法の改善であり、これらはCOTのカウンターパートの本来業務であるため、既存の体制の中での対応が可能である。 2) 現場重視の教育・試験機器の供与さらには企業との連携など建設現場のニーズへの対応を念頭に置いたうえで、できるだけ対象科目を絞り込んでおり効率性を追求したプロジェクトとなっている。 3) 一度に多くの科目に取り掛かるのではなく、いくつかの科目をひとまとめにする数バッチに分けそれに対応する短期専門家を派遣することを基本とする。これはベトナム・日本双方の現実的な対応体制を考慮したもので、全体を見ていくチーフアドバイザーとの協議を踏まえ適切な時期に担当科目別専門家が派遣される。 4) COTの教師は、ほとんどがCOTの教師として長年勤めており、永年勤続の実績は高く、また本プロジェクト終了後に多数の教員が異動してしまう可能性は現在のところ小さい。したがって、今回の技術移転の成果は効率よく広がるものと考えられる。本プロジェクトに対し意欲的に取り組む意向であり、提案された改善策等を自ら実施していくことは十分期待できる。また、計画している企業での教師研修も、事前の打診では非常に前向きな返事をいくつかの企業から得ており、企業の協力も十分に見込める。
(4)インパクト：上位目標の内容：	本プロジェクトは、最終的には高速道路建設に従事する人材の能力向上を目指しており、プロジェクトの上位目標では高速道路建設現場に従事するCOT卒業生の知識・能力が向上するとともに、本プロジェクトの成果をもとに他の短期大学等での同科目のカリキュラムが改善することを上位目標とした。このため、本プロジェクト成果を円滑・効率的にCOT2、COT3に普及すべく、COT、COT2、COT3によるコンサルティンググループを結成することとしている。

因果関係：	<p>本プロジェクト終了数年後からは、新しい教材、教育方法で教育を受けた学生が社会人となり建設現場での仕事を開始されることにより、徐々にその効果が出てくるものと見込まれる。</p> <p>また、本プロジェクトを通じて、COT の道路・橋梁建設分野の卒業生の能力向上を図る手法・教材が、他の教育機関へも普及することにより、他の教育機関でも教育能力の向上が図られる。ただし、他の教育機関では、教材とともに必要な資機材をどこまで調達できるかに関し問題点が指摘できる。このことについては、コンサルティンググループを通じた活動でMOTやひいてはMOETの理解が進むことが期待される。同時にMOETのウェブサイトを活用した情報の普及もある。これについては、今回設立するコンサルティンググループにMOETのメンバーの参加を予定しており、十分な協力が期待できる。</p> <p>上位目標を達成させる外部条件は、2009年5月07日付け09/2009/TT-BGDDT号によって定められた「教育機関における情報公開に係わる規則」において、カリキュラムに関する情報公開を促す方針が確認できており、さらに、MOETのウェブサイト上に既に複数の教材が掲載されている点から、成立する可能性が高いと考えられる。</p> <p>上位目標が達成できれば、各短大から輩出される質の高い卒業生は高速道路の迅速・安全・品質が高い高速道路の建設に貢献し、ベトナム全土の交通ネットワークの効果・効率的な建設につながると想定できる。</p> <p>また、負のインパクトは想定されない。</p>
(5)自立発展性：政策制度面：	<p>MOTがCOTの入学卒を急増させたことから見られるように、MOTはCOTの役割を重要視しており、今後COTを技術大学（実習に重点を置く教育を行う大学）に昇格させる方針も決まっている。よってCOTの政策的重要性は高まることはあっても、縮小することは考えにくい。</p> <p>また、COTはMOTが抱える短期大学として最も旧く設立された経緯があり、他の交通短大（COT2、COT3）も同じくMOTの傘下で関連は強い。また、他校、MOETも参加するコンサルティンググループを設立することで合意しており、5(4)に記載の通り本プロジェクトで整備された教材の共有についても積極的に検討されている。</p>
組織財政面：	<p>COTの上部管理機構はMOET及びMOTであるが、両機関の指導のもと学生数の増加や現在新たな実験施設等の建設も進められているなど、組織体制面では自立発展性を担保する環境がある。</p>
技術面：	<p>COTは計画面や学術面での進展を支えるというよりは現場技術の高度化や広範化に対し的確に対応できる、現場に強い専門技術者を育成する使命にこれまでも一般道および橋梁の整備において対応してきた。今後、急拡大する高速道路建設に対し大量の建設需要を消化し技術の高度化とともに品質の確保等への教師人の認識は高く対応意欲には高いものがワークショップでも確認されている。したがって、これらのニーズに対応した教師陣の能力向上は、長期勤務実績も手伝って持続的な展開が図られる。</p>

付属資料目次 (M/M、資料リスト、ほか)

- A: Minute of Meeting and Appendix
- B: Minute of Discussion
- C: Technical Question and Their Answers from Teachers & Students
- D: List of Teachers & Interview Results for Teachers(個人情報含まれるため、掲載せず)
- E: Interview Results for Contractors & Consultants
- F: Questions & Answers from Graduates of COT
- G: Record of PCM Workshop
- H: Letters about Curriculums
- I: Table of Contents of Text Book of COT
- J: Equipment List (Requested one, Existing one in Vinh Yen)
- K: Proposal for equipment from Teachers of COT

**MINUTES OF MEETING
BETWEEN
JICA PREPARATORY STUDY TEAM
AND
AUTHORITIES CONCERNED OF
THE MINISTRY OF TRANSPORT OF VIETNAM
ON JAPANESE TECHNICAL COOPERATION
FOR
THE PROJECT FOR ENHANCING CAPACITY OF TRANSPORT COLLEGE**

In response to the request of the Government of the Socialist Republic of Vietnam (hereinafter referred to as "GOV"), the preparatory study team (hereinafter referred to as "the Team") of the Japan International Cooperation Agency (hereinafter referred to as "JICA") headed by Mr. Hozumi Katsuta, visited Vietnam from 21 February to 27 March 2010, for the purpose of working out the details of the technical cooperation program concerning "the Project for Enhancing Capacity of Transport College" (hereinafter referred to as "the Project").

The Team had a series of discussions with the concerned officials of the Ministry of Transport, the College of Transport (hereinafter referred to as "COT") and other organizations. As a result, the Team and the Vietnamese authorities concerned confirmed the result of discussions as written in the document attached hereto.

Hanoi, March 23th, 2010



Mr. Hozumi Katsuta
Leader
Preparatory Study Team
Japan International Cooperation Agency
Japan



Mr. Do Ngoc Vien
Headmaster
College of Transport
Ministry of Transport
The Socialist Republic of Vietnam

Witnessed by



Mr. Ha Khac Hao
Acting Director General of
Planning & Investment Department
Ministry of Transport
The Socialist Republic of Vietnam

1. DURATION OF THE PROJECT

Three (3) years from the commencement of the Project.

2. MAIN ASSUMPTION FOR THE PROJECT IMPLEMENTATION

(1) COT's function targeted by the Project

COT's function targeted by the Project is to bring up graduates who will have following characteristics: (i) having basic professional knowledge, (ii) having ability to response to requirement at actual construction site, (iii) promising core technicians at construction site.

(2) Status and Role of Counterpart(C/P)

C/Ps are responsible for the implementation of all the Projects activities, on the other hand Japanese Experts are responsible for supporting those activities. In this regard C/Ps need to conduct every Project activity as their own works regularly.

3. PROJECT DESIGN MATRIX

Both sides agreed the draft Project Design Matrix (PDM) for the Project as shown in Appendix 1. The PDM is to be flexibly revised according to the progress and achievement of the Project, upon mutual agreement in the Joint Coordinating Committee.

4. PLAN OF OPERATION

Both sides agreed the draft Plan of Operation (P/O) shown in Appendix 2. The schedule and input are subject to change in the course of the Project, and the Japanese experts and the Vietnamese counterparts shall review P/O.

5. JOINT EVALUATION OF THE PROJECT

Evaluation of the Project will be conducted jointly by JICA and the Vietnamese authorities concerned, interim evaluation at the halfway of the Project and terminative evaluation about six (6) months before termination of the Project in order to examine the achievement of technical development and the Project progress.

6. RECORD OF DISCUSSIONS (R/D)

R/D will determine the framework of the Project. Draft R/D is attached to this M/M for reference in Appendix 3. It will be agreed and signed among Japanese side and the related Vietnamese authorities after approval from JICA Headquarters and authorization of the Representative Agencies of the Socialist Republic of Vietnam.

7. PROJECT IMPLEMENTATION SYSTEM

(i) Project Owner

The project owner is College of Transport, Ministry of Transport.

(ii) Counterpart Personnel

COT agreed to assign their full-time/part-time counterpart personnel to conduct all the Project activities together with Japanese experts as shown in Table-1. Counterpart Personnel will be decided before signing of R/D.

Counterparts from COT and JICA experts will hold periodical meetings in the course of the Project, to confirm the progress of the Project and share information and make necessary coordination for the smooth implementation of the Project.

Table-1 Assignment of Counterpart Personnel (tentative)

No.	Name	Position	Subject in charge
1.	To be decided before signing R/D	To be decided before signing R/D	Project Director
2.	ditto	ditto	Project Manager
3.	ditto	ditto	Construction Material
4.	ditto	ditto	Geodesy
5.	ditto	ditto	Reinforce Concrete
6.	ditto	ditto	Bridge Inspection and Repair
7.	ditto	ditto	Road Foundation Construction
8.	ditto	ditto	Road Pavement Construction
9.	ditto	ditto	Road Maintenance and Operation
10.	ditto	ditto	Construction Site Management
11.	ditto	ditto	Occupation Moral
12.	ditto	ditto	English in Construction

(iii) Consultative Group

Consultative Group will be established with following objective and function:

Objective:

To collaborate to improve teaching contents in the field of road & bridge construction

Function:

- to advise COT about teaching materials and some teaching-related affaires
- to share and discuss the products prepared by the Project

Member: supposed to include persons from COT2, COT3, Ministry of Education and Training, Ministry of Transport (MOT) and JICA experts. COT will consult with organizations concerned, and member of the Consultative Group will be decided before signing of R/D.

(iv) Project Management Unit (PMU)

PMU should be established for the Project in line with Decree 131/2006/ND-CP. COT shall decide member of PMU before signing of R/D.

(v) Joint Coordinating Committee (JCC)

JCC is the committee to confirm the progress of the Project, discuss important matters and make decisions for the better implementation of the Project. It is held at the timing of project's milestone at least once a year.

The members will be the representatives from COT (Headmaster), MOT, JICA and relevant organizations. Member of the JCC will be decided before signing of R/D.

8. PROJECT IMPLEMENTING OFFICE

The Project implementing office for JICA Experts shall be provided in the building of COT. The Team requested that the office should be able to accommodate fifteen (15) persons and be equipped with broadband internet access, air-conditioning and electric power supply available every time working in the office. COT took note of the request and explained that expenditures other than office cost will subject to the available allocation of the counterpart fund, which is decided by MOT and Ministry of Finance later on and proposed JICA to provide the remaining necessary equipment, facilities and running expenses for JICA Team.

Location of the office will be decided by COT at the earliest convenience.

9. OTHERS

(1) Potential Subjects to be object of Activity 1 of draft PDM

Both side understand that two subjects namely "Soil Mechanics" and "Construction Geology" included in Selected Subject List (2) attached to the draft PDM will have high potential to move to Selected Subject List (1) attached to the draft PDM after their review at the early stage of the Project.

(2) Treatment of the subject “Occupation Moral” after the Project

The COT agreed that the subject “Occupation Moral” will be compulsory in the COT curriculum during the period of or after the completion of the Project.

(3) Detail Contents of Equipment

Detail content of equipment will be decided through consultations among JICA experts, JICA Vietnam Office and COT in some occasions including the beginning of the Project. Besides Annex III List of Machinery and Equipment of draft R/D, COT requested additional equipment shown in Appendix 4. In response to the request, JICA explained the following principles for the selection of equipment.

- The first principle: Equipments for cooperation shall be for the testing on the road constructing site of the constructor, not for research center etc.
- The second principle: Priority shall be given to the equipment which is necessary for “the strengthening the subjects: Topo-survey, Material toughness, Construction geology, Soil-mechanics, Construction Materials, RC Concrete, Asphalt Concrete, Road Construction, Basic Bridge Construction, Bridge Inspection, Road management and Construction Project Management”. Because the road design, bridge design and the high technology bridge construction were assumed that the necessity was comparatively low for the graduate of COT.
- Heavy Construction Machines are out of the scope of this project.
- Very expensive testing equipments which exist in manufacturers’ Laboratory or Research Institute are principally assumed to be out of object of this project.
- Testing equipment for Asphalt, Cement and Steel bar are excluded although ASTM and TCVN demand those testing. Because the purchased material such as Asphalt or Cement are normally quality controlled on the manufacturers’ responsibility. Those materials will be guaranteed by their quality certificates which will needs special testing skill for getting accurate results.

(4) Evaluation of Progress of actions taken to attain measures proposed in Activity 2-2 of draft PDM

Evaluation of Progress of actions taken to attain measures proposed in Activity 2-2 of draft PDM will be conducted as a part of activities in JCC where counterparts are requested to submit progress report on those actions.

(5) Persons to be trained in Japan

Candidate trainees in Japan will be selected among C/Ps involving in the Project's activities in principle through consultation between Team Leader of Japanese Expert Team and Project Director. JICA will make final approval on those trainees.

(6) Vietnamese side and JICA shall consult with each other in respect of any matter that may arise from or in connection with the Project.

List of Attendants

Vietnamese Side

Ministry of Transport

Mr. Le Manh Hung	Vice Minister
Dr. Hoang Ha	Chief of Department of Science and Technology
Mr. Pham Thanh Tung	Chief of International Cooperation Department
Mr. Tran Quoc Toan	Vice Chief of Infrastructure Department
Mr. Tran Bao Ngoc	Vice Chief of Personel Department
Mr. Tran Duc Hai	Vice Chief of Planning and Investment Department
Mr. Nguyen Trong Phu	Staff of Department of Science and Technology
Mr. Nguyen Ngoc Hai	Staff of Planning and Investment Department
Mr. Nguyen Van Nghia	Staff of Personel Department

Ministry of Education and Training

Mr. Van Dinh Ung	Vice chief of Ministry office
Mrs. Huong Ly	Department of International Cooperation
Mrs. Thu Ha	Department of Higher Education

College of Transport

Mr. Do Ngoc Vien	Headmaster
Mr. Do Van Hoach	Vice headmaster
Mr. Tran Quang Dung	Vice headmaster
Dr. Vu Ngoc Khiem	Chief of Department of Science, Technology and International Cooperation
Mrs. Nguyen Thi Uy	Chief of Construction Faculty
Mr. Nguyen Hoang Long	Vice chief of Training Department
Mr. Nguyen Quang Hung	Chief of Geodesy Division
Mr. Nguyen Van Doan	Chief of Road Division
Mr. Phung Ba Thang	Vice chief of Bridge Division
Mrs. Ngo Thi Thanh Huong	Chief of Division of Construction Material and Soil-mechanics
Ms. Nguyen Thi Thu Hien	Staff of Department of Science, Technology and International Cooperation

Japanese Side

Survey Team, Japan International Cooperation Agency (JICA)

Mr. Katsuta Hozumi	Leader
Mr. Kinoshita Tomotaka	Evaluation Analysis/Educational Planning
Mr. Kaneda Koki	Road Construction & Maintenance 1
Mr. Nishijima Kuniaki	Road Construction & Maintenance 2
Dr. Phan Le Binh	Cooperation Planning

JICA Vietnam Office

Ms. Hoang Thi Tuat	Program Officer
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Draft PROJECT DESIGN MATRIX (PDM)

Project title : Project for Enhancing Capacity of Transport College

Partnerpart : College of Transport(COT)

Project Group : Teachers of Road and Bridge Construction Field, COT

Beneficiary: students of Road and Bridge Construction Field, COT; Construction industry

Narrative Summary	Objective verifiable Indicators	Means of Verification	Important Assumption
<p>Overall Goal</p> <p>Enhancement of high-graded highway (including expressway) construction capacity of graduates from Road and Bridge Construction Field, COT</p> <p>Enhancement of training capacity of other transport colleges in main subjects related to the field of road and bridge construction</p>	<p>1-1. Upgrading of the reputation on graduates from Road and Bridge Construction Field, COT by construction enterprises</p> <p>1-2. Evaluation by graduated students on contents of education is improved.</p> <p>2-1. Adoption of teaching materials made in COT by other colleges</p> <p>2-2. Information provision on training capacity enhancement from COT</p>	<p>- Questionnaire to construction enterprises</p> <p>- Questionnaire to graduated students</p> <p>- Records of adoption in other colleges</p> <p>- Records of putting teaching materials from COT on the web site of MOET</p>	<p>MOET will continue to put teaching materials on its web site.</p>
<p>Project Purpose</p> <p>Enhancing of training capacity in Road and Bridge Construction Field of COT such that requirement from actual construction site will be reflected.</p>	<p>1. New textbooks are introduced to the Curriculum of Road and Bridge Construction Field of COT</p> <p>2. Implementing of training of teachers in the construction enterprise</p>	<p>- Revision of Curriculum</p> <p>- Record of training in construction enterprises</p>	
<p>Outputs</p> <p>Improvement of contents and theory/practice teaching method of selected subjects list (1) and enhancing training capacity of teachers who are in charge of the selected subjects list (1)</p> <p>Issues and measures for subjects in selected subjects list (2) are defined</p> <p>Establishing teachers' capacity upgrading system in collaboration with construction enterprises</p>	<p>1-1. New teaching materials are prepared</p> <p>1-2. Lectures/Practices are implemented using new teaching materials</p> <p>2-1. More than 50 % of Improvement actions proposed are implemented</p> <p>3-1 Training system for teachers in collaboration with the construction enterprises is authorized</p>	<p>- Number of approved Teaching materials</p> <p>- Record of lectures or practices using new materials</p> <p>- Record of improvement actions for necessary subjects</p> <p>- Official documents in COT</p> <p>- Minute Of Meeting with construction enterprises</p>	<p>Upgraded teachers through technical transfer continue to work in COT</p> <p>Construction enterprises cooperate with COT</p>

<u>Activities</u>	<u>Inputs</u> (Japanese side) (a) Experts (b) Equipment (c) Training in Japan (d) Seminar	(Vietnam side) (a) Counterparts (b) Working environment (c) Counterpart budget	<u>Assumptions</u>
<p>Following activities are carried out for selected subjects list (1)</p> <ul style="list-style-type: none"> -1 Reviewing existing teaching materials, practice and teaching method -2 Elaborating improvement measures for teaching materials, practice and teaching method, and making implementation plans for those measures. -3 Preparation of teaching materials and manuals -4 Trial implementation of lectures/practice with new teaching materials -5 Revision of teaching materials based on trial implementation, and establishing new teaching materials <p>Following activities are carried out for subjects list (2)</p> <ul style="list-style-type: none"> -1 Based on review of existing teaching materials, practice and teaching method of selected subjects list (2), if necessary, selecting one or more than one subjects to be added to selected subjects list (1), then implementing activity 1 to those subject(s). -2 Elaborating improvement measures (including equipments revision) for the necessary subjects of the rest in selected subjects list (2) -1 Studying on teachers' capacity and relevant issues -2 Establishment of consultative meeting between teachers and construction enterprises -3 Drafting training system for teachers in collaboration with construction enterprises (field, number of person, duration, cost allocation, etc) 			

<p>-4 Consultation with construction enterprises to formulate training framework</p> <p>-5 Trial implementation of some trainings</p> <p>-6 Establishment of training system for teachers in collaboration with construction enterprises in COT</p>		
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Selected Subjects List (1) (Subjects need to be improved)
<ol style="list-style-type: none"> 1) Construction Material 2) Geodesy 3) Reinforce Concrete 4) Bridge Inspection and Repair 5) Road Foundation Construction 6) Road Pavement Construction 7) Road Maintenance and Operation 8) Construction Site Management 9) Occupation Moral 10) English in Construction

Selected Subjects List 2 (List of subjects need further consideration)
<ol style="list-style-type: none"> 1) Construction Geology 2) Soil-mechanics 3) Material Toughness 4) Bridge Construction 5) Fundamental Mechanics 6) Structural Mechanics 7) Labor safety 8) Ground and Foundation 9) Bridge Design 10) Road Design 11) Culvert Designing and Building

Draft Plan of Operation						
Year	1st Year		2nd Year		3rd Year	
	First Half	Second Half	First Half	Second Half	First Half	Second Half
	Joint Coordination Committee Evaluation					
Output 1 Improvement of contents and theory/practice teaching method of selected subjects list (1) and enhancing training capacity of teachers who are in charge of the selected subjects list (1)						
1-1	Reviewing existing teaching materials, practice and teaching method					
1-2	Elaborating improvement measures for teaching materials, practice and teaching method, and making implementation plans for those measures.					
1-3	Preparation of teaching materials and manuals					
1-4	Trial implementation of lectures/practice with new teaching materials					
1-5	Revision of teaching materials based on trial implementation, and establishing new teaching materials					
Output 2 Issues and measures for subjects in selected subjects list (2) are defined						
2-1	Based on reviewing existing teaching materials, practice and teaching method of selected subjects list (2), if necessary, selecting one or more than one subjects to be added to selected subjects list (1), then implementing activity 1 to those subject(s).					
2-2	Elaborating improvement measures (including equipments provision) for the necessary subjects of the rest in selected subjects list (2)					
Output 3 Establishing teachers' capacity upgrading system in collaboration with construction enterprises						
3-1	Studying on teachers' capacity and relevant issues					
3-2	Establishment of consultative meeting between teachers and construction enterprises					
3-3	Drafting training system for teachers in collaboration with construction enterprises (field, number of person, duration, cost allocation, etc)					
3-4	Consultation with construction enterprises to formulate training framework					
3-5	Trial implementation of some trainings					
3-6	Establishment of training system for teachers in collaboration with construction enterprises in COT					

(DRAFT)
RECORD OF DISCUSSIONS
BETWEEN
JAPAN INTERNATIONAL COOPERATION AGENCY
AND AUTHORITIES CONCERNED OF THE GOVERNMENT OF
THE SOCIALIST REPUBLIC OF VIETNAM
ON JAPANESE TECHNICAL COOPERATION FOR
THE PROJECT FOR ENHANCING CAPACITY OF TRANSPORT COLLEGE

With regard to the technical cooperation project concerning the “Enhancing capacity of Transport College”, the Japan International Cooperation Agency (hereinafter referred to as “JICA”) had a series of discussions through the Resident Representative of JICA Vietnam Office with the Vietnamese authorities concerned on measures to be taken by JICA and the Government of the Socialist Republic of Vietnam for the successful implementation of the Project for Enhancing Capacity of Transport College.

As a result of the discussions, and in accordance with the provisions of the Agreement on Technical Cooperation between the Government of Socialist Republic of Vietnam and the Government of Japan, signed on October 20, 1998 (herein referred to as “the Agreement”), JICA and the Socialist Republic of Vietnam authorities concerned agreed on the matters referred to in the documents attached hereto.

Hanoi, (DATE), 2010

Mr. Motonori TSUNO

Resident Representative
 JICA Vietnam Office
 Japan International Cooperation Agency
 Japan

Representative

Ministry of Transport
 The Socialist Republic of Vietnam

Representative

College of Transport
 The Socialist Republic of Vietnam

THE ATTACHED DOCUMENT

I. COOPERATION BETWEEN JICA AND THE GOVERNMENT OF THE SOCIALIST REPUBLIC OF VIETNAM

1. The Government of the Socialist Republic of Vietnam will implement the Project for Enhancing Capacity of Transport College (hereinafter referred to as "the Project") in cooperation with JICA.
2. The Project will be implemented in accordance with the Master Plan which is given in Annex I.

II. MEASURES TO BE TAKEN BY JICA

In accordance with the laws and regulations in force in Japan and the provisions of Article II of the Agreement, JICA, as the executing agency for technical cooperation by the Government of Japan, will take, at its own expense, the following measures according to the normal procedures of its technical cooperation scheme.

1. DISPATCH OF JAPANESE EXPERTS

JICA will provide the services of the Japanese experts as listed in Annex II. The provision of Article III of the Agreement will be applied to the above-mentioned experts.

2. PROVISION OF MACHINERY AND EQUIPMENT

JICA will provide such machinery, equipment and other materials (hereinafter referred to as "the Equipment") necessary for the implementation of the Project as listed in Annex III. The provision of Article VIII of the Agreement will be applied to the Equipment.

3. TRAINING OF VIETNAMESE PERSONNEL IN JAPAN

JICA will receive the Vietnamese personnel connected with the Project for technical training in Japan.

III. MEASURES TO BE TAKEN BY THE GOVERNMENT OF THE SOCIALIST REPUBLIC OF VIETNAM

1. The Government of the Socialist Republic of Vietnam will take necessary measures to ensure that the self-reliant operation of the Project will be sustained during and after the period of Japanese technical cooperation, through full and active involvement in the Project by all related authorities, beneficiary groups and institutions.
2. The Government of the Socialist Republic of Vietnam will ensure that the technologies and knowledge acquired by Vietnamese nationals as a result of the Japanese technical cooperation will contribute to the economic and social development of the Socialist Republic of Vietnam.
3. In accordance with the provisions of Article VI of the Agreement, the Government of the Socialist Republic of Vietnam will grant in the Socialist Republic of Vietnam privileges, exemptions and benefits to the Japanese experts referred to in II-1 above and their families.
4. In accordance with the provisions of Article VII of the Agreement, the Government of the Socialist Republic of Vietnam will take the measures necessary to receive and use the Equipment provided by JICA under II-2 above and equipment, machinery and materials carried in by the Japanese experts referred to in II-1 above.
5. The Government of the Socialist Republic of Vietnam will take necessary measures to ensure that the knowledge and experience acquired by the Vietnamese personnel from technical training in Japan will be utilized effectively in the implementation of the Project.
6. In accordance with the provision of Article V of the Agreement, the Government of the Socialist Republic of Vietnam will provide the services of Vietnamese counterpart personnel and administrative personnel as listed in Annex IV.
7. In accordance with the provision of Article V of the Agreement, the Government of the Socialist Republic of Vietnam will provide office and basic office furniture and communication facilities (excluding international telephone) for the project team.
8. In accordance with the laws and regulations in force in the Socialist Republic of Vietnam, the Government of the Socialist Republic of Vietnam will take necessary

measures to supply or replace at its own expense machinery, equipment, instruments, vehicles, tools, spare parts and any other materials necessary for the implementation of the Project other than the Equipment provided by JICA under II-2 above.

9. In accordance with the laws and regulations in force in the Socialist Republic of Vietnam, the Government of the Socialist Republic of Vietnam will take necessary measures to meet the running expenses necessary for the implementation of the Project.

IV. ADMINISTRATION OF THE PROJECT

1. (Person, to be determined by COT before signing of R/D), as the Project Director, will bear overall responsibility for the administration and implementation of the Project.
2. (Person, to be determined by COT before signing of R/D), as the Project Manager, will be responsible for the managerial and technical matters of the Project.
3. The Japanese Team Leader will provide necessary recommendations and advice to the Project Director and the Project Manager on any matters pertaining to the implementation of the Project.
4. The Japanese experts will give necessary technical guidance and advice to Vietnamese counterpart personnel on technical matters pertaining to the implementation of the Project.
5. For the effective and successful implementation of technical cooperation for the Project, a Joint Coordinating Committee will be established whose functions and composition are described in Annex V.

V. JOINT EVALUATION

Evaluation of the Project will be conducted jointly by JICA and the Vietnamese authorities concerned, at the middle and during the last six months of the cooperation term in order to examine the level of achievement.

VI. CLAIMS AGAINST JAPANESE EXPERTS

In accordance with the provision of Article VII of the Agreement, the Government of the Socialist Republic of Vietnam undertakes to bear claims, if any arises, against the Japanese experts engaged in technical cooperation for the Project resulting from,

occurring in the course of, or otherwise connected with the discharge of their official functions in the Socialist Republic of Vietnam except for those arising from the willful misconduct or gross negligence of the Japanese experts.

VII. MUTUAL CONSULTATION

There will be mutual consultation between JICA and the Government of the Socialist Republic of Vietnam on any major issues arising from, or in connection with this Attached Document.

VIII. MEASURES TO PROMOTE UNDERSTANDING OF AND SUPPORT FOR THE PROJECT

For the purpose of promoting support for the Project among the people of the Socialist Republic of Vietnam, the Government of the Socialist Republic of Vietnam will take appropriate measures to make the Project widely known to the people of the Socialist Republic of Vietnam.

IX. TERM OF COOPERATION

The duration of the technical cooperation for the Project under this Attached Document will be 3(three) years from the date of first expert's dispatch to Vietnam.

- | | |
|-----------|---|
| ANNEX I | MASTER PLAN |
| ANNEX II | LIST OF JAPANESE EXPERTS |
| ANNEX III | LIST OF MACHINERY AND EQUIPMENT |
| ANNEX IV | LIST OF VIETNAMESE COUNTERPART AND ADMINISTRATIVE PERSONNEL |
| ANNEX V | JOINT COORDINATING COMMITTEE |

ANNEX I

MASTER PLAN

Overall goal

1. Enhancement of high-graded highway (including expressway) construction capacity of graduates from Road and Bridge Construction Field, COT
2. Enhancement of training capacity of other transport colleges in main subjects related to the field of road and bridge construction

Project Purpose

Enhancing of training capacity in Road and Bridge Construction Field of COT such that requirement from actual construction site will be reflected.

Expected Output

1. Improvement of contents and theory/practice teaching method of selected subjects list (1) and enhancing training capacity of teachers who are in charge of the selected subjects list (1).
2. Issues and measures for subjects in selected subjects list (2) are defined.
3. Establishing teachers' capacity upgrading system in collaboration with construction enterprises.

Activities

1. Following activities are carried out for selected subjects list (1).
 - 1-1 Reviewing existing teaching materials, practice and teaching method.
 - 1-2 Elaborating improvement measures for teaching materials, practice and teaching method, and making implementation plans for those measures.
 - 1-3 Preparation of teaching materials and manuals.
 - 1-4 Trial implementation of lectures/practice with new teaching materials.
 - 1-5 Revision of teaching materials based on trial implementation, and establishing new teaching materials.
2. Following activities are carried out for subjects list (2);
 - 2-1 Based on review of existing teaching materials, practice and teaching method of selected subjects list (2), if necessary, selecting one or more than one subjects to be added to selected subjects list (1), then implementing activity 1 to those subject(s).
 - 2-2 Elaborating improvement measures (including equipments provision) for the necessary subjects of the rest in selected subjects list (2).
- 3-1 Studying on teachers' capacity and relevant issues

- 3-2 Establishment of consultative meeting between teachers and construction enterprises
- 3-3 Drafting training system for teachers in collaboration with construction enterprises
(field, number of person, duration, cost allocation, etc)
- 3-4 Consultation with construction enterprises to formulate training framework.
- 3-5 Trial implementation of some trainings.
- 3-6 Establishment of training system for teachers in collaboration with construction enterprises in COT.

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ANNEX II

LIST OF JAPANESE EXPERTS

- 1) Chief Advisor
- 2) Construction Material
- 3) Geodesy
- 4) Reinforced Concrete
- 5) Bridge Inspection and Repair
- 6) Road Foundation Construction
- 7) Road Pavement Construction
- 8) Road Maintenance and Operation
- 9) Construction Site Management
- 10) Occupation Moral
- 11) English in Construction

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ANNEX III

TENTATIVE LIST OF MACHINERY AND EQUIPMENT

No	Equipments
I	(Topo-survey)
1	Total Station
2	Leveling instrument
3	Global Positioning System
II	(Hydraulics-Hydrography)
III	(Labor safety)
1	DVD Material for Labour safety
2	Protectiveness Personally For Student
3	Safety Equipment
IV	(Environment in Construction)
1	BOD Analytic Equipment
2	DO Measuring Apparatus
3	Dust Measuring Apparatus
4	Noise Measuring Apparatus
V	(Material toughness, steel structure)
1	Electronic Strain gage
VI	(Foundation and base)
1	DVD Material for Pile test loading
VII	(Construction geology)
1	DVD Material for Soil survey
2	Geotextile tensile test clamp attachment
VIII	(Soil-mechanics)
1	Large Capacity Drying ovens
2	Medium Capacity Drying ovens
3	Manual Compression Apparatus
4	Soil Automatic Compaction
5	Boll Mixer (soil, moltar, cement) 5L
6	Liquid Limit Device And Glass Plate
7	Cooling Temperature Water Baths
8	Desiccator
9	Moisture And Density (RI or other type)
10	California bearing ratio test
11	Direct Shearing test
12	Ro-tap Sieve Shakers
13	Set of ASTM Soil Sieves
14	Hydrometers
15	Electronic Balance ~0.01g; 0.1g; 1g
IX	(Construction material)
9.1	(Cement Concrete)
1	Los Angeles Abrasion Machine
2	Ro-tap Sieve Shakers
3	Large Size Sieve Shakers
4	Proving Ring 1000KN
5	Diamond Core Drilling Machine
6	Test Sieve Set
7	Air Meter
8	Sand Density Cone Set
9	Digital Thermometer DP350
10	Concrete Sampling Mold

9.2	(Cement Mortar)
9.3	(Asphalt)
1	DVD Material for Asphalt testing
9.4	(Asphalt Concrete)
1	Marshall Automatic Compaction
2	Compaction soundproofing Box
3	Marshall Automatic Stability Testing
4	Constant Temperature Water Baths
5	Asphalt Mixer - 30 liter
7	Large Capacity Drying ovens
8	Medium Capacity Drying ovens
9	Electronic Balance (20kg ~ 0.1kg)
10	Small Asphalt Mixer 5l
11	Abson Extraction Testing
12	Centrifuge For Abson Method
13	Electronic Balance, preciseness ~0.01g; 0.1g; 1g
X	(Road Design)
1	A0, A1 Printer
2	A3, A4 Printer
XI	(Road Construction)
	DVD Material for Road Construction machines
XII	(Road Inspection)
1	Swedish Sounding Apparatus
2	Cone penetrometer
3	Standard Penetrometer
4	Plate Bearing Test
5	International Roughness Index
6	Falling Weight Deflectometer
7	Benkelman Beam Tester
8	3 M Profile Meter
XIII	(Bridge Design)
1	Specialized class room includes:
2	A0, A1, A3, A4 Printer
3	DVD Material
XIV	(Bridge Construction)
1	DVD Material for PC Bridge Construction
XV	(Bridge Inspection)
1	Clack gauge (Insert type gap measure)
XVI	(General Laboratory Equipments)
XVII	Others
1	Laptop PC
2	Video Projector
3	Language Learning Equipment
4	International Standard Reference Books

ANNEX IV

LIST OF VIETNAMESE COUNTERPART AND ADMINISTRATIVE PERSONNEL

1. Counterpart Personnel

- (1) Project Director: (position)
- (2) Project manager: (position)

(3) Counterpart staff

No.	Name	Position	Subject in charge
1.	To be decide before signing of RD	To be decide before signing of RD	Construction Material
2.	ditto	ditto	Geodesy
3.	ditto	ditto	Reinforce Concrete
4.	ditto	ditto	Bridge Inspection and Repair
5.	ditto	ditto	Road Foundation Construction
6.	ditto	ditto	Road Pavement Construction
7.	ditto	ditto	Road Maintenance and Operation
8.	ditto	ditto	Construction Site Management
9.	ditto	ditto	Occupation Moral
10.	ditto	ditto	English in Construction

(4) Office staff

2. Administrative Personnel (Project Management Unit (PMU))

- (1) Project Director: (position)
- (2) Project Manager: (position)
- (3) (list of the positions of PMU members)

3. Consultative group

Objective

To collaborate to improve teaching contents in the field of road & bridge construction

Functions:

- to advise COT about teaching materials and some teaching-related affaires
- to share and discuss the products prepared by the Project

Members:

Name	Title/Position	Organization
To be decide before signing of RD	To be decide before signing of RD	COT1
ditto	ditto	COT2
ditto	ditto	COT3
ditto	ditto	MOT
ditto	ditto	MOET
ditto	ditto	JICA expert(s)

ANNEX V

JOINT COORDINATING COMMITTEE

1. Function

The Joint Coordinating Committee will meet at least once a year and whenever the necessity arises, in order to fulfill the following functions;

- (1) To discuss and approve the annual work plan of the Project based on the approved annual budget in line with the Tentative Schedule of the Implementation formed under the framework of the Record of Discussion;
- (2) To review the overall progress and annual expenditure of the Project as well as the achievement of the Annual Work Plan mentioned above; and
- (3) To review and exchange views on major issues arising from or in connection with the Project.

2. Composition

[Member of Vietnamese side]

Project Director, Project Manager, Representative(s) from MOT, Representatives from Vietnamese counterparts

[Member of the Japanese side]

Japanese experts, Resident representative of JICA Vietnam Office

LIST OF ADDITIONAL EQUIPMENTS PROPOSED BY COT
Project for enhancing capacity of the College of Transport

No	Equipments	Remarks
1	Topo-survey	
2	Hydraulics-Hydrography	
3	Labor safety	
4	Environment in Construction	
5	Material toughness, steel structure	
	Multifunctional Steel Drawing Machine	
	Fatigue Testing Apparatus	
	Welding Ultrasonic Testing Machine	
	Dynamic Deformation Measuring Apparatus	
	Vibration Measuring Apparatus	
	Impaction type Vibration Testing Equipment	
	Prinel hardness measuring Apparatus	
6	Foundation and base	
	Axial Press Load Capacity of Pile Testing Apparatus	
	Horizontal Loading Capacity of Pile Testing	
	Axial Tension Load Capacity of Pile Testing	
	PDA, PIT, Osterberg Equipment	P.I.T: ASTM D5882 - 07 - Standard Test Method for Low Strain Impact Integrity Testing of Deep Foundation PDA: ASTM D4945 OSTERBERG: ASTM D1143-1995
7	Construction geology	
	Geology Drill Apparatus	
	Mineral Sample Set	
	Apparatus for Tensile Properties of geotextile	ASTM-D4595
	Apparatus for Deterioration of geotextile from Exposure to Ultraviolet light and water	ASTM-D4355
	Apparatus for Grab Tensile Strength and ultimate Elongation	ASTM-D4632
	Apparatus for Trapezoid Tearing Strength	ASTM-D4533
	Apparatus for Apparent Opening Size	ASTM-D4751
	Apparatus for Puncture Strength	ASTM-D4833
	Apparatus for Burst Strength	ASTM-D3786
	Apparatus for Permeability	ASTM-D4491
8	Soil-mechanics	
	Roller Compaction	Outside dimension: 850W x 3100D x 245H (mm) or 850W x 2000L x 1600 H (mm) Loading method: Loading by a weight using a lever system Radiums of roller: 475 mm Linear pressure: 0 to 36 kg/cm ² Wheel load: 0 to 1000 kg Power supply: motor 200V x 0.75 KW Speed reducer: reduction ratio 1:200 Speed varible 4 stage change

	Air Compression	<p>Dimensions: 1500L x 500W x 950H (mm) Free air delivery: 16.0 cfm Receiver capacity: 150 Litres Maximum pressure: 1380 kPa Continuous working pressure: 1000 kPa Electrical supply: 400-440 V AC, 50 Hz, 3 ph</p>
	Motorized Compression Apparatus	<p>DC-8E series Standard current characteristics are 115 or 220 volt, 1 HP, 50 or 60 cycles, single phase.</p>
	Repeated Load Triaxial Tester	<p>Load Measurement: Axial loads measured through Model DL 5103 100 kg capacity Proving ring Load Capacity: 100 kg capacity, Load applied through motorized gear box with variable transmission Loading System: Variable speed electric transmisson. Constant strain rates from 0.01 mm to 1 mm per minute set on a precision regulator. Lateral Pressure System: Maximum of 7 kg per square cm Strain measurement: DL - 51 Dial Indicator, 30 mm x 0.01 mm mounted on the specimen chamber to measure piston movement Specimen Chamber: Cylinders are 150mm outside diameter clear plastic, Strainliss steel loading piston with stroke of 30 mm Standard equipment supplied for 35 mm and 50 mm diameter specimen. Adaptable to tther sizes.</p>
	Pressurization Water Permeability	
	9 Construction material	
	9.1 Cement Concrete	
	Specimen Cutting Machine	<p>Blades from 100 mm to 460 mm diam The specimen table head can be qichkyl adjusted from 0 to 700 mm by a conveniently mounted handle</p>
	Checker Water	<p>Model MIC - 138-1-02 (MARUI & CO.,LTD)</p>
	Moisture Determination Balance	<p>Graduation from 0 - 100 gram and 0-100% are projected to a glass screen to permit accurate indication to 0.01 gram and 0.1%. Capacity of the balance is 200 grams</p>
	Concrete Test Hammer	<p>Range of measurement: MAX 600 kg, Suitable more than 200 kg/cm2 Dimension: 300 x 180 mm Weight: 3.5 kg</p>

	Yield Buckets set 2l 10l 30l	DA-6-1: 140 x 130 mm; 2l; 10mm DA-6-2: 240 x 220 mm; 10l; 10~40 mm DA-6-3: 350 x 310mm; 30 l; 40 mm
	Sample Splitter Set 5, 10, 15, 20, 25, 30mm	Consist of a hopper with set of alternately discharging chutes for having sample. With pan and scoop
	Calibration Anvil For Testing Hammer	
	Curing Water Tank	
	Concrete Compression 2000KN	Compression Machine with Accessories or Standard Compression Machine with Accessories
	Water penetrable mesuring apparatus	
9.2	Cement Mortar	
	Motar Flow Table	300 mm diameter and furnished with interchangeable shafts for 3 mm and 12.5 mm drop The speed of the motor driven device is approximately 100 r.p.m
	Motorized Mortar Flow Table	ASTM C-230 This Flow Table is manufactured according to ASTM Specification to make flow tests for consistency of hydraulic cement. Consist of: Table , 10" Φ (254 \pm 2.5mm) (Bronze) Table Supporting Frame Flow Cone (Bronze) Tamping Rod (wood) Motor for Single Phase A.C 60w Clutch Installation Supporting Frame of Motor
	Slump Cone Set	Consist of a slump cone with handles and foot piece, plated steel, tamping rod, 16 mm dia. X 610 mm long with rounded end, galvanized mixing pan with handles, and slump measuring tool.
	Density Sand	It can be used on soils containing partileles not larger than 50 mm in diameter The apparatus consists of a 4 liters jar and detachable cone having a brass valve with a 12.7 mm diameter orifice
	Forced Mixing Concrete Mixer 60 litres	Forced Mechanical Mixer Capacity of mixing drum is 55 liter and three mixing blades rotate approximately 74 r.p.m the moter is 2 horse - power 200 volt
	Mortar Mixer	Model DC - 98: Concrete mixer The load-balanced drum is 600 mm in diameter. The reinforced steel The wheels have roller bearing and tires.

	Portable Bearing Tester	EL29-3846 760 mm dia Bearing Plate Weight: 56 kg
	Electronic Balance 300g~0.001kg	Capacity: 360g Resolution: 0.001g Pan size: 100 mm dia Overall dimensions: 260L x 170W x 90H (mm) Weight: 4 kg
	Electronic Balance 20kg - 0.1kg	Capacity: 20000g Resolution: 0.1g Pan size: 340 x 300 mm Overall dimensions: 314L x 460W x 164H (mm) Weight: 19 kg
	Electronic Balance 60kg ~ 0.1kg	Capacity: 60000g Resolution: 10.0g Pan size: 600 x 460 mm Overall dimensions: 580L x 440W x 950H (mm) Weight: 22 kg
	Sample Car	
9.3	Asphalt	
	Pug Mixer 30l	1000W x 1080D x 800H (mm) Weight 300 Kg
	Gyratory Testing machines	Vertical force: 0-20kN ± 100 N Gyratory angle: 0 - 3 ± 0.02 degrees Gyration rate: 6 to 60 ± 0.1 gyration per minute Number of gyrations: up to 999 Specimen height: Minimum 50 mm Operating pressure: 800 to 1000 kPa Weight: 410 kg
	Refrigerated Ductility Machine	The tensile speed is available in either 50mm/min or 100mm.min The machine is a direct motor driven type with a 150 cm pull. The testing device consists of a wooden water bath with scales, a motor, 100V x 200 W. A thermometer, a mold base plate and three briquette molds.
	Automatic Softening Point	
	Softening Point	The apparatus consists of four steel balls, four rings, a ring clamp, a glass container, asbestos thermometers for softening point and a ball centering guide on special order.

	Wax Content Tester	Constant temperature bath, metal: 1 set Cylinder, brass: 1 set Test tube: 1 set Glass bottle: 1 set Vacuum pump, 100 V x 1/8 HP: 1 set
	Brookfield CPS-E1	
	Vacuum Suction Apparatus	
	Vacuum Suction Bottle	
	Constant Temperature Water Baths	Capacity: 48 litres Working area: 560 x 330 mm Max water depth: 258 mm Controller: Digital Temperature: Range 0 to 99.9°C; Stability ± 0.1 Electrical supply: 220-240 V AC, 50 Hz, 1 ph Rated power: 1.5 kW Weight: 5.5 kg
	Refrigerant Machine	
	Specific Gravity Bottle	Hubbard-Carmick Specific Gravity Bottle. Conical Type 25ml. Or Jibbard-Carmick Specific Gravity Bottle. Cylindrical Type 24 ml
9.4	Asphalt Concrete	
	Density and water absorption	
	Dual Console Compression Testers	
	Cleveland Flash Point Testers	The tester consists of a body, sample container, liquid bath, heater, complete with a thermometer for testing, 0 to 100°C and thermometer for liquid bath, 20 to 50°C
	Saybolt Viscosimeter	The tester body electric model consists of a heater, 100 V x 500 W and cooling pipe self-contained insulating bath and sample container, complete with a stirring device, holder, filter, flash and thermometer (0 to 200°C) Filter disc 84µ Flash 60 cc Thermometer: 0 to 200°C Syringe: 1 Syringe: 1 Sampling cup: 1 Replacement ring: 1

	Automatic Recovery of Asphalt	Extraction flask Airation tube Condenser Gas flow meter with stand 100ml/min Thermometer 0 to 300°C Electric heating mantle 100V x 500 W with Slyduks
	Soxhlet	Soxlet extractor
	Head Permeameter	Model No. DS - 40A Consists of: Mould 1000ml Screen 0.42, 200 Stand pipe Water tank Bottle 2l Bottle of aspirator Receiver Straight edge
	Falling Head Permeameter	Compaction permeameter This cell is basically a 1000ml compaction mould which is clamped between a base and top so that a falling head permeability test may be carried out on a compacted sample
	Constant Head Permeameter	
	Salt Densimeter	
	Salt Densimeter (KANTABU)	
	Blaine Fineness Apparatus	Blaine air Permeability Apparatus Weight 2.8 kg
	Consistometer	EL34-0300/01 series Vibro Consistometer For 220-240 V AC, 1 ph
	Engine-Type Dynamo	
	Constant Temperature Room	
	Asphalt Equipment	
	Density and water Absorption	
	Density Balance, preciseness ~ 0.1g	Buoyancy Balance, 15kg x 0.5 g Consists of frame, water tank and suspension hook For 220 - 240 V AC, 50-60 Hz, 1 ph Accessory: EL34-8105 Cradle, for supporting cube and cylinders
	Capacity Asphalt Cetrifuge Extractor (3000rpm)	Rota test 3000g Capacity. 220V AC, 50-60 Hz, 1ph 559L x 305W x 508H (mm) Control: Variable speed, 0-3600 rpm Cover: Precision-machined aluminium; removable,with integral cup for adding solvent
10	Road Design	

11	Road Construction	
12	Road Inspection	
	Wheel Tracking Machine	(Small size) Measuring the depth of the track; Weight: 900kg
	Hawkeye 2000	Measuring road profile ASTM-E950 class 1; AASHTO PP37; ASTM E1854; ISO 13473; AASHTO PP38; Longitudinal profile Accuracy: +-0.5mm
	Friction Tester	Fiction Tester. Weight 31 Kg Accessories: Baseplate: with specimen mounting block for use with machine in a laboratory. Weight 8 kg. Detachable Scale: with mounted rubber slider for use with the machine in a laboratory. Supplied complete in box.
13	Bridge Design	
14	Bridge Construction	
15	Bridge Inspection	
	Dynamic Stress Apparatus	
	Concrete Ultrasonic Machine	
	Oscillograph	
	Deflection Measuring Apparatus of Bridge Span Structure by Laser	
16	General laboratory equipment	
17	Others	

List of Meeting minutes

No	Meeting	Date
1	対処方針会議	12 Feb. 2010
2	Kick-off meeting with COT	22 Feb. 2010
3	Meeting with Vinh Yen Training Center	26 Feb. 2010
4	Meeting with COT3 (HCMC)	01 March 2010
5	Meeting with Ministry of Transport	02 March 2010
6	Meeting with Ministry of Education and Training	03 March 2010
7	Meeting with Planning and Finance Department of MOET (Mr. Hien)	09 March 2010
8	Meeting with COT on interim study result of JICA team	11 March 2010
9		

議事録(案)

ベトナム事務所
担当 ファンレビン
TEL: +84-4-38315005

議題: ベトナム国「高速道路建設事業従事者養成能力強化プロジェクト」対処方針会議

1. 日時・場所: 2010年2月12日(金) 10:00~11:00 本部229会議室/ベトナム事務所
2. 出席者: 以下合計10名
【国交省】菅国際指導係長(総合政策局国際建設推進室)、十名国際調査係長(道路局企画課)
【調査団】勝田団長(総括/ベトナム事務所)、ビン団員(協力企画/ベトナム事務所)、木下団員(評価分析/グローバル)、兼田団員(道路建設維持管理1/ペガサスエンジニアリング)、西嶋団員(道路建設維持管理2/ペガサスエンジニアリング)
【JICA】本村課長(経済基盤開発部)、小関職員(東南アジア第二部)、長瀬次長(ベトナム事務所)
3. 内容
 - 1) 対処方針(案)説明(ビン団員より) 詳細は配布資料「対処方針(案)」参照。
 - 2) 質疑応答(発言者敬称略)
 - (ア) 高速道路の定義について
 - ・【木下】ベトナムにおける「高速道路」の定義は存在するのか。ハノイ近郊やホーチミンでは、高速道路工事が発注されているとの情報がある。本件は、「高速道路」よりは「自動車専用道路」を対象とすべきではないのか。
 - ⇒【ビン】ベトナムで「高速道路」の定義は明確ではない。
 - (イ) 高規格道路の工事について
 - ・【木下】ハノイ近郊には高規格道路の工事を行う企業が存在するのか。
 - ⇒【ビン】工事は高速道路専門の企業ではなく、運輸省傘下の企業が実施しているとの情報がある。
 - ⇒【兼田】VRA(Vietnam Road Administration)は高速道路専門の企業ではないのか。
 - ⇒【ビン】VRAは一般道の維持管理を行っており、別の技協が行われている。高速道路は運輸省が行っている。
 - (ウ) 交通短大について
 - ・【兼田】本件で対象の交通短大(4年制)の他に交通大学(5年制)があるが、これらの位置づけはどうなっているのか。
 - ⇒【ビン】大学は座学を中心とした講義形式が多い。短大も5年制大学化が計画されているが、Practicalな授業で現場実習が多く、大学になっても現場実習に注力される点では変わらない。
 - ・【兼田】日本では大学・短大の教員のレベルは論文発表の経歴等で判断されることが多い。ベトナムではどうか。
 - ⇒【ビン】論文等の明確な基準は無く、事前調査にて情報収集し、判断基準を検討する。
 - ・【兼田】機材についてはどのような調査が考えられるか。
 - ⇒【ビン】道路建設に必要な技術について実習できるような機材の整備状況を確認する。具体的には、砂やセメント等の材料があるか、また、道路の平坦性をチェックする機材なども必要と考える。詳細は今後検討する。
 - (エ) ITSについて
 - ・【兼田】ITSについて、交通管理や料金徴収(公示に記載あり)も本件の対象と考えるのか。
 - ⇒【ビン】交通管理や料金徴収は、現状確認と導入部分への協力を考えている。
 - (オ) ホーチミン視察について
 - ・【十名】ホーチミン交通短大へ講師を派遣する予定はあるか。
 - ⇒【ビン】現時点では可能性は低い。ホーチミンの教員をハノイに出張させて教えることは考えられる。
 - (オ) 質問票について
 - ・【木下】調査対象が多いが、返答にはどのくらい時間を要するか。調査前半の企業訪問前にある程度情報をまとめたい。
 - ⇒【勝田】本日調査団へ質問票を送付、2/18までに修正・英訳して事務所へ返信、2/22ベトナム語翻訳、2/27対象機関への配信を予定している。教員(約90名)へのアンケートと、COTが選定する企業(4~5社)とコンサルへの訪問を予定。
 - ⇒【兼田】企業や教員向けのアンケートの回答を1週間で回収するのは難しいと懸念される。前倒しで実施できないか。
 - ⇒【ビン】ベトナムでは2/15(月)~2/18(木)が旧正月(テト)で公休となるため、前倒しは難しい。また、アンケートは学校関係のみを対象としており、1週間で可能と考える。企業については、選定した数社にヒアリングすることを予定している。
 - ⇒【勝田】質問票から高速道路整備事業の現状を把握したい。1~2週間では困難な部分もあると懸念されるが、これらの情報はプロジェクト実施に絶対必要というわけでもない。調査期間(1ヶ月)内で、可能な限り情報収集を行う。
 - (カ) 対処方針(案)記載事項について
 - ・【本村】「便宜供与事項」という記述は、「先方負担事項」と修正すべき。
 - 3) 今後の予定
 - ・2010年3月16日に中間報告会を予定。
 - ・2010年4月8日(AM)に帰国報告会を予定。

以上

MINUTES OF MEETING WITH COLLEGE OF TRANSPORT

Time: 2 p.m 22 February 2010

Venue: Hanoi Collage of Transport

Participants:

Japanese side:

Mr. Katsuta Hozumi	Team leader, Senior Project Formulation advisor, JICA
Mr. Kaneda Koki	JICA's consultant, Road and Bridge Maintenance & Development
Mr. Nishijita Kuniaki	JICA's consultant, Road and Bridge Maintenance & Development
Mr. Kinoshita Tomotaka	JICA's consultant, Evaluation and Analysis, Education planning
Ms. Hoang Thi Tuat	JICA Vietnam Office
Mr. Vu Gia Hien	Senior highway expert, Vietnam bridge and road association
Ms Tran Thi Loan	Interpreter / Translator
Ms Nguyen Hai An	Interpreter / Translator

Vietnamese side:

- Mr. Do Ngoc Vien- COT Headmaster
- Mr. Vu Ngoc Khiem- Chief of Science- Technology and Foreign Affairs Department
- Mr. Hieu- COT staff
- Mr. Nguyen Hoang Long- Deputy Chief of Training Department
- Ms. Nguyen Thi Thu Hien- COT staff
- Ms. Viet Ha- COT staff

Brief introduction by Mr. Vien- Headmaster:

Transport demand of Vietnam increases by 16% per year, whereas transport infrastructure is poor which causes high transport cost. This issue is demanded to be addressed by the transport sector.

Under the Transport Development Strategy, expressway network is developed such as: Hanoi- Lao Cai Expressway, Sai Gon- Trung Luong Expressway which was put into operation in 2009, Ninh Binh-Cau Gie and others. This expressway development requires high demand on human resource. To ensure the expressway quality, human resource must be ensured, particularly college education and training.

The College aims at providing training towards practical technology orientation (especially road and bridge construction) at college level. The College also plans to upgrade to university level as the Government has the policy to encourage multi-level education at college and university levels to provide improved training on technology and techniques, and knowledge.

Mr. KATSUTA asked what target the College set for this Project, as to whether the College will continue to train at college level or to upgrade the training to university?

Mr. Vien: Vietnam Government encourages the university technology training, however, this training level requires competent facilities and staff and management. This target has been approved for the College. Presently, the College is providing college and technician training. Therefore, if the university training is not mentioned in this Project, then this Project coverage will lack this aspect. However, the highest target of the Project is set to ensure that graduate quality is responsive to production requirements. In order to meet this requirement, 3 issues must be addressed: 1. training goal, curriculum; 2. Facility; 3. Staff

capacity strengthening for technology transfer and student education. Due to budget constraint, the College can not address this requirement, so the College hopes this Project will help to address this issue comprehensively.

This Project was proposed in 2005 focusing on college level training; however, university training was recognized necessary later on, therefore the College proposed university training level to this Project.

Mr. KATSUTA: the College should focus on training level, particularly college level, as set for this Project.

Whether it is easy to change the curriculum? Whether it is easy to be approved by MOET?

Mr. KHIEM: MOET encourages the application of advanced and modern curriculum from foreign countries; therefore, the approval on change to curriculum will face no difficulty. The College will report, register the curriculum to MOET to get approval from this Ministry. The College expected a drastic change to their curriculum.

The College prepared a list of 21 subjects to be covered by T.A from this Project; however, as explained by Mr. KATSUTA on the capacity limit, the College was requested to narrow down the list to top necessary selection.

The issues on dissemination of this Project outputs to other COTs in Danang, HCMC?

Mr. KATSUTA asked whether the involvement of other COTs into a committee (for example: consultation with COT3 on curriculum) is needed?

Mr. KHIEM: as other COTs under MOT was splitted from this COT, the dissemination of Project Output (once proved to be appropriate) to other COTs is easy; and the involvement by other COTs to a committee for consultation on curriculum is a good idea.

With the orientation towards practical technology training, the College is requested to narrow down to 5 most important items. The College needs to inform:

1. priority in their proposal
2. issues faced during teaching

The College confirmed it had reserved 1 working room for JICA mission, and collected teacher for interview and other arrangements for meeting: COT3 is ready for the meeting; the College had requested meeting to Cienco 1, Cienco 8 (specialized in expressway construction); Thang Long Corporation (specialized in bridge construction).

The meeting ended at 4p.m.

MEETING MINUTE

Time: 10:00 am, 26th February 2010.

Venue: Vinh Yen Training Center, College of Transportation.

Participation:

College of Transport (CoT) and Vinh Yen Center	
<u>Name</u>	<u>Position</u>
Mr. Nguyen Van Bang	Vice Director, Vinh Yen Training Center
Ms Nguyen Thi Uy	Dean of Construction Faculty, CoT Hanoi
Mr. Le Van Dau	Manager of Administration Department, Vinh Yen Training Center
Ms To Van Hoa	Chief of Foreign Language Division, CoT Hanoi
Mr. Doan	Chief of Road Division, Construction Faculty, CoT Hanoi
Mr. Nguyen Duc Tuyen	Vice Dean of Construction Faculty, CoT Hanoi, based in Vinh Yen
JICA survey team:	
<u>Name</u>	<u>Position</u>
Mr. Katsuta Hozumi	Team leader, Senior Project Formulation advisor, JICA
Mr. Kaneda Koki	JICA's consultant, Road Construction 1
Mr. Nishijita Kuniaki	JICA's consultant, Road Construction 2
Mr. Kinoshita Tomotaka	JICA's consultant, Evaluation, Education plan
Mr. Vu Gia Hien	Senior highway expert, Vietnam bridge and road association
Ms Tran Thi Loan	Interpreter / Translator
Ms Nguyen Hai An	Interpreter / Translator

DETAILS OF DISCUSSION

- Mr. Katsuta on behalf of JICA survey team expressed his gratitude to the Center's management for reserving the time to receive and meet the Team. Mr. Bang welcomed JICA's mission members to the Center and expressed his willingness to provide the Team with any necessary information for the survey.
- **JICA team would like to focus on collecting information on the Center's facilities and organization structure and ideas on how to implement the Project.**
 1. The Vinh Yen Training Center organization is structured into 3 departments (Training department, Administration department; Finance and Accounting Department); 6 faculties (Construction, Mechanics, IT, Basic Sciences, Politics Studies, Transport Economics) and 2 divisions (Technical Basics and Physical Education).
The 6 faculties are in nature sub-faculties belonging to the administration of the respective faculties in CoT Hanoi.
 2. The facilities for the Vinh Yen Training Center include office buildings for teachers and staff; classrooms for theory and practice teaching; mess hall, canteen and a security team.
- **Mr. Katsuta raised the question about the main functions of the Training Center whether the focus would be on training or on education and the inter-relation between CoT and Vinh Yen Training Center.**

1. Mr. Bang replied that the Vinh Yen Training Center had the same curriculum and training programs as those of the CoT Hanoi.
 2. The name “training center” resulted from the history of the center’s development, however it could be understood as a branch of CoT Hanoi with same curriculum and policies.
 3. Ms Uy added that in nature the Vinh Yen Center was the same as CoT Hanoi. The only differences were in location and the entrance scores (20 points for CoT and 16 points for Vinh Yen Training Center). All training schedules and programs are the same as in CoT Hanoi.
- **Mr. Katsuta asked if the applicants to be college students were from the neighboring areas and how the teachers move to complete their teaching duties between both institutions?**
 1. Ms Uy answered that the entrance exam was open to all applicants. Any students could apply depending on their wishes. Due to the requirements on entrance scores, students had to assess their own ability to apply for the most possible institutions. Even though the requirements on inputs of students are different between the 2 institutions, the requirements for the outputs are the same for the graduates.
 2. The arrangement for transportation of teachers is flexible. Vinh Yen training Center has some permanent employees that work full time in the Center. Depending on the requirements of any particular stage of the curriculum, CoT Hanoi will send their teachers to meet the demands.
 - **Mr. Katsuta said that the Project team later would stay in Hanoi and work with Vietnamese counterparts in Hanoi. If the counterparts move to Vinh Yen the outputs of the project will be automatically disseminated to Vinh Yen.**

The College confirmed that as a branch of CoT Hanoi, Vinh Yen Training Center will follow the same curriculum and programs as in CoT Hanoi.
 - **Mr. Kaneda noticed that some construction equipments were available at Vinh Yen Center but not in Hanoi. Does this mean that more practice are available to students in Vinh Yen?**
 1. Mr. Bang replied that students from Hanoi CoT will come to Vinh Yen Training Center for practice training in basic skills (such as masonry and concrete works, preparation of reinforcement and scaffolds, etc.) The target group is Year 2 students.
 2. The practice training lasts 3 weeks for students from Hanoi CoT.
 3. The text books applied in Vinh Yen Training Center are the same as those used in CoT. They are issued by CoT Hanoi after approval by the headmaster.
 - **Mr. Katsuta asked if there was any particular subject that was different in Vinh Yen Training Center from CoT Hanoi.**
 1. Mr. Bang and Ms Uy confirmed that there was no difference between the two institutions. At the moment due to the lack of teachers some lecturers have to travel back and forth between the two locations.
 - **Mr. Katsuta requested to observe the Center’s facilities. He also requested the Center to submit a list of existing equipments and facilities and a list of equipment that the Center would like to receive as assistance from this Project.**
 1. Mr. Bang replied that he would provide the list after the meeting.
 2. Mr. Bang also stated that most equipments in the Training Center were old and outdated as they were supplied by Russian or Chinese donors.

3. As for the request for equipment supply under the Project, the Center would like to have the same equipments as in Hanoi CoT.
- **Mr. Katsuta expressed JICA's wish to extend the cooperation. However, due to the limitation in capacity, it would be better to focus on one location. JICA will consider supplying some equipments to Vinh Yen training center but would like to focus on Hanoi. Another reason for this focus is that the Japanese experts will come and work in Hanoi CoT so it would be difficult for them to utilize the equipments if they were located in Vinh Yen.**
- **Mr. Kaneda noticed in CoT brochure that there were 500 computers available. How many are available in Vinh Yen Center?**
 1. There are close to 200 computers, out of which 80 computers are used in lectures, the remaining are for staff and library usage.

After the meeting both sides visited the facilities of the Vinh Yen Training Center, including the laboratories, the model display room, the on-going practice classes and some storage rooms.

The visit concluded at 11.45am, 26 February 2010.

Meeting minute with COT 3

1. JICA team members

- Mr. Katsuta
- Mr. Kinoshita
- Mr. Kaneda
- Ms. Tuat

2. Participants from COT 3

- Mr. Nguyen Khanh Tuong – Vice Rector in charge of Science and Technology and International Cooperation
- Mr. Nguyen Ngan Giang – Chief of Science and Technology and International Cooperation Department
- Mr. Nguyen Hang Vu – Dean of Road and Bridge Faculty

3. Participants from Hanoi COT 1

- Mr. Vu Ngoc Khiem – Chief of Science and Technology and International Cooperation Department
- Mr. Nguyen Hoang Long – Deputy Chief of Training Department

Mr. Katsuta introduced the JICA team members as well as the objectives of the visit. The Team is working in Vietnam for 1 month, and MM is expected to be signed late March 2010. After the signing of MM the official agreement will be signed around May 2010, followed by selection of Consultants. The Project is expected to commence in September 2010.

After the introduction from Mr. Katsuta, Mr. Tuong briefed the Team on the development history and the tasks of COT 3:

- Introduction of the staff members at the meeting as listed;
- COT 3 was established on 28 December 1976 originally as the Transport Vocational School 3. The school was officially upgraded to be College of Transport 3 on 12 July 2002.
- Tasks:
 - Providing college training, professional school training, short-term and long-term vocational training;
 - Science researches; construction and services for the transport sector.

*** Training:**

COT 3 is currently providing training in:

- Technical college education: 10 specialized courses:
 1. Major course: Road and bridge construction
 2. Industrial and Civil construction
 3. Construction machinery and automobile
 4. Business Administration
 5. Construction Economics
 6. Road carriage operation
 7. Finance and Banking
 8. New material technology
 9. IT
 10. Enterprising accounting

- Professional school training – 10 specialized courses:

1. Major course: Road and bridge construction
2. Industrial and Civil construction
3. Construction machinery and automobile
4. Business Administration
5. Construction Economics
6. Road carriage operation
7. Finance and Banking
8. New material technology
9. IT
10. Enterprising accounting

- Vocational school training: 5 specialized courses:

1. Automobile technology.
2. Metal cutting
3. Construction techniques.
4. Enterprising accounting
5. Welding technology

*** Scope of training:**

- Number of students:

- + Long term regular students: 7,500 students (including technical college students for 3-year course, professional school students for 2 year course and vocational school students for 2 year course). After graduation the students are granted with relevant diplomas.
- + Short term irregular students: 40,000 students (training from 3 to 6 months, students are granted with short-term certificates).

- Receiving employers:

Mainly Vietnamese enterprises; a few are employed in other sectors.

- Difference with COT 1:

- + Difference in locations and admission areas (COT 1 admits applicants in the North; COT 3 admits applicants in the South);
- + Difference in training courses: (COT 1 has 17 courses, COT 3 has 10 courses);
- + Difference in training scope: COT 1 has larger scope than COT 3.

- Road and bridge construction curriculum:

- + Comply with the standard curriculum framework stipulated by MOET;
- + Some subjects in the curriculum may have different time frames between 2 colleges, but the contents and structure of the modules in the curriculum are generally the same.

*** Introduction of Road and Bridge Construction faculty:**

- Size: 3,000 students:

- + 2,500 technical college students;
- + 500 students in professional and vocational schools.

- Curriculum:

- + Same as in COT 1:
 - ✓ General subjects
 - ✓ General professional subjects

✓ Specialized professional subjects

- No. of lecturers in the faculty: 42

+ 1 PhD, 5 Master cum PhD students, 23 masters, 13 engineers.

*** Opinions for improvement of training quality:**

- No specialized course for expressway available yet;

- Demand for expressway is high currently therefore COT 3 would like to provide training course in this area too;

- COT 3 also provides training towards technology with focus on practice;

- Need to improve programs and textbooks for various subjects;

- Improvement of staff capacity and facilities;

*** More questions from Mr. Katsuta:**

- Does the college survey for opinions and ideas from enterprises?

The College often invites the enterprises to participate in seminars at the College. General opinion is that the study is too theory-focused and lacks practical side.

- Both enterprises and College agree on the lack of practice in training.

- Lecturers' practical knowledge: Some lecturers have had actual construction experience, some new teachers still lack the practical experience.

- Expressway construction subjects: still in initial idea stage

- Important factors:

+ Equipments and facilities for practice.

+ Usage of teaching support equipments (projectors) for better effectiveness.

+ Increase practice and site training time.

+ Supplement more equipments

+ Improvement of lecturer's capability: The College is currently send lecturers for further and higher professional training, i.e. for master and PhD courses.

- Modification of textbooks: This work is carried out annually;

- What is the percentage for modification: some subjects require no modifications, some subjects require a lot of modifications.

4. Relation between COT 1 and COT 3

- COT 1 and COT 3 are both under the administration of MoT;

- Relation between COT 1 and COT 3 has a long history;

- COT 3 requested COT 1 to provide training at college level at COT 3 especially in road and bridge construction around 8 years ago using COT 1's curriculum and textbooks;

- Since 2002 COT 3 has been upgraded to College level so can provide the technical college level education by themselves. However, there have been regular exchanges of ideas, academic activities, curriculum and textbooks with COT 1.

- About the idea of establishing a channel (committee) among COT 1, COT 2 and COT 3 to work together to resolve issues, collect information for curriculum modification: COT 3 agrees but if the College leaders are appointed to the Committee it will be very difficult because of their busy schedules and the traveling distance. However COT 3 fully supports the idea

to have participation from level of Deans or Chiefs of Departments as this is a good opportunity for the College to improve their training quality in road and bridge courses; to modify curriculum and textbooks and to access the new and modern methods.

- COT 3 proposes the followings to enhance capacity of lecturers::
 - + Sending teachers on study tours;
 - + Participating in workshops/ seminars;
 - + Short-term training courses for lecturers.

The meeting between JICA team and COT 3 finished at 11:50am, 01 March 2010.

5. The Team visited the laboratories for road and bridges construction at COT 3 from 11:50 am to 12:45pm.

MINUTES OF MEETING

Venue: MOT

Time: 2p.m 2 March 2, 2010

MOT Vice Minister Le Manh Hung started the meeting by a warm welcome to JICA Mission: JICA has extended its assistance for many programs in Vietnam, including the training for transport infrastructure development as is much necessary for many countries.

Introduction on MOT participants:

- Vice Minister Le Manh Hung
- Dr. Hoang Ha- General Director of Science- Technology Department
- Mr. Pham Thanh Tung- General Director of International Relations Department
- Mr. Tran Quoc Toan- Deputy Director of Infrastructure Department
- Mr. Tran Bao Ngoc - Deputy Director of Organization and Labor Department
- Mr. Nguyen Quoc Hai- Deputy Director of Planning and Investment Department
- Mr. Vien- Headmaster of College of Transport

Mr. KATSUTA introduced the study team for the Project for enhancing the capacity of College of Transport:

- Mr. KATSUTA- JICA Vietnam Office- JICA Team Leader
- Mr. Nishijima: Mission member- in charge of Road Construction
- Mr. Kaneda: Mission member- in charge of Road Construction
- Mr. Phan Le Binh- JICA Vietnam Office- in charge of Cooperation Planning
- Mr. Kinoshita: Mission member- in charge of Education Planning, Evaluation
- Team assistants: Mr. Hien, Loan and An

Mr. KATSUTA thanked MOT for sparing their time for the meeting with JICA team

Mr. KATSUTA made brief introduction on the background of the Project and working schedule of JICA Mission with highlighted milestones as:

- One last week interview with COT teachers, students, graduates and Japanese construction companies.
- 3 March 2010: meeting with MOET
- 9 March planned for the workshop on PCM,
- 16 or 17 March 2010 is planned for PDM, PO, MM draft. As the main objective of this mission is to formulate the Project framework and PDM and Operation Plan, the participation of MOT into the finalization of the Project Operation Plan and Minutes is necessary.
- 19 March 2010 is planned for the finalization of MM with MOT
- 23 March 2010 is planned for the MM signing of MM with the signers to be JICA and COT. MOT official who administer this Project is welcomed to sign on this MM, however, the decision on MOT signing on MM is at MOT decision.

Mr. KATSUTA concluded his brief on the Project Background and Mission Schedule and strongly requested close cooperation and support from MOT.

Vice Minister Hung agreed with the request of Mr. KATSUTA, and introduced Mr. Vien- COT Headmaster to represent COT ideas on the Project

Mr. Vien introduced the major contents of the Project:

Project Target: the College would like to strengthen the road and bridge construction capacity, with focus on expressway construction.

Project Content:

- Improvement to curriculum
- Improvement to facilities
- Transfer of technology and equipment to the College
- Capacity building for the lecturers

Regarding the working schedule, COT has made arrangements to concerned agencies and corporation for the survey by JICA mission.

Vice Minister Le Manh Hung asked for JICA opinions on COT ideas?

Mr. KATSUTA: During the consultation with COT, JICA Mission talked about 4 points raised by COT, basically JICA Mission understood and agreed with the Project content, and both sides need further discussion on how to implement this Project, what content and equipment to be improved. Detailed contents of the Project shall be finalized through the consultation process by both sides, which is planned to be completed in the 3rd week of this month.

Mr. KATSUTA raised some questions to inquire for MOT answer, on technology and education level in the field of road development, although these questions had been raised for discussion with COT.

Mr. HUNG: MOT is the line management ministry of COT with COT being a member of MOT. The curriculum, training materials, schedules are guided by and agreed with MOET. COT is the supplier of skillful workers, practical experts for construction firms, project management units in the transport sectors as well as for agencies of other sectors.

According to the Expressway Development Strategy towards 2025, 3,000 kilometers of expressway is planned to be constructed. Therefore, MOT has assigned its university, colleges including COT to train and provide skillful workers, practical experts, especially in the field of road construction and testing. The 40km HCMC- Trung Luong Expressway is the very first expressway in the South, and the workers for this project belonging to Cienco8, 6, 1, 4 and Thang Long Corporation were trained from Ba Vi Transport Vocational School and the COT. The operators and technicians from Ba Vi School as well as technicians from COT are performing so well in this expressway project and other projects.

Besides training under the curriculum, COT also provides trainings under the orders from MOT, and construction firms.

Mr. KATSUTA: What's the difference between COT and the universities under MOT ?

Under MOT, there're some universities and colleges including: HCMC Transport University, Maritime University, Hanoi College of Transport, HCMC College of Transport. The curriculum and training materials are not different among these institutions. The procedure on staff and teacher recruitment, student enrolment follow general regulations and MOET regulations. Just like a family, there's no difference between university under MOT and those under MOET.

Mr. KATSUTA: so the role of the upgraded COT and the role of the university under MOET are the same?

Mr. HUNG: In principle, they are similar. The transport university under MOT and the Civil Engineering University under MOC, or some under MOET all provide training on road and bridge engineering.

COT is more biased to practice and experiment. This is a good example among the current problem in Vietnam education of “redundancy of master, shortage of (skillful) worker”. Therefore, through COT, MOT wants to supply the work force for its sector, with more practical experts.

Mr. KATSUTA: what is MOT policy on the capacity strengthening for education institution like COT on the aspect of road development?

Mr. HUNG:

MOT policy is as mentioned:

- Improvement to curriculum
- Improvement to practical and testing facilities
- Transfer of technology from Japan, as competent to the development stage of Vietnam

In order to support the Project and ensure the success of JICA Mission, MOT assigns Dr. Hoang Ha (a former lecturer of Transport University- Road and Bridge Faculty) to act as the leader of MOT taskforce team (including experts from Departments of Planning and Investment; International Relations and Organization and Labor) to facilitate the discussion between JICA Mission and COT. Unless otherwise planned, Mr. Hung will attend the MM signing ceremony between JICA and COT on 23 March.

Mr. KATSUTA thanked MOT for this kind support and the acceptance of participation into the MM signing ceremony by the Vice Minister. He raised 1-2 more questions as to what function MOT expects to COT?

Mr. HUNG: The COT is expected to provide training for technicians and workers for transport sector, these staff should be able to update themselves with new technology.

MOT plans to propose to the competent authorities on the upgrade of COT to university level as to “Transport Technology University” to train practical engineers. With JICA Mission coming to COT to discuss on the scale of technical assistance, technology transfer and human resource development for the purpose to assess COT current conditions, Mr. HUNG believes that MOT idea to upgrade COT is on right direction.

Mr. KATSUTA: JICA Mission is trying their best on this mission, however, target areas are not clear. It's understood that COT aims at training for technicians to work on site, JICA is targeting on those students to work on site. There's still confusions on the definitions on graduates from COT and university, JICA need more discussion with COT to further understand.

Mr. HUNG: JICA Mission needs more discussion with COT, for education and training system are different by countries. A college:

- Have shorter training duration in comparison with that at university level
- Have lesser theory training, more focus on practice
- Have lower entrance score.

College students have more practice time on equipment operations and testing than university students. This reflects the training policy that: to train university students to learn independently, to train a college student to perform his work well.

In Vietnam, there's no expressway construction faculty in any university, COT is expected to train experts for expressway construction.

Mr. KATSUTA: We have understood to some extent, it seems "practical" the key word to distinguish between college and university, COT is expected to provide practical training.

Mr. HUNG recommended JICA Mission to have further discussion with Mr. Vu Gia Hien- a leading expert of transport sector, who graduated from international and domestic university and worked as Deputy G.D of TEDI and Deputy GD of MOT Science- Technology Department, to obtain more understanding.

JICA Mission prepared some interview questionnaire on level of construction and quality control for MOT inquiry, Mr. Hoang Ha will assign Mdm. Hang- Planning and Investment Department to act as a coordinator to answer this questionnaire.

Mr. HUNG thanked the JICA Mission for the fruitful meeting and hoped that JICA mission will reach to a meaningful conclusion for this Project. Mr. KATSUTA thanked Mr. HUNG for his welcome to the Mission and hoped to be strongly supported by MOT to reach to good conclusion.

The meeting concluded at 3:10 p.m.

Minutes of Meeting with Ministry of Education and Training

Time: 9 a.m 3 March 2010

Venue: Ministry of Education and Training

Participants:

JICA Mission side:

- KATSUTA- JICA Mission Leader
- KANEDA- Mission member
- NISHIJIMA- Mission member
- KINOSHITA- Mission member
- Mr. HIEN- Local Consultant
- Ms. Loan- Interpreter
- Ms. An- Interpreter

COT:

- Mr. Vu Ngoc Vien- COT Headmaster
- Mr. Do Van Hoach- COT Vice Headmaster
- Mr. Vu Ngoc Khiem-
- Ms. Nguyen Thu Hien

MOET side:

- Mr. Van Dinh Ung- Vice Chief of MOET Office, expert of International Relations Department
- Ms. Huong Ly- officer of International Relations Department
- Ms. Thu Ha- officer of Higher Education Department

Mr. Ung started the meeting by a welcome to JICA Mission and willing to answer all possible questions from the team. Mr. Ung informed that on 27 February, the Prime Minister has issued the instructions on the renovation of administration over higher education for the period 2010- 2012; and MOET will hold a national conference on Saturday for the introduction of this instruction. Today visit of the mission is on the same issue, which is a good harmonization.

The instruction on the renovation of administration over higher education for the period 2010- 2012 is under translation into English and will be made available to JICA Mission upon its completion.

Mr. KATSUTA introduced the Mission members and schedule.

Mr. UNG: this project is under the administration of MOT which is short-listed for T.A for the fiscal year 2009- 2010. MOET is willing to provide cooperation and support so that the project can be established with

appropriate goals, MOT's programs and MOET's training targets. Any information relevant to MOET will be responded.

Mr. KATSUTA asked for clarification on Vietnam education system: is there any difference between university under MOT and those under MOET? As explained by MOT, they are similar.

Ms. Thanh Ha: in Vietnam education system which is under MOET administration, there're some universities under the line management of other ministries, however, these ministries management are on staffing, operation issues, the curriculum and training system are subject to MOET.

As the major targets of the Project is to strengthen COT capacity, as COT has a long history and experience in road and bridge construction training, Ms.Ha believed that COT has the basic condition to receive this Technical Assistance; and the Project output will be easily disseminated.

The Project should focus on the capacity strengthening for the lecturers who should be trained to be competent in professional capacity, even up to doctor or master level, and good at training skill, so that the lecturers can be competent to intake the Project support and to provide training of new curriculum to the students.

The curriculum should basically follow MOET's framework; however, MOET still encourages curriculum renovation. MOET framework is very flexible, covering only 50% of total curriculum; the colleges are allowed to establish their curriculum responsively to demand and technology requirements. Moreover, scientific researches and technology transfer are also important activities.

Mr. KATSUTA: this Project targets at college level (not university level), scientific research is not appropriate at college level. College training aims practical training for the student's working at site.

Ms.HA: the difference between university and college lie at the ratio of training, with more academic education for university students, and more practical skill based on good theoretical basis for college student. Vietnam education system is similar to other countries, at higher education level, there're 2 levels of college and university/ post-graduation. Curriculum for each level is different. University education is more biased to research and some study on professional application. College education focuses on application, professional practice so that graduate can quickly approach to actual works. In Vietnam, college graduate can complete the college training

and take 1,5 years training at university level for the same profession to obtain the university degree.

To open a new discipline, the college should prepare the capacity for the lecturers by training of doctorate or master level as well as the teaching method.

College training should provide basic knowledge and working skill at site. To ensure the good skill, much practice and experiment should be provided. To facilitate the practice and experiment, a college should be equipped with experiment and practice facilities and be cooperated with internship establishments for student practice.

MOET provides frameworks for each education level, including what kind of certificate/ diploma is granted upon the fulfillment of the curriculum. This is general framework (previously covering 60-70%, nowadays reducing to 50%), each college will develop their own curriculum with reference to the framework, student graduated from college will receive diploma from the college.

Vietnam Government has issued a strong strategy on university development, MOET has extended its cooperation with many countries for the establishments of many breakthrough universities (Vietnam- Germany; Vietnam- France; Vietnam- Japan; etc.) And college education is also needed to be developed. Especially when the Government has planned to construct 6,000 km of expressway, where demand for technician will be high. Therefore, JICA Technical Assistance to COT is on right direction.

Mr. KANEDA: the T.A aims at the improvement of lecturer's capacity and curriculum, whether MOET has any idea on these targets?

Mr. UNGL: MOET agrees with these targets. Any curriculum under funded project which is advance, modern and responsive to society demand, will be appropriate to be applied to MOET for approval. For questionnaire to MOET, JICA team should prepare a written questionnaire and send to Mr. Ung, Mr. Ung will coordinate for the feedback to this questionnaire.

The meeting ended at 10:00 a.m.

NOTES FROM MEETING WITH MINISTRY OF EDUCATION AND TRAINING

Subject: Foreign funded projects for colleges and universities in Vietnam

Time: 9.30 am, 9 March 2010

Venue: MoET

Participant:

- Vu Gia Hien – Survey team
- Mr. Tran Dai Hai – ODA project management division – Planning and Finance Department – MOET (Tel: 04-36230748 / 0913317117)

Details of discussion:

1. **ODA project management division** administrates only the ODA funded projects with MOET as counterparts. (MOET does not manage the projects funded directly to colleges and universities by NGOs).
2. **Main donors** are ADB and WB
 - WB mainly provides funding for primary schools and universities
 - ADB provides funding mainly for high schools and some recent funding for universities.
3. **Completed and ongoing projects:**
 - A. **Higher education development project I (completed in 2006) – Donor: WB**
 - Contents of projects*
 - Education development policies.
 - Loan to some universities to improve curriculum.
 - Improvement of equipment and teaching methods.
 - Implementing universities:*
 - Hanoi National Economics University
 - Hanoi Teacher's University
 - Hue University
 - B. **Higher education development project I (to be completed in 2010) – Donor: WB**
 - Contents of projects:*
 - Enhance human resource capacity
 - Improvement of equipments.
 - Implementing universities:* about 10 participating universities.
 - Project Management Unit:*
 - Address: 7th floor Ta Quang Buu Library
 - Contact person: Mr. Nguyen Duc Thuan, Project Director
 - Tel: 36230096 / 0906034372

C. MOET agenda project – Donor: WB

- *Project contents*: Higher education development policies
- *Progress*: Phase 1 finished, Phase 2 ongoing.
- *Implementation*: WB reimburses funding to MOET for management and allocation to universities.

D. Establishment of 04 universities at international standards (implementation of the Government's policy) – Donor: WB and ADB

- WB funding: Funding is provided to establish 2 universities:
 - Vietnam – Germany University (originally planned to be located in Ho Chi Minh city but later on moved to Binh Duong Province): Currently in operation, has been admitting students for the last 2 years.
 - Can Tho University
- ADB funding: first time in providing funding for higher education in the 2 remaining universities:
 - Da Nang University
 - Hanoi Science and Technology University (located in Hoa Lac)

*9 March 2010
Prepared by
Vu Gia Hien*

MINUTES OF MEETING WITH COLLEGE OF TRANSPORT

Time: PM16:45-17:15, 11March 2010

Venue: Hanoi Collage of Transport : Headmasters room

Participants:

Vietnamese side:

- Mr. Do Ngoc Vien- COT Headmaster
- Mr. Vu Ngoc Khiem- Chief of Science- Technology /Foreign Affairs Department
- Mr. Nguyen Hoang Long- Deputy Chief of Training Department
- Ms. Nguyen Thi Thu Hien- COT staff

Japanese side:

Mr. Kinoshita Tomotaka	JICA's consultant, Evaluation/Analysis, Education planning
Mr. Kaneda Koki	JICA's consultant, Road /Bridge Maintenance & Development
Mr. Nishijima Kuniaki	JICA's consultant, Road/ Bridge Maintenance & Development 2

Mr. Kaneda explained the interim study result of JICA team through the Meeting with MOT, Interview with COT Teachers, Interview with some Construction and Design companies, and asked Mr. Vien to clarify the discrepancy of the principal idea of COT, if any.

Purpose: The development of the capacity of the College of Transportation for the Enhancement of the capacity of Motorway construction skill in Vietnam.

Main target of Project: Improvement of capacity of the Lecturers practical construction knowledge and skills.

The means for the solutions:

1. The targeted curriculum items will be 12 items, which the COT prioritized first rank. (Design matters are not included in this prioritized first rank)
2. Training facilities should meet with the above curriculum items.
3. Items Ethics and Technical English shall be considered, too.

Mr. Vien explained that he also emphasize practical training and the necessity of equipment. Subject for the design items will not be first priority. However, the big printer A0 size is essential one for practical training. Another items are same with his idea.

Technical Questionnaires

Notice: This questionnaires are prepared to know the general level of your knowledge.
Your name is not necessary to write, but please write your specialty or divisions.

Your Specialty / Division:

Please put numbers in the score of each key word according to your degree of knowledge or experience as shown bellow:

- 0: Never heard and no knowledge
- 1: Ever heard but cannot explain the meaning
- 2: can explain briefly the meaning
- 4: can explain with confidence
- 6: have a experience of the usage
- 7: can manage, design or execute them
- 8. ditto with confidence
- 10. can teach to others with confidence

Curriculum	Key word	Score
21 Road Construction 12 Road Design 13 Road Foundation Construction 13 Road Pavement Construction Pavement and Foundation	Simple Curve Design,	
	Clothoid Alignment Design	
	AASHTO Pavement Design (Asphalt)	
	AASHTO Pavement Design (Portland Cement)	
	CBR Test	
	Marshal Test	
	Controlling of OMC at Site	
	Compaction sequence of Asphalt pave	
7 Structural mechanics Steel structure 20 Bridge Design 15 Bridge Construction 16 Bridge Inspection and Repair 17 Construction Engineering (Construction and Inspection of bridge)	Extradosed Bridge	
	Kinds of Bridge Shoe	
	Atterberg's Limit	
	Calculation of Circular Slip	
	N-value	
	Consolidation Settlement Calculation	
	Loading Test at Site	
	Soft Soil Treatment Methods	
2 Construction Geology 3 Soil-mechanics 5 Fundamental mechanics 19 Ground and foundation Construction Engineering - Foundation Construction Construction Engineering - Base Construction	Design Rainfall Intensity	
	Water discharge Volume calculation	
8 Hydraulics-Hydrography,	Run-off Coefficient,	
22 Culvert designing and building Design and construction of culvert	Culvert Capacity Calculation	
	Required R-Bar calculation	
4 Geodesy (Topo-Survey)	Total Station	
	Adjusting Methods of Survey Errors	
1 Construction material 6 Material toughness Reinforced Concrete 23 Concrete and steel core structure Thesis of reinforced concrete structure	GPS Topo Survey	
	Light weight embankment	
	Water Cement Ratio	
	Curing methods at Site	
10 Technical drawing 11 Auto CAD	Tendon	
	Allowable Crack width	
	Shop Drawing,	
	As-Built Drawing	
26 Construction Electrical Engineering Electrical Engineering in construction	Required Road Illumination Strength	
	Central Traffic Control System	
29 ITS 30 ETC	Vehicle Information & Communication System	
	Kind of Automatic Road Fee Collection System	
24 Construction Estimation	Productive Element Rate	
	Project Stake Holders	
18 Construction project management 14 Road management & exploitation 9 Labour safety 28 Construction Business Management & exploitation of road Organization and Management of Construction Construction Economics 27 Construction Machines	Project Risk Management	
	Progress Control by CPM	
	Tool Box Meeting	
	English (Hearing, speaking, reading & writing)	

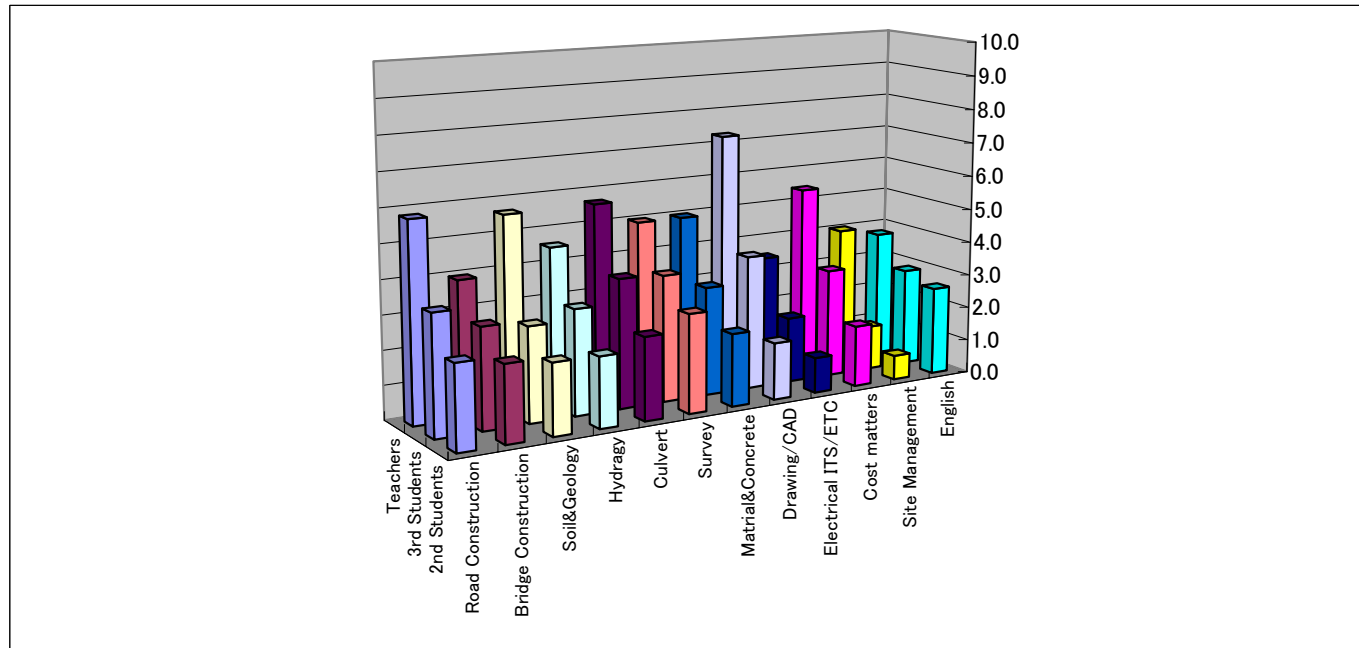
Summary of Technical Questionnaire Answers (for teachers and managing directors)

Key words	Road Eng / Sci-Tech	Road const. Const Faculty	Road const. Const Faculty	M.A., PhD student, Road Const. Const Faculty	Road const. Const Faculty	Road const. Const Faculty	Const Faculty	Const faculty	Constn Faculty	Ave	Dev	mechanics & cons. material	Bridge division lecturer	Brid. Eng., Soil mechanics & cons. material division, Const. faculty	Bridge Eng.	Ave	Dev	Road const & Training dept	Total Ave
Simple curve design	10	10	10	10	10	10	10	10	4	9.3	2.0	8	4	2	2	2.7	1.2	10	7.9
Clothoid alignment design	8	7	10	10	10	10	10	10	4	8.8	2.1	7	4	2	2	2.7	1.2	10	7.4
ASSHTO pavement design (asphalt)	6	4	6	6	8	8	6	6	2	5.8	1.9	6	2	4	2	2.7	1.2	8	5.3
ASSHTO pavement design (portland cement)	4	2	6	6	8	10		6	2	5.5	2.8	6	2	4	2	2.7	1.2	8	5.1
CBR test	8	2	6	8	8	8	4	4	2	5.6	2.6	10	2	4	2	2.7	1.2	6	5.3
Marshal test	7	2	6	6	6	8		2	2	4.9	2.5	10	2	4	2	2.7	1.2	6	4.8
Controlling of OMC at site	6	4	4	8	4	10		2	2	5.0	2.8	10	2	4	2	2.7	1.2	4	4.8
Compaction sequence of asphalt pavement	7	4	6	10	8	10		8	4	7.1	2.4	8	2	2	2	2.0	0.0	6	5.9
Extra dosed bridge	2	2	4	2	2	4		2	7	3.1	1.8	4	10	4	4	6.0	3.5	4	3.9
Kinds of bridge shoe	2	2	2	4	2	4		1	7	3.0	1.9	6	10	4	4	6.0	3.5	4	4.0
Atterberg's Limit	8	2	6	6	2	8	2	1	4	4.3	2.7	10	2	8	4	4.7	3.1	6	4.9
Calculation of Circular Slip	7	2	6	8	6	10		4	10	6.6	2.8	4	2	10	4	5.3	4.2	6	6.1
N-value	6	2	4	6	8	8		2	4	5.0	2.4	8	4	8	2	4.7	3.1	4	5.1
Calculation of consolidation settlement	6	2	4	8	8	10		2	4	5.5	3.0	7	4	8	2	4.7	3.1	6	5.5
Loading test at site	4	2	6	8	6	10		4	7	5.9	2.5	8	2	6	4	4.0	2.0	6	5.6
Soft soil treatment methods	8	4	6	8	10	8		2	10	7.0	2.8	6	4	6	10	6.7	3.1	6	6.8
Design rainfall intensity	8	2	6	6	6	8	6	6	2	5.6	2.2	4	4	2	2	2.7	1.2	4	4.7
Water discharge volume calculation	8	2	6	6	6	8	6	6	2	5.6	2.2	4	4	2	2	2.7	1.2	6	4.9
Run-off coefficient	7	2	6	6	6	7	4	2	2	4.7	2.2	4	4	2	2	2.7	1.2	4	4.1
Culvert capacity calculation	8	4	4	7	8	10	8	8	2	6.6	2.6	4	6	2	2	3.3	2.3	4	5.5
Required R-bar calculation	7	2	4	6	8	8		8	7	6.3	2.2	6	8	4	4	5.3	2.3	4	5.8
Total station	7	8	4	7	6	7	10	6	4	6.6	1.9	8	4	2	2	2.7	1.2	4	5.6
Adjusting methods of survey errors	7	7	6	7	4	7	10	4	4	6.2	2.0	6	2	2	2	2.0	0.0	4	5.1
GPS Topo survey	8	2	4	4	6	6	10	1	2	4.8	3.0	6	2	2	2	2.0	0.0	4	4.2
Light weight embankment	4	2	4	4	8	6		2	2	4.0	2.1	6	2	2	2	2.0	0.0	4	3.7
Water cement ratio	8	4	6	6	6	7		4	7	6.0	1.4	8	8	6	4	6.0	2.0	6	6.2
Curing methods at site	8	2	4	7	8	8		4	7	6.0	2.3	8	8	2	2	4.0	3.5	4	5.5
Tendon	2	2	4	6	4	6		4	7	4.4	1.8	6	10	2	4	5.3	4.2	4	4.7
Allowable crack width	2	2	6	7	4	6		2	7	4.5	2.3	6	10	2	4	5.3	4.2	6	4.9
Shop drawings	10	7	8	10	8	8	6	8	7	8.0	1.3	6	10	4	4	6.0	3.5	8	7.4
As built drawings	8	7	8	10	8	8	6	8	7	7.8	1.1	6	8	4	4	5.3	2.3	8	7.1
Required road illumination strength	4	2	4	6	4	7		4	2	4.1	1.7	4	2	2	2	2.0	0.0	4	3.6
Central Traffic Control system	4	2	2	8	4	7		2	2	3.9	2.4	4	2	2	2	2.0	0.0	2	3.3
Vehicle Information & Communication System	4	2	2	8	6	7		2	2	4.1	2.5	6	2	2	2	2.0	0.0	2	3.6
Kind of Automatic Road Fee collection system	4	2	2	8	4	8		2	2	4.0	2.6	4	2	2	2	2.0	0.0	2	3.4
Productive element rate	8	2	6	8	10	4	10	6	2	6.2	3.1	6	4	2	2	2.7	1.2	6	5.4
Project stake holders	7	2	4	8	4	6	6	4	2	4.8	2.1	6	7	2	2	3.7	2.9	4	4.6
Project risk management	7	4	4	4	4	4		4	2	4.1	1.4	4	2	2	2	2.0	0.0	4	3.6
Progress control by CPM	7	1	2	6	4	8	4	6	2	4.4	2.5	4	4	2	2	2.7	1.2	4	4.0
Tool box meeting	7	2	6	6	2	6		2	2	4.1	2.3	4	2	2	4	2.7	1.2	6	3.9
English (hearing, speaking, reading, writing)	2	4	4	6	5	4		4	2	3.9	1.4	4	4	2	2	2.7	1.2	6	3.8
average	6.2	3.2	5.1	6.9	6.1	7.5	6.9	4.3	4.0	5.4	2.2	6.1	4.4	3.4	2.8	3.5	1.7	5.2	5.1
standard deviation	2.2	2.1	1.9	1.8	2.3	1.8	2.7	2.5	2.5	1.4	0.5	1.9	2.8	2.1	1.5	1.5	1.3	1.9	2.1

Summary of Technical Questionnaire Answers (Year 2 students)

Key words	Road and bridge construction, Year 2																																								Ave	Dev		
	6	1	6	2	4	2	4	2	2	4	2	2	5	2	8	2	6	6	10	5	2	5	6	1	6	4	5	6	8	6	6	6	4	5	4	6	6	1	2	6				4
Simple curve design	6	1	6	2	4	2	4	2	2	4	2	2	5	2	8	2	6	6	10	5	2	5	6	1	6	4	5	6	8	6	6	6	4	5	4	6	6	1	2	6	4	4.4	4.4	
Clothoid alignment design	6	1	5	2	4	1	5	2	2	4	2	2	4	1	8	2	5	6	6	5	2	6	6	1	6	4	5	5	8	6	4	6	4	5	4	6	6	2	2	6	4	4.2	4.1	
ASSHTO pavement design (asphalt)	2	1	1	1	1	1	3	1	1	3	2	0	2	1	2	1	3	2	4	2	2	4	0	5	3	3	2	2	2	3	4	4	3	2	2	2	2	1	2	2	2.1	2.1	2.5 Road	
ASSHTO pavement design (portland cement)	2	1	1	1	1	1	3	1	1	2	2	2	2	1	2	1	2	2	4	2	2	4	0	2	2	3	2	2	2	3	4	4	2	2	3	2	2	2	3	2	2.0	2.0		
CBR test	1	1	2	0	1	0	3	1	1	3	2	0	2	1	2	1	2	2	1	3	1	2	1	0	2	2	2	2	2	2	2	2	3	2	3	0	4	2	0	1.6	1.6			
Marshal test	1	2	2	1	1	1	3	2	2	1	2	2	2	1	2	1	2	2	1	2	1	1	1	0	3	3	2	2	2	1	2	2	3	4	2	2	1	0	2	2	1.7	1.7		
Controlling of OMC at site	1	0	3	0	1	0	2	1	1	2	2	2	2	0	2	2	2	2	1	3	0	1	1	2	2	3	2	1	2	2	3	2	2	3	2	2	3	0	4	1	2	1.7		1.7
Compaction sequence of asphalt pavement	4	0	3	1	4	1	3	1	1	2	2	2	1	1	2	1	3	2	4	3	2	1	4	1	1	2	2	3	2	2	2	4	2	0	3	2	1	2	2	0	2.0	1.9		
Extra dosed bridge	4	2	2	2	1	2	2	4	1	2	2	1	2	1	2	2	4	2	4	3	2	2	4	4	1	2	1	2	2	2	1	4	4	2	2	2	1	2	4	3	4	2.3	2.3	2.2 Bridge
Kinds of bridge shoe	4	2	2	2	1	1	1	4	2	2	2	2	2	2	2	2	4	4	2	0	1	4	2	1	2	1	1	2	2	1	4	4	2	2	1	1	2	4	2	4	2.1	2.1		
Atterberg's Limit	1	0	3	0	1	1	3	1	1	3	0	1	5	0	1	0	2	2	2	0	2	1	0	2	4	2	2	2	2	2	2	1	0	3	3	0	0	3	0	1.5	1.5			
Calculation of Circular Slip	4	2	3	4	4	2	2	2	2	2	1	4	4	6	1	1	4	4	2	0	5	4	2	1	3	2	2	2	2	4	4	2	2	3	4	2	1	3	2	2.6	2.6	2.1 Soil		
N-value	4	1	2	2	4	1	3	0	2	3	2	2	3	1	2	1	1	4	4	1	2	1	4	4	2	2	2	3	2	2	1	4	4	1	4	2	2	1	4	2	4		2.3	2.3
Calculation of consolidation settlement	4	2	2	2	4	1	3	2	2	1	2	2	1	2	2	1	2	4	4	2	0	3	2	4	2	2	3	2	2	3	4	4	1	1	2	2	1	1	2	2	2.2		2.2	
Loading test at site	1	2	1	1	1	1	3	1	2	2	2	3	1	2	2	2	0	0	1	0	1	2	2	1	2	3	1	2	2	2	2	2	0	1	1	2	4	1	2	1.6	1.6			
Soft soil treatment methods	4	2	2	1	4	1	2	4	2	2	1	2	1	2	2	2	2	4	1	1	2	2	3	1	3	2	2	2	3	2	2	2	4	2	1	1	4	2	4	2.2	2.2			
Design rainfall intensity	4	1	3	2	1	1	2	4	2	2	2	3	0	4	1	3	4	4	1	2	2	4	2	2	1	2	3	2	3	1	4	2	1	1	1	2	0	0	2	4	2.1	2.1	2.1 Hydraulgy	
Water discharge volume calculation	4	1	2	2	1	1	1	4	1	2	2	1	3	0	4	0	2	4	4	1	2	1	4	4	1	1	2	2	2	3	2	4	2	1	2	1	1	0	1	2	2	2.0		1.9
Run-off coefficient	4	2	1	1	1	1	3	2	2	3	2	2	2	4	1	2	4	4	1	2	2	4	4	1	2	2	1	2	3	2	4	2	2	2	2	1	0	1	1	2	2.1	2.1		
Culvert capacity calculation	4	2	1	2	4	0	2	2	1	2	4	2	3	2	4	0	1	4	4	2	2	4	4	4	2	2	2	1	2	4	4	2	0	2	2	1	1	3	4	2.4	2.4			
Required R-bar calculation	4	1	3	2	4	0	3	2	1	3	2	2	2	4	1	1	4	4	1	2	4	4	2	2	1	3	1	2	4	1	4	4	3	2	3	3	1	2	2	4	2.5	2.4	2.4 Culvert	
Total station	6	4	4	2	4	2	3	4	2	4	4	1	5	4	8	2	3	6	10	4	4	4	6	4	2	1	2	4	8	6	3	6	4	2	4	2	2	4	3	4	3.9	3.8		
Adjusting methods of survey errors	6	2	3	2	4	2	3	1	2	3	4	4	2	2	8	1	1	6	10	2	4	3	6	0	3	3	3	2	8	6	2	6	4	1	4	1	3	2	2	1	2	3.3	3.2	2.9 Survey
GPS Topo survey	1	1	2	1	1	1	2	0	1	2	4	2	2	1	2	0	2	0	2	2	2	1	1	1	2	1	2	2	2	2	3	2	2	2	1	1	3	0	0	2	1	1.5	1.5	
Light weight embankment	0	0	1	0	1	1	2	1	2	3	2	1	1	0	0	1	1	0	0	3	2	1	1	1	3	1	3	1	0	1	1	0	0	1	0	1	3	0	0	3	2	1.1	1.1	Material
Water cement ratio	6	2	1	4	4	2	2	4	2	4	4	2	1	4	6	2	1	6	8	1	2	2	6	4	1	1	3	1	8	6	2	4	4	1	4	2	3	2	4	2	4	3.2	3.2	
Curing methods at site	6	0	2	2	1	2	1	1	1	3	2	1	2	1	0	1	1	0	2	1	2	1	1	1	2	3	1	2	6	2	1	2	1	1	1	1	4	3	4	1.8	1.7	2.1 Concrete		
Tendon	6	2	1	2	1	1	1	2	2	2	2	2	1	1	6	2	2	4	2	1	2	1	4	2	1	2	3	2	2	6	2	4	2	1	2	1	1	2	1	2	2	2.1	2.1	
Allowable crack width	6	1	3	2	1	1	3	2	2	3	2	1	2	1	6	1	1	4	2	2	2	4	4	2	3	2	1	2	6	1	4	2	3	1	2	2	2	2	2	4	2.4	2.3		
Shop drawings	4	4	3	1	1	1	2	1	2	3	2	2	2	2	1	1	4	2	2	2	2	4	1	2	2	1	2	2	1	2	2	1	2	1	2	1	2	1	4	1	2	2.0	1.9	
As built drawings	1	4	2	1	0	1	3	1	1	1	0	1	2	0	2	1	2	0	0	2	1	2	1	1	3	3	2	2	2	1	3	1	0	2	1	1	1	0	2	1	1	1.4	1.4	1.7 Dwg/CAD
Required road illumination strength	1	1	1	0	0	0	1	1	2	1	2	2	1	1	1	0	2	0	0	1	0	2	1	0	2	2	1	1	1	1	2	0	0	1	0	2	1	0	0	3	2	1.0	1.0	
Central Traffic Control system	1	0	1	0	0	0	1	1	2	0	0	1	0	1	1	3	0	0	1	0	2	1	1	1	2	3	1	1	1	2	0	0	1	2	3	2	0	0	2	0	1.0	1.0		
Vehicle Information & Communication System	1	1	2	0	0	0	1	0	1	2	4	0	2	1	1	1	2	0	0	1	1	1	1	2	1	2	2	2	1	1	1	0	0	2	2	2	1	0	1	3	0	1.1	1.1	1.0 Elect/ITS
Kind of Automatic Road Fee collection system	1	1	1	0	1	1	1	0	1	2	0	4	1	1	1	1	2	0	0	2	1	1	1	4	2	1	3	1	1	1	1	0	1	2	1	1	1	0	1	0	1.1	1.1		
Productive element rate	4	0	3	0	4	1	3	0	1	0	2	2	1	2	0	2	6	2	2	0	2	4	1	7	1	1	1	1	4	2	4	2	1	1	1	1	1	0	2	0	1.8	1.7	1.8 Cost	
Project stake holders	1	1	1	0	1	1	0	1	1	0	0	1	1	1	0	0	1	0	0	2	1	1	1	2	0	0	1	0	1	1	0	0	0	1	1	1	1	1	0	2	0.7	0.7		
Project risk management	1	0	1	0	1	1	1	1	2	0	0	2	1	1	0	0	1	0	0	1	1	1	1	2	0	0	1	0	1	1	0	0	0	1	1	1	1	1	1	2	0.8	0.8		
Progress control by CPM	1	0	1	0	1	1	1	0	1	0	0	1	2	0	0	0	1	0	0	2	1	1	0	1	0	0	3	0	1	0	0	0	0	1	0	1	1	1	0	0	0.6	0.6	0.7 Management	
Tool box meeting	1	0	1	0	1	1	0	4	0	2	2	0	0	1	1	0	0	0	1	1	1	4	0	1	0	1	1	1	1	0	0	1	1	1	1	0	1	1	0	0	0.8	0.8		
English (hearing, speaking, reading, writing)	4	2	3	2	2	3	2	2	1	2	1	4	2	2	2	3	4	4	4	2	3	4	2	2	2	3	4	4	4	2	2	4	2	3	4	1	1	2	2	2.6	2.6	2.6 English		
average	3	1	2	1	2	1	2	2	2	2	2	2	2	1	3	1	2	3	3	2	1	2	3	2	2	2	2	2	3	3	2	2	2	2	2	2	2	2	2	2	2.0	2.0		
standard deviation	2	1	1	1	2	1	1	1	1	1	1	1	1	2	1	1	2	3	1	1	1	2	1	1	1	2	2	1	2	2	1	1	1	1	1	1	1	1	1	1	1.3	1.3		

	Road Construction	Bridge Construction	Soil&Geology	Hydragy	Culvert	Survey	Matrial&Concr ete	Drawing/CAD	Electrical ITS/ETC	Cost matters	Site Management	English
Teachers	5.8	4.0	5.7	4.6	5.7	5.0	5.0	7.3	3.5	5.4	4.0	3.8
3rd Students	3.5	3.0	2.8	3.1	3.8	3.7	3.2	3.9	1.9	3.2	1.3	2.9
2nd Students	2.5	2.2	2.1	2.1	2.4	2.9	2.1	1.7	1.0	1.8	0.7	2.6



List of interview minutes

No	Local Company	Date	page
1	- Cienco 8	3 March 2010	1
2	- Thang Long Construction Corporation	04 March 2010	3
3	- Cienco 1	4 March 2010	5
4	- TEDI	5 March 2010	7
5	- Construction Company 116, CIENCO 1	11 March 2010	9

List of interview minutes

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1	Katahira & Engineers International	2010/03/01 9:20~10:10	11
2	Oriental Consultants Co., LTD.	2010/03/01 13:00~13:40	12
3	Taisei Corporation/ ODA,	2010/03/01 10:20~11:10	13
4	Obayashi Corporation Hanoi Office	2010/03/01 16:00~16:45	14

Interview Sheet 2

For the Construction Firms – CIENCO 8

Notice: This interview is for the preliminary study for strengthening of the capacity of Motorway construction skill in Vietnam through the development of the capacity of the College of Transportation in Hanoi based on the Official request to Japanese Government by the College of Transport under the control of MOT in August 2008.

In case of Japanese firm, Left column shall be filled for the track record in Vietnam as a branch or as a local company. And right column shall be filled as the whole international company.

Date and Time: 2:30pm, 3 March 2010

<u>Name</u>	<u>Title and Division</u>
Mr. Vu Hai Thanh	General Director. CIENCO 8
Mr. Tran Van Hung	Chief, Project management and Technology Department
Mr. Nguyen Van Hoi	Chief, Personnel Department
Mr. Nguyen Ngoc Dam	Chief, Training Department
Mr. Hoang Van Toan	Vice Chief of Office, Secretary to General Director
Mr. Cuong	Interpreter

		Vietnam Firm	
Name of Firm		CIENCO 8	
Capital		N/A	
Annual Productivity		200 million U.S. dollars in 2009	
Annual Revenue		180 million U.S. dollars in 2009	
Road Construction Work Ratio		30% from bridge construction	Current major projects: Hanoi – Thai Nguyen (Expressway 3); Thanh Tri Bridge; Hanoi city Ring road 3; Package 4 of Cau Gie- Ninh Binh Expressway; SaiGon- Trung Luong Expressway, Package 1 Can Tho Bridge
Kinds of work		Bridge, road, expressway	Location of work: Vietnam and Laos PDR
Permanent Employee		16,000 (total)	
Non Permanent Employee			
New Employee number		100s of technicians every year	
Breakdown	<ul style="list-style-type: none"> • University level and above: 22.24%. • College level: 16.75% • Skilled workers: 46.82% • Manual laborers: 14.19% 		
Company training courses	<ul style="list-style-type: none"> • Short term on the job training • Training courses by colleges and universities as ordered by Cienco 8: around 3 classes (about 50-60 staff each). 		
Future Plan of New Recruit	<ul style="list-style-type: none"> • Based on actual situation's requirements (to replace retired staff and to meet growth demands). • Average annual new recruitment is about 400 – 500 persons. 		
Is there any difference of the firm between Vietnam Firm and Foreign one?	<p>On getting project</p> <p>On executing project</p> <p>Staff ability</p>		
Request for the graduate and college, if any.	<ul style="list-style-type: none"> • More focus on practical matters as new graduates tend to take from 6 months to 1.5 years to be able to carry the work on site. 		

What is expected for the graduates in College?	<ul style="list-style-type: none"> • Graduates have mastered the knowledge that was taught in college. • Need graduates to fully understand the practical knowledge in order to quickly adapt to the actual situation on site. 	
What kinds of practices in College are expected?	<ul style="list-style-type: none"> • More focus on practical matters, especially new, modern equipments, machinery and technology. 	
What is expected for the teachers in College?	<ul style="list-style-type: none"> • Teachers are very good at theory but some lack practice experience. • They need to be experienced and exposed to new technologies on site. • CIENCO 8 is willing to receive teachers and students for practice on site and projects. 	

Rating on necessity of subjects (0-5):

1. Foundation structure: 2.
2. Pavement design: 2
3. Drainage facilities: 2
4. Road safety facilities: 2
5. Progress control: 4
6. Regulations: 4
7. Labor Safety and Environment: 5
8. Ethics of Engineers: 5
9. Topo Survey: 4
10. Soil Test: 4
11. General Knowledge on Quality Control: 4
12. English: 2
13. Marxism and Leninism: 0
14. Ho Chi Minh: 5
15. Revolutionary path of Communist Party: 4
16. National Defense: 2
17. ITS: not necessary for CIENCO 8, but in demand for Vietnam
18. ETC: Not necessary for CIENCOs (as Construction corporations target construction only).

Interview Sheet 2

For the Construction Firms – THANG LONG CONSTRUCTION CORPORATION

Notice: This interview is for the preliminary study for strengthening of the capacity of Motorway construction skill in Vietnam through the development of the capacity of the College of Transportation in Hanoi based on the Official request to Japanese Government by the College of Transport under the control of MOT in August 2008.

In case of Japanese firm, Left column shall be filled for the track record in Vietnam as a branch or as a local company. And right column shall be filled as the whole international company.

Date and Time: 8:40 pm, 04 March 2010

<u>Name</u>	<u>Title and Division</u>
Mr. Nguyen Cong Tuynh	Deputy General Director
Mr. Do Tai	Chief, Human Resource Department

		Vietnam Firm	
Name of Firm		Thang Long Construction Corporation	
Capital		500 billion VND	
Annual Productivity		3,000 billion VND in 2009	
Annual Revenue		2,800 billion in 2009	
Road Construction Work Ratio		70% - 80% from bridge construction	
Kinds of work		Construction of road and bridge; 01 design and consultant company, 01 material testing company	
Permanent Employee		8,000 (total)	
Non Permanent Employee			
New Employee number		100s of technicians every year	
Breakdown	<ul style="list-style-type: none"> At corporation head office level: 5% college graduates. At subsidiary companies offices: 15% technical, 60% admin and finance. At Construction team level: Mainly college graduates (percentage varies due to the construction plan). 	<ul style="list-style-type: none"> Current situation: Lack of technicians for Thang Long Corporation as well as in other companies. There is a huge amount of construction work to be carried out. 	
Company training courses		<ul style="list-style-type: none"> There is one vocational school under Thang Long Corporation but not many students enroll. 	
		<ul style="list-style-type: none"> Thang Long Corporation do not have functions in college and university education. Staff will attend courses as per their own needs. 	
Future Plan of New Recruit		<ul style="list-style-type: none"> Thousands of new employees every year (from university graduate level to manual laborers) to replace retired staff and meet with growth demands. Thang Long Corporation focuses more on bridge construction work thus needs more collage graduates than other construction corporations. 	
Is there any difference of the firm between Vietnam Firm and Foreign one?		<p>On getting project</p> <p>On executing project</p> <p>Staff ability</p>	
Request for the graduate		<ul style="list-style-type: none"> More focus on practical matters as new 	

and college, if any.		
What is expected for the graduates in College?	<ul style="list-style-type: none"> • Graduates have good work ethics. • Graduates can present a good record of scores • Can read and understand drawings to instruct work to workers • Can calculate quantity • Can instruct workers to carry out the works according to drawings • Can prepare as-built documents • Follow project document formats by Consultants and Clients. 	
What kinds of practices in College are expected?	<ul style="list-style-type: none"> • More practice on modern and updated equipments. 	
What is expected for the teachers in College?	<ul style="list-style-type: none"> • Good work ethics. • Good knowledge to transfer to students • Need to have more practice on high technology so graduates can adapt to the work on site. • Need to teach English for specific context as currently English level of graduates do not meet requirements to read drawings or site records. • Thang Long Corporation is willing to receive teachers and students to site, especially to big projects with high technologies. 	

Rating on necessity of subjects (0-5):

1. Bridge design: 5 (for shop drawings)
2. Basic knowledge on concrete: 5
3. Road safety facilities: 5
4. Survey: 5
5. Quality Control: 5
6. Progress: 3
7. Regulations: 5
8. Labor, Safety, Hygiene: 5
9. Ethics: 5.
10. Marxism and Leninism: No comments.

Interview Sheet 2

For the Construction Firms – CIENCO 1

Notice: This interview is for the preliminary study for strengthening of the capacity of Motorway construction skill in Vietnam through the development of the capacity of the College of Transportation in Hanoi based on the Official request to Japanese Government by the College of Transport under the control of MOT in August 2008.

In case of Japanese firm, Left column shall be filled for the track record in Vietnam as a branch or as a local company. And right column shall be filled as the whole international company.

Date and Time: 3:15 pm, 4 March 2010

<u>Name</u>	<u>Title and Division</u>
Mr. Ho Si Hoa	Vice General Director
Mr. Thanh	Chief, Personnel Department
Mr. Ly	Chief, Administration Department

		Vietnam Firm	
Name of Firm		CIENCO 1	
Capital		300 billion VND by State 16,000 billion in assets	
Annual Productivity		5,661 billion VND	
Annual Revenue			
Road Construction Work Ratio		50% bridge; 50% road construction	
Kinds of work			
Permanent Employee		8,600 employees (2009)	
Non Permanent Employee			
New Employee number		<ul style="list-style-type: none"> 1,670 (past year) in which 113 are college graduates and 83 are university graduates. 	
Breakdown		N/A	
Company training courses		<ul style="list-style-type: none"> On the job training (normally 6 months to 1.5 years) 	
Future Plan of New Recruit		<ul style="list-style-type: none"> Approximately 10% to meet growth demands (productivity annual increase at 10%). 	
Is there any difference of the firm between Vietnam Firm and Foreign one?		On getting project On executing project Staff ability	
Request for the graduate and college, if any.		<ul style="list-style-type: none"> Understanding of site construction planning. Project management procedure. Team building and organizing skills. Understanding of construction procedures. Good understanding of drawings, basic knowledge on construction materials and structures. 	
What is expected for the graduates in College?		<ul style="list-style-type: none"> Good understanding of quality control, survey system, site construction planning and management, team 	

<p>What kinds of practices in College are expected?</p>	<ul style="list-style-type: none"> • More focus on practical matters, especially new, modern equipments, machinery and technology. • College graduates need to be prepared to adapt to the future developments of Contractors when management are uniformed to meet high requirements on environment, safety, hygiene, and work procedures. 	
<p>What is expected for the teachers in College?</p>	<ul style="list-style-type: none"> • Willing to receive teachers and students for practice. 	

Comments on Marxism and Leninism, Ho Chi Minh Ideology, Revolutionary path of Communist Party, National Defense: These subjects are quite necessary as in general they are philosophies to be applied in daily activities. There may need to be some restructuring of lectures but in general they are useful for students.

Interview Sheet 2

For the Consultant Firms – TEDI

Notice: This interview is for the preliminary study for strengthening of the capacity of Motorway construction skill in Vietnam through the development of the capacity of the College of Transportation in Hanoi based on the Official request to Japanese Government by the College of Transport under the control of MOT in August 2008.

In case of Japanese firm, Left column shall be filled for the track record in Vietnam as a branch or as a local company. And right column shall be filled as the whole international company.

Date and Time: 9:00 am, 5 March 2010

<u>Name</u>	<u>Title and Division</u>
Mr. Pham Huu Son	General Director
Mr. Bui Doan Toan	Chief, Business Management Department
Mr. Doan Cuong	Project Management Department
Mr. Quan	Deputy Chief, Planning and Tendering Department

		Vietnam Firm	
Name of Firm		TEDI	
Capital			
Annual Productivity			
Annual Revenue			
Road Construction Work Ratio			
Kinds of work		Survey and Design, Supervision, Consultancy	
Permanent Employee		~2,000 employees (2009)	
Non Permanent Employee			
New Employee number		<ul style="list-style-type: none"> 1,670 (past year) in which 113 are college graduates and 83 are university graduates. 	
Breakdown	<ul style="list-style-type: none"> 1,400 are university graduates. Remaining are college and vocational school graduates (Mainly employed in subsidiary companies). 	<ul style="list-style-type: none"> University graduates mostly work in design, supervision, project management. Recruitment gives preference to the graduates from reputable universities such as University of Transport; University of Civil Engineering and University of Mining and Geology. College graduates mainly undertake supporting roles such as cost estimates, surveying works, CAD operators and some supervising. 	
Company training courses	<ul style="list-style-type: none"> N/A 		
Future Plan of New Recruit	<ul style="list-style-type: none"> 		
Is there any difference of the firm between Vietnam Firm and Foreign one?	<p>On getting project</p> <p>On executing project</p> <p>Staff ability</p>		
Request for the graduate and college, if any.	<ul style="list-style-type: none"> Graduates need to have experience on advanced equipment. Need to have more practical knowledge 		

	<ul style="list-style-type: none"> • Need to improve the standards of graduates in order to catch on with the development of the sector. Graduates need to aim for ability to do shop drawings, designs, knowledge on Specs, etc. 	
What is expected for the graduates in College?	<ul style="list-style-type: none"> • Good understanding of quality control, survey system, site construction planning and management. 	
What kinds of practices in College are expected?	<ul style="list-style-type: none"> • College needs to have advanced equipment for teaching as it would be difficult to rely on the construction companies' equipment to practice. • College needs to improve their curriculum to include the construction procedures and project management procedures. • College needs to emphasize the importance of legal regulations on construction matters. 	
What is expected for the teachers in College?	<ul style="list-style-type: none"> • Willing to receive teachers and students for practice but will NOT let students used advanced equipments in order to ensure the quality and accuracy of equipment. 	

Interview Sheet 2

For the Construction Firms – Construction Company 116, CIENCO 1

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Date and Time: 3:15 pm, 4 March 2010

<u>Name</u>	<u>Title and Division</u>
Mr. Nguyen Van Che	Director

	Vietnam Firm	
Name of Firm	Construction and Investment Joint Stock Company 116, CIENCO 1	
Capital		
Annual Productivity		
Annual Revenue		
Road Construction Work Ratio		
Kinds of work		<ul style="list-style-type: none"> • Areas of operation: Vietnam (all 3 regions), Laos, Cambodia. • Company 116 is a subsidiary of CIENCO1
Permanent Employee		
Non Permanent Employee		
New Employee number	<ul style="list-style-type: none"> • Last year's recruitment included 5 graduates from COT. 	
Breakdown	N/A	
Company training courses	<ul style="list-style-type: none"> • On the job training 	
Future Plan of New Recruit	<ul style="list-style-type: none"> • 	
Is there any difference of the firm between Vietnam Firm and Foreign one?	On getting project On executing project Staff ability	
Request for the graduate and college, if any.	<ul style="list-style-type: none"> • Generally graduates can perform the work on site • Graduates need to have had practice on more up-to-date and modern equipment. • Graduates should have had practice on a wide variety of testing equipment. 	
What is expected for the graduates in College?	<ul style="list-style-type: none"> • 	
What kinds of practices in College are expected?	<ul style="list-style-type: none"> • Need to provide more knowledge on construction site planning, as-built documents. • Need to provide students with skills for 	<u>Some examples of new technologies that graduates are not familiar with:</u> <ul style="list-style-type: none"> • Soft soil treatment methods using sand pile, wicked drain or geo-textile

	<p>using software for design, as-built drawings and quantity, etc.</p> <ul style="list-style-type: none"> • Need to provide knowledge on new techniques and technologies that are currently applied on site for construction, quality inspection. • College should have more equipment and facilities for teaching purpose as well as for researching purpose to be able to prepare for developments in the sector 	<ul style="list-style-type: none"> • NovaChip technology to improve the skidding resistance. • Sonic testing to detect cracks in concrete and to check density. • Implants or Mortar pumping for slope protection.
<p>What is expected for the teachers in College?</p>	<ul style="list-style-type: none"> • Teachers should have enough knowledge on technologies to transfer to students. 	

For the Construction Firms

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Date and Time: 2010/03/01 9:20~10:10

Name	Toshio TAKEBAYASHI/ Hidetomo AKUTSU/ Le Ngoc HIEU
What division	Chief Representative Hanoi Office
Year and Title	14 Years
Brief history or CV	

		Vietnam Firm					Japanese Firm				
Name of Firm							Katahira & Engineers International				
Capital		Million VND in 20__									
Annual Sales Amount		Million VND in 20__					USD2 Million / Year				
Road Construction Work Ratio		% in 20__					100% Road Construction Work				
Kinds of work		Including Design, Bridge, Tunnel					FS/BB/DD/SV and survey				
Permanent Employee		Number in 20__									
Non Permanent Employee		Number in 20__					Around 80				
New Employee number		Number in 20__									
Breakdown		Doctor	Master	College	others		Master	Bachelor	College	others	
	Civil Eng					Civil Eng	40	10			
	Architect					Architect	-	-			
	Clerk					Clerk	15	15			
	Others					Others					
Company training course							OJT				
Name & Duration											
Name & Duration											
Name & Duration											
Future Plan of New Recruit							Depend on Project obtainment				
Is there any difference of the firm between Vietnam Firm and Foreign one?		On getting project On executing project Staff ability					ODA only JICA, ADB, WB				
Request for the graduate and college, if any.		As a Consultant require not only construction technology but also such as Transportation Economy									
What is expected for the graduates in College?		The collage equipment or facilities are poor than University.									
What kinds of practices in College are expected?		Almost all standards for road design and construction are becoming based on AASHOT, so English ability are very requested.									
What is expected for the teachers in College?											
Any opinion on Project in Vietnam		Construction schedule should be well consider such as actual whether condition and appropriate float. Both contracts party should be equal rights.									

AASHTO; American Association of State Highway and Transportation Officials

For the Construction Firms

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Date and Time: 2010/03/01 13:00~13:40

Name	Yoshiyuki MIYAZAKI / Nguyen Hoang Long
What division	Hanoi Representative Office
Year and Title	General Manager
Brief history or CV	Origin is Civil Engineer

		Vietnam Firm					Japanese Firm				
Name of Firm							Oriental Consultants Co., LTD.				
Capital		Million VND in 20__					Hanoi Representative Office				
Annual Sales Amount		Million VND in 20__					Average around USD1.0~3.0Million				
Road Construction Work Ratio		% in 20__					70%				
Kinds of work		Including Design, Bridge, Tunnel, Road					Design, Supervise				
Permanent Employee		Number in 20__					Hanoi Office 4,				
Non Permanent Employee		Number in 20__					Project Site : 20 x 4(Site)=80				
New Employee number		Number in 20__									
Breakdown		Doctor	Master	College	others		Master	Bachelor	College	others	
	Civil Eng					Civil Eng	3	40	15*	2	
	Architect					Architect		-			
	Clerk					Clerk		2	18		
	Others					Others					
* CAD Operator and Surveyor											
Company training course							On the Job training only				
Name & Duration											
Name & Duration											
Name & Duration											
Future Plan of New Recruit							Project Base, no plan				
Is there any difference of the firm between Vietnam Firm and Foreign one?		On getting project On executing project Staff ability					ODA projects only, JICA, ADB and WB				
Request for the graduate and college, if any.											
What is expected for the graduates in College?		As a Consultant, the graduate of COT level's requirement is very little. The graduates are expected to work as Surveyor and/or CAD Operator.									
What kinds of practices in College are expected?		Sufficient level of Inspection. Actual site training is expected.									
What is expected for the teachers in College?		Teacher should have know the construction site, more. Certain level of English.									
Any opinion on Vietnam Project		Specification with reasonable description. Keep the Contract with an equal partner									

For the Construction Firms

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Date and Time: 2010/03/01 10:20~11:10

Name	Taiji YANAI / Ikuo MATSUDA
What division	Project Director of Hanoi Office
Year and Title	13 years stay in Vietnam
Brief history or CV	Civil Engineer

		Vietnam Firm					Japanese Firm				
Name of Firm		Vinata (71% Taisei + 29% Vinacon)					Taisei Corporation/ ODA,				
Capital		USD3Million									
Annual Sales Amount		Architect only USD30Million									
Road Construction Work Ratio		% in 20__					USD50Million, /average year More than 80% are Road				
Kinds of work		Including Design, Bridge, Tunnel					Bridge, Road Construction				
Permanent Employee		300 Number in 20__									
Non Permanent Employee		Number in 20__					Project Base				
New Employee number		Number in 20__									
Breakdown		Master	Bachelor	College	others		Master	Bachelor	College	others	
	Civil Eng					Civil Eng					
	Architect		200	25		Architect					
	Clerk		10	20	10	Clerk					
	Others					Others					
Company training course		Training at head office around 3 months 2~3person/ year. (but it was before Japanese recession)									
Name & Duration		Accountant Training: 4hr/day x 2times/ Month									
Name & Duration											
Future Plan of New Recruit							Depend on Project obtainment				
Is there any difference of the firm between Vietnam Firm and Foreign one?		On getting project: Japanese Company On executing project: 5 Staff ability: compare to their salary (JPY50~60 thousands / month) could not claim more; reasonable.					From the tax point of view, Local firm is merit to the client.				
Request for the graduate and college, if any.		Lack of good teacher.									
What is expected for the graduates in College?		Construction is a experience Engineering, so Practice at real site is essential. Since Construction work is done by team work, the basic attitude for business style is also required.									
What kinds of practices in College are expected?		Basic knowledge of reading drawing.									
What is expected for the teachers in College?		More about actual knowledge of construction site.									
Any opinion on Project in Vietnam		Design well considered of actual construction procedure. Reasonable cost estimate. Design documents, which easy to understand.									

For the Construction Firms

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Date and Time: 2010/03/01 16:00~16:45

Name	Toshio OKUMURA
What division	General Manager Obayashi Corporation Hanoi Office
Year and Title	14 Years
Brief history or CV	

	Vietnam Firm					Japanese Firm				
Name of Firm						Obayashi Corporation Hanoi Office				
Capital	USD10 Million									
Annual Sales Amount	USD5 ~10 Million					USD30~50 Million / Year				
Road Construction Work Ratio	% in 20__					100% Road Construction Work including Immerse tunnel				
Kinds of work	Including Design, Bridge, Tunnel					Construction				
Permanent Employee	50 Number in 20__					20				
Non Permanent Employee	Number in 20__					200~300				
New Employee number	Number in 20__									
Breakdown		Doctor	Master	College	others		Master	Bachelor	College	others
	Civil Eng					Civil Eng		65%	15%	
	Architect					Architect		-	-	
	Clerk					Clerk		15%	5%	
	Others					Others				
Company training course	For Architect: Training in Japan: 2person/year. 6 months					OJT				
Name & Duration										
Name & Duration										
Name & Duration										
Future Plan of New Recruit						Depend on Project obtainment				
Is there any difference of the firm between Vietnam Firm and Foreign one?	On getting project: Japanese Company On executing project Staff ability					ODA only funded by JICA, ADB and WB.				
Request for the graduate and college, if any.	They don't know how to utilize their knowledge. Because of all projects are funded by International Organization, English ability is strongly requested.									
What is expected for the graduates in College?	Necessity of Basic business attitude: For example, "Ho-renn-so: Report, Communication and Advise" 'Cause construction are done by team work									
What kinds of practices in College are expected?										
What is expected for the teachers in College?										

In Vietnam distinguish between University and Collage graduate is very big.

QUESTIONNAIRE

On current job situation of graduates (Faculty of Road and Bridge Construction Engineering)

A. PERSONAL INFORMATION

1. Full name: _____ Age: _____ Phone: _____
 2. Address: _____ E-mail: _____
 3. Class: _____ Course: _____ Training form (*formal, in-service*): _____
 4. Organization: _____ Position: _____

B. SURVEY INFORMATION (Please check the box for your answer)

1. What field of job are you working with in the following?

- a. Road and bridge building
 b. Other fields (Please specify your field of job:)
 - If your answer is b, what is your reason for choosing that job?

- If you are working in the field of road and bridge building, your company is:

- | | |
|---|--|
| a. a Vietnamese company <input type="checkbox"/> | b. a foreign company <input type="checkbox"/> |
| c. a Government organization at central level <input type="checkbox"/> | d. a Government organization at local level <input type="checkbox"/> |
| e. an Educational Institution (University, college, ...) <input type="checkbox"/> | f. a Research institution <input type="checkbox"/> |
| g. Unemployed <input type="checkbox"/> | h. Other organizations <input type="checkbox"/> |

- If you are working in the field of road and bridge building, what is the function(s) of your company?

- | | |
|---|---|
| a. Design <input type="checkbox"/> | b. Construction <input type="checkbox"/> |
| c. Supervise <input type="checkbox"/> | d. Quality control and assurance <input type="checkbox"/> |
| e. Maintenance <input type="checkbox"/> | f. Others (.....) <input type="checkbox"/> |

2. How long does it take you to get a job after graduating?

- <3 months: 3÷6 months: 7÷12 months: >12 months:

3. Your monthly average income (VND):

- <2,5 2,5÷ 4 >4

4. Is the training program in the College of Transport helpful for your current job?

- a. A little helpful b. Some helpful c. Moderately helpful d. Very helpful e. Extremely helpful:

5. Specific evaluation on the helpfulness of training program:

No	Subjects	Evaluation level				
		(1) <i>A little helpful</i>	(2) <i>Some helpful</i>	(3) <i>Moderately helpful</i>	(4) <i>Very helpful</i>	(5) <i>Extremely helpful</i>
I	<i>General professional subjects</i>					
1	Technical drawing					
2	Auto CAD					
3	Fundamental mechanics					
4	Material toughness					
5	Structural mechanics					

No	Subjects	Evaluation level				
		(1) A little helpful	(2) Some helpful	(3) Moderately helpful	(4) Very helpful	(5) Extremely helpful
6	Construction material					
7	Construction Geology					
8	Soil-mechanics					
9	Geodesy					
10	Hydraulics-Hydrography					
II	Professional subjects					
11	Steel structure					
12	Concrete and steel core structure					
13	Thesis of Concrete and steel core structure					
14	Construction Electrical Engineering					
15	Construction Machines					
16	Construction Engineering					
17	Construction Business					
18	Construction project management					
19	Ground and foundation					
20	Bridge Design					
21	Bridge Construction					
22	Bridge Inspection and Repair					
23	Road Design					
24	Sewerage designing and building					
25	Foundation Construction					
26	Pavement Construction					
27	Road management & exploitation					
28	Construction Estimation					

7. In your opinion, what should be improved with the training program, as in the following?

No	Contents	Improvement			Specification of improvement
		Duration	Content	Equipments	
1	Theory				
2	Practice				
3	Experiment				
4	Applied software				
5	English				

** If you know any of your classmate, kindly give us their address in the following table:*

No	Full name	Class	Address	Phone number	Email address
1					
2					
3					

SUMMARISATION ON THE COLLEGE SURVEY

(JICA funded project)

No	Criteria	K44	K47	K48	K49	K50	K51	K52	K53	K54	K55	K56	K57	K58	Total	percentage	
	Total collected answers of the whole course:	3	9	34	9	24	53	157	121	151	258	335	147	20	1,321	%	
1	What field of job are you working																
a	Road and bridge building	3	5	33	9	24	49	144	110	137	224	300	125	19	1,182	89.48%	
b	Other fields	0	4	1	0	0	4	13	11	14	34	35	22	1	139	10.52%	
1.1	If you are working in the field of road and bridge building, your company is:																
a	a Vietnamese company	1	9	30	8	23	50	121	109	130	126	267	132	18	1,024	77.52%	
b	a foreign company	0	0	0	0	1	0	16	2	1	90	40	2	0	152	11.51%	
c	a Government organization at central level	0	0	4	1	0	1	10	7	4	13	8	3	1	52	3.94%	
d	a Government organization at local level	2	0	0	0	0	1	5	2	3	9	9	2	0	33	2.50%	
e	an Educational Institution (University, college, ...)	0	0	0	0	0	0	0	0	1	0	3	1	1	6	0.45%	
f	a Research institution	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0.08%	
g	Unemployed	0	0	0	0	0	0	2	1	4	6	4	6	0	23	1.74%	
h	Other organizations	0	0	0	0	0	1	3	0	8	14	3	1	0	30	2.27%	
1.2	If you are working in the field of road and bridge building, what is the function(s) of your company? (More than 1 option is allowed)																
a	Design	0	1	5	3	8	13	28	17	34	47	82	24	3	265	20.06%	
b	Construction	2	5	24	4	13	27	90	77	66	148	194	86	12	748	56.62%	
c	Supervise	0	3	5	4	7	9	21	20	19	32	31	21	6	178	13.47%	
d	Quality control and assurance	1	0	0	2	3	2	6	8	7	10	11	3	2	55	4.16%	
e	Maintenance	0	0	0	1	2	1	4	9	7	13	4	4	0	45	3.41%	
f	Others	0	0	0	0	0	3	8	5	18	17	13	9	1	74	5.60%	
2	How long does it take you to get a job after graduating																
a	< 3 months	2	5	24	5	17	36	86	61	115	180	238	107	17	893	67.60%	
b	3 ÷ 6 months	1	3	7	3	6	14	57	43	31	51	64	31	2	313	23.69%	
c	7 ÷ 12 months	0	1	2	1	0	2	9	9	3	15	28	6	1	77	5.83%	
d	> 12 months	0	0	1	0	1	1	5	8	2	12	5	3	0	38	2.88%	
3	Monthly average income (million VND)																
a	< 2,5	2	2	7	1	5	7	38	21	21	56	64	44	4	272	20.59%	
b	2,5 ÷ 4	1	5	21	8	17	32	80	79	98	155	238	89	13	836	63.29%	
c	> 4	0	2	6	0	2	14	39	21	32	47	33	14	3	213	16.12%	
4	Is the training program in the College of Transport helpful for your current job?																
4.1	A little helpful	0	0	0	0	0	0	1	0	3	4	2	0	0	10	0.76%	
4.2	Some helpful	1	0	1	0	0	3	3	4	3	12	24	3	1	55	4.16%	
4.3	Moderately helpful	1	5	18	5	13	19	101	64	69	118	168	77	8	666	50.42%	
4.4	Very helpful	1	3	15	4	9	29	50	51	66	116	129	58	9	540	40.88%	
4.5	Extremely helpful	0	1	0	0	2	2	2	2	10	8	12	9	2	50	3.79%	
5	Specific evaluation on the helpfulness of training program:																
5.1	General professional subjects																
5.1.1	Technical drawing	A little helpful	0	0	0	0	0	0	0	0	1	4	8	1	0	14	1.06%
		Some helpful	2	2	6	4	1	8	25	21	11	46	83	19	2	230	17.41%
		Moderately helpful	0	3	9	0	10	11	79	31	46	69	112	42	7	419	31.72%
		Very helpful	1	3	17	4	12	25	49	59	70	109	95	69	8	521	39.44%
		Extremely helpful	0	1	2	1	1	9	4	10	23	30	37	16	3	137	10.37%
5.1.2	Auto CAD	A little helpful	0	0	1	0	0	0	1	0	0	6	5	0	0	13	0.98%
		Some helpful	1	1	1	1	1	2	10	7	3	12	28	9	0	76	5.75%
		Moderately helpful	2	5	18	4	15	22	94	57	79	116	158	85	12	667	50.49%
		Very helpful	0	2	10	3	6	17	43	43	39	88	97	35	3	386	29.22%
		Extremely helpful	0	1	4	1	2	12	9	14	30	36	47	18	5	179	13.55%
	Fundamental	A little helpful	0	0	1	0	0	0	3	1	2	3	4	0	0	14	1.06%
		Some helpful	1	4	24	2	0	2	8	8	6	25	25	8	1	114	8.63%

Field R&B others
89.48% 10.52%

companies Vietnam Foreign Gov Insitute others
77.52% 11.51% 6.43% 0.53% 4.01%

function Design construct Supervise others
20.06% 56.62% 13.47% 13.17%

incom 2.5 4 more
20.59% 63.29% 16.12%

training little help some help helpful very help extreme
0.76% 4.16% 50.42% 40.88% 3.79%

Drawings little help some help helpful very help extreme
1.06% 17.41% 31.72% 39.44% 10.37%

AutoCad little help some help helpful very help extreme
0.98% 5.75% 50.49% 29.22% 13.55%

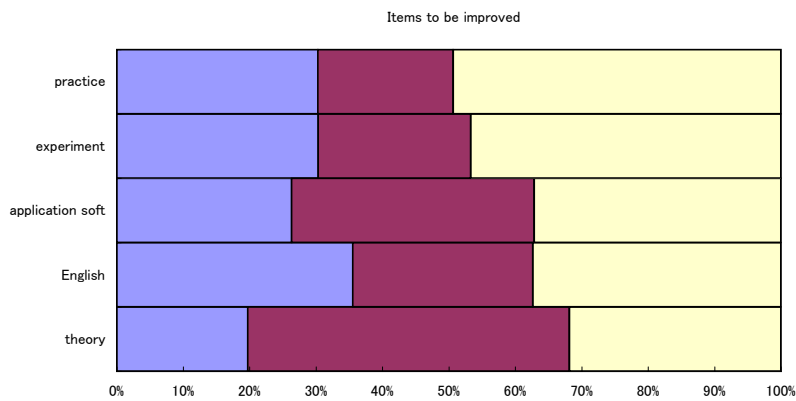
Base Mecha little help some help helpful very help extreme
1.06% 8.63% 59.27% 28.54% 2.50%

No	Criteria	K44	K47	K48	K49	K50	K51	K52	K53	K54	K55	K56	K57	K58	Total	percentage												
Total collected answers of the whole course:		3	9	34	9	24	53	157	121	151	258	335	147	20	1,321	%												
5.1.3	mechanics	Moderately helpful	2	2	9	4	19	26	91	71	95	154	198	101	11	783	59.27%	Material Str	little help	some help	helpful	very help	extreme					
		Very helpful	0	2	0	3	4	20	46	39	47	72	104	33	7	377	28.54%											
		Extremely helpful	0	1	0	0	1	5	9	2	1	4	4	5	1	33	2.50%											
5.1.4	Material toughness	A little helpful	0	0	0	0	0	1	3	1	1	2	5	0	0	13	0.98%	Str Mecha	little help	some help	helpful	very help	extreme					
		Some helpful	1	2	1	1	0	1	10	6	3	29	32	7	1	94	7.12%											
		Moderately helpful	2	5	22	5	19	28	73	73	93	135	200	94	9	758	57.38%											
		Very helpful	0	1	11	3	4	19	60	39	51	76	89	36	9	398	30.13%											
5.1.5	Structural mechanics	Extremely helpful	0	1	0	0	1	4	11	2	3	16	9	10	1	58	4.39%	Mateial	little help	some help	helpful	very help	extreme					
		A little helpful	0	0	0	0	0	0	0	0	1	3	6	0	0	10	0.76%											
		Some helpful	1	0	1	1	0	2	10	7	8	16	20	6	1	73	5.53%											
		Moderately helpful	1	5	10	3	10	19	59	42	59	81	133	85	3	510	38.61%											
		Very helpful	1	3	23	5	13	30	73	63	77	143	166	46	15	658	49.81%											
5.1.6	Construction material	Extremely helpful	0	1	0	0	1	2	15	9	6	15	10	10	1	70	5.30%	Survey	little help	some help	helpful	very help	extreme					
		A little helpful	0	0	0	0	0	0	0	0	1	2	4	0	0	7	0.53%											
		Some helpful	1	0	0	0	0	2	5	3	4	7	15	8	0	45	3.41%											
		Moderately helpful	1	5	12	5	7	18	57	33	47	79	126	50	2	442	33.46%											
		Very helpful	1	3	21	3	15	28	77	72	83	152	167	82	16	720	54.50%											
5.1.7	Construction Geology	Extremely helpful	0	1	1	1	2	5	18	13	16	18	23	7	2	107	8.10%	Soil mecha	little help	some help	helpful	very help	extreme					
		A little helpful	0	0	0	0	0	0	0	0	0	1	5	7	0	1	14							1.06%				
		Some helpful	1	1	1	0	1	2	3	5	5	12	9	6	0	46	3.48%											
		Moderately helpful	1	5	16	5	11	21	82	52	69	91	150	68	6	577	43.68%											
		Very helpful	1	3	16	3	11	27	67	64	70	133	157	69	10	631	47.77%											
5.1.8	Soil-mechanics	Extremely helpful	0	0	1	1	2	5	0	3	13	13	34	1	73	5.53%	Surevey	little help	some help	helpful	very help	extreme						
		A little helpful	0	0	0	0	0	0	0	0	0	1	4	6	0	11							0.83%					
		Some helpful	1	0	0	0	0	1	3	2	5	9	16	4	0	41							3.10%					
		Moderately helpful	0	4	8	3	5	14	57	30	40	70	100	82	4	417							31.57%					
		Very helpful	1	2	25	4	18	35	86	76	95	149	179	35	13	718							54.35%					
5.1.9	Geodesy	Extremely helpful	1	3	1	2	1	3	11	13	11	29	36	20	3	134	10.14%	Hydra	little help	some help	helpful	very help	extreme					
		A little helpful	0	1	0	0	0	0	1	1	1	5	13	6	0	28	2.12%											
		Some helpful	1	4	3	0	3	5	9	17	16	36	71	10	0	175	13.25%											
		Moderately helpful	1	3	16	0	8	17	76	51	65	71	132	55	7	502	38.00%											
		Very helpful	1	1	15	8	12	30	65	50	62	118	112	73	11	558	42.24%											
5.1.10	Hydraulics-Hydrography	Extremely helpful	0	0	0	1	1	6	2	7	28	7	3	2	58	4.39%	Labor Safety	little help	some help	helpful	very help	extreme						
		A little helpful	0	0	0	0	0	0	0	0	2	11	12	1	0	26							1.97%					
		Some helpful	1	5	2	0	1	3	5	13	11	19	54	9	2	125							9.46%					
		Moderately helpful	2	2	29	7	19	35	90	87	96	120	220	71	14	792							59.95%					
		Very helpful	0	2	3	2	3	15	56	18	38	82	45	64	4	332							25.13%					
5.1.11	Labor Safety	Extremely helpful	0	0	0	0	1	0	6	3	4	26	4	2	0	46	3.48%	Steel Str	little help	some help	helpful	very help	extreme					
		A little helpful	0	0	0	0	0	0	0	0	0	3	8	3	1	16	1.21%											
		Some helpful	1	3	2	1	7	5	6	13	16	43	63	17	3	180	13.63%											
		Moderately helpful	1	3	10	3	4	17	85	42	52	53	130	53	5	458	34.67%											
		Very helpful	1	3	20	4	12	22	61	55	57	109	105	60	8	517	39.14%											
5.2.2	Concrete and steel core	Extremely helpful	0	0	2	1	1	9	4	11	26	50	29	14	3	150	11.36%	RC	little help	some help	helpful	very help	extreme					
		A little helpful	0	0	0	1	0	1	0	0	0	3	5	3	0	13	0.98%											
		Some helpful	1	3	0	0	5	4	5	13	8	30	41	13	2	125	9.46%											
		Moderately helpful	1	4	12	2	5	15	77	40	48	81	133	51	4	473	35.81%											
		Very helpful	1	3	1	2	1	3	11	13	11	29	36	20	3	134	10.14%											
5.2	Professional subjects	Extremely helpful	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
		A little helpful	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
		Some helpful	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
		Moderately helpful	0	4	8	3	5	14	57	30	40	70	100	82	4	417	31.57%	Labor Safety	little help	some help	helpful	very help	extreme					
		Very helpful	1	2	25	4	18	35	86	76	95	149	179	35	13	718	54.35%											
Extremely helpful	1	3	1	2	1	3	11	13	11	29	36	20	3	134	10.14%													
A little helpful	0	1	0	0	0	0	1	1	1	5	13	6	0	28	2.12%													
Some helpful	1	4	3	0	3	5	9	17	16	36	71	10	0	175	13.25%													
5.2.1	Steel structure	Moderately helpful	1	3	16	0	8	17	76	51	65	71	132	55	7	502	38.00%	Hydra	little help	some help	helpful	very help	extreme					
		Very helpful	1	1	15	8	12	30	65	50	62	118	112	73	11	558	42.24%											
		Extremely helpful	0	0	0	1	1	6	2	7	28	7	3	2	58	4.39%												
		A little helpful	0	0	0	0	0	0	0	0	2	11	12	1	0	26	1.97%											
		Some helpful	1	5	2	0	1	3	5	13	11	19	54	9	2	125	9.46%											
5.2.2	Concrete and steel core	Moderately helpful	2	2	29	7	19	35	90	87	96	120	220	71	14	792	59.95%	Labor Safety	little help	some help	helpful	very help	extreme					
		Very helpful	0	2	3	2	3	15	56	18	38	82	45	64	4	332	25.13%											
		Extremely helpful	0	0	0	0	1	0	6	3	4	26	4	2	0	46	3.48%											
		A little helpful	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							0	0	0	0	0
		Some helpful	1	3	0	0	5	4	5	13	8	30	41	13	2	125	9.46%											

No	Criteria		K44	K47	K48	K49	K50	K51	K52	K53	K54	K55	K56	K57	K58	Total	percentage						
	Total collected answers of the whole course:		3	9	34	9	24	53	157	121	151	258	335	147	20	1,321	%						
5.2.3	structure	Very helpful	1	1	20	4	13	25	69	57	68	94	123	65	10	550	41.64%	Thesis	little help	some help	helpful	very help	extreme
		Extremely helpful	0	1	2	2	1	8	6	11	27	50	33	15	4	160	12.11%						
	Concrete and steel core structure	A little helpful	0	0	0	0	0	0	0	0	0	4	9	2	1	16	1.21%						
		Some helpful	2	1	1	1	1	3	7	11	10	20	49	9	1	116	8.78%						
		Moderately helpful	1	7	26	4	20	36	85	77	101	107	192	99	10	765	57.91%						
		Very helpful	0	1	7	4	2	11	58	30	38	109	75	28	8	371	28.08%						
Extremely helpful	0	0	0	0	1	3	7	3	2	18	10	9	0	53	4.01%								
5.2.4	Construction Electrical Engineering	A little helpful	0	1	1	0	0	3	9	2	3	8	22	3	1	53	4.01%	Const Electr	4.01%	19.38%	50.34%	22.71%	3.56%
		Some helpful	1	4	6	0	5	10	25	20	26	53	76	26	4	256	19.38%						
		Moderately helpful	2	3	21	7	18	25	70	72	73	119	152	93	10	665	50.34%						
		Very helpful	0	1	6	2	0	12	43	26	48	53	81	23	5	300	22.71%						
		Extremely helpful	0	0	0	0	1	3	10	1	1	25	4	2	0	47	3.56%						
5.2.5	Construction Machines	A little helpful	0	0	0	0	0	0	0	1	0	4	6	0	0	11	0.83%	Conct Mecha	0.83%	4.77%	59.73%	30.89%	3.79%
		Some helpful	1	0	0	0	2	2	6	6	4	12	25	4	1	63	4.77%						
		Moderately helpful	2	5	24	4	19	36	77	73	94	156	198	88	13	789	59.73%						
		Very helpful	0	2	8	4	2	14	67	36	50	76	97	47	5	408	30.89%						
		Extremely helpful	0	2	2	1	1	1	7	5	3	10	9	8	1	50	3.79%						
5.2.6	Construction Engineering	A little helpful	0	0	0	0	0	0	0	0	0	4	3	2	0	9	0.68%	Const Eng	0.68%	4.69%	37.62%	48.90%	8.10%
		Some helpful	1	0	0	0	0	1	10	3	6	10	24	7	0	62	4.69%						
		Moderately helpful	1	6	16	4	8	20	48	41	56	98	130	59	10	497	37.62%						
		Very helpful	1	3	16	5	15	27	93	69	76	104	157	71	9	646	48.90%						
		Extremely helpful	0	0	2	0	1	5	6	8	13	42	21	8	1	107	8.10%						
5.2.7	Construction Business	A little helpful	0	0	0	0	0	0	1	1	2	6	8	0	1	19	1.44%	Const Busines	1.44%	8.10%	55.41%	31.04%	4.01%
		Some helpful	1	0	1	1	2	2	7	8	10	20	33	22	0	107	8.10%						
		Moderately helpful	2	6	22	5	14	35	66	67	97	124	193	90	11	732	55.41%						
		Very helpful	0	3	11	3	7	12	77	41	38	83	96	32	7	410	31.04%						
		Extremely helpful	0	0	0	0	1	4	6	4	4	25	5	3	1	53	4.01%						
5.2.8	Construction project management	A little helpful	0	0	0	0	0	1	1	1	1	6	8	0	0	18	1.36%	project manag	1.36%	5.37%	37.85%	49.89%	5.53%
		Some helpful	1	0	3	0	0	0	1	3	9	20	24	9	1	71	5.37%						
		Moderately helpful	0	5	11	4	10	20	58	41	59	98	128	60	6	500	37.85%						
		Very helpful	2	3	18	5	12	28	87	73	74	119	156	70	12	659	49.89%						
		Extremely helpful	0	1	2	0	2	4	10	3	8	15	19	8	1	73	5.53%						
5.2.9	Ground and foundation	A little helpful	0	0	0	0	0	0	0	0	0	3	3	2	0	8	0.61%	Ground	0.61%	4.09%	56.32%	34.52%	4.47%
		Some helpful	1	0	0	0	0	0	2	3	4	11	22	11	0	54	4.09%						
		Moderately helpful	2	5	19	5	18	29	95	78	99	130	165	87	12	744	56.32%						
		Very helpful	0	4	14	4	5	21	56	35	45	97	127	40	8	456	34.52%						
		Extremely helpful	0	0	1	0	1	3	4	5	3	17	18	7	0	59	4.47%						
5.2.10	Bridge Design	A little helpful	0	0	0	0	0	2	1	1	6	6	2	0	18	1.36%	Brd Design	1.36%	5.45%	53.14%	32.48%	7.57%	
		Some helpful	1	1	0	0	2	2	4	7	3	15	25	11	1	72							5.45%
		Moderately helpful	2	2	21	3	18	28	66	70	93	131	160	98	10	702							53.14%
		Very helpful	0	5	12	5	1	18	76	36	41	86	111	29	9	429							32.48%
		Extremely helpful	0	1	1	1	3	5	9	7	13	20	33	7	0	100							7.57%
5.2.11	Bridge Construction	A little helpful	0	0	0	0	0	2	1	0	5	5	0	0	13	0.98%	Brg Const	0.98%	5.00%	37.02%	50.04%	6.96%	
		Some helpful	1	1	1	0	1	2	5	6	6	15	18	9	1	66							5.00%
		Moderately helpful	0	3	14	4	10	18	51	41	56	92	130	66	4	489							37.02%
		Very helpful	1	4	17	4	12	29	87	66	75	133	157	63	13	661							50.04%
		Extremely helpful	1	1	2	1	1	4	12	7	14	13	25	9	2	92							6.96%
Bridge	A little helpful	0	0	0	0	0	0	2	1	1	5	9	0	0	18	1.36%	Brg Inspect	1.36%	5.98%	50.57%	34.37%	7.72%	
	Some helpful	1	1	2	0	2	2	5	5	3	20	26	11	1	79	5.98%							

No	Criteria		K44	K47	K48	K49	K50	K51	K52	K53	K54	K55	K56	K57	K58	Total	percentage							
	Total collected answers of the whole course:		3	9	34	9	24	53	157	121	151	258	335	147	20	1,321	%							
5.2.12	Inspection and Repair	Moderately helpful	1	5	19	5	15	29	66	64	88	116	164	84	12	668	50.57%	rd design	little help	some help	helpful	very help	extreme	
		Very helpful	0	3	11	2	6	15	72	41	47	97	109	46	5	454	34.37%							
		Extremely helpful	1	0	2	2	1	7	12	10	12	20	27	6	2	102	7.72%							
5.2.13	Road Design	A little helpful	0	0	1	0	0	0	0	0	0	3	4	4	0	12	0.91%	sewage	little help	some help	helpful	very help	extreme	
		Some helpful	1	1	14	0	0	2	4	3	4	10	19	12	1	71	5.37%							
		Moderately helpful	1	5	19	3	8	18	52	41	55	114	153	56	6	531	40.20%							
		Very helpful	1	3	0	5	14	26	88	70	78	120	135	71	12	623	47.16%							
5.2.14	Sewerage designing and building	Extremely helpful	0	0	0	1	2	7	13	7	14	11	24	4	1	84	6.36%	foundation	little help	some help	helpful	very help	extreme	
		A little helpful	0	0	1	0	0	0	0	0	0	2	4	1	0	8	0.61%							
		Some helpful	1	1	12	0	0	2	6	2	2	7	23	8	1	65	4.92%							
		Moderately helpful	0	1	20	3	10	19	58	43	58	109	138	60	5	524	39.67%							
		Very helpful	2	7	1	4	11	23	80	70	80	103	138	69	13	601	45.50%							
5.2.15	Foundation Construction	Extremely helpful	0	0	0	2	3	9	13	6	11	37	32	9	1	123	9.31%	pavement	little help	some help	helpful	very help	extreme	
		A little helpful	0	0	0	0	0	0	0	0	0	3	3	1	0	7	0.53%							
		Some helpful	1	0	1	0	0	1	2	6	4	11	7	4	0	37	2.80%							
		Moderately helpful	0	3	12	2	9	17	53	39	52	101	130	65	5	488	36.94%							
		Very helpful	1	6	19	5	13	29	86	66	83	109	154	67	14	652	49.36%							
5.2.16	Pavement Construction	Extremely helpful	1	0	2	2	2	6	16	10	12	34	41	10	1	137	10.37%	rd manage	little help	some help	helpful	very help	extreme	
		A little helpful	0	0	0	0	0	0	0	0	0	3	3	2	0	8	0.61%							
		Some helpful	1	0	0	1	0	0	2	3	5	8	14	8	0	42	3.18%							
		Moderately helpful	1	3	22	5	15	27	73	76	82	127	142	90	12	675	51.10%							
		Very helpful	1	6	11	1	8	18	68	35	52	86	141	40	7	474	35.88%							
5.2.17	Road management & exploitation	Extremely helpful	0	0	1	2	1	8	14	7	12	34	35	7	1	122	9.24%	cost estimat	little help	some help	helpful	very help	extreme	
		A little helpful	0	1	0	0	0	0	0	0	0	6	9	1	0	17	1.29%							
		Some helpful	1	0	0	0	1	1	2	8	5	13	28	9	1	69	5.22%							
		Moderately helpful	2	6	22	5	19	34	84	77	91	135	186	104	13	778	58.89%							
		Very helpful	0	2	12	4	2	13	58	29	49	80	97	31	6	383	28.99%							
5.2.18	Construction Estimation	Extremely helpful	0	0	0	0	2	5	13	7	6	24	15	2	0	74	5.60%	theory	duration	contents	equipment			
		A little helpful	0	0	0	0	0	0	0	1	0	5	8	1	0	15	1.14%							
		Some helpful	1	1	1	1	2	2	5	8	11	36	49	17	1	135	10.22%							
		Moderately helpful	2	5	25	5	20	36	93	82	102	117	185	107	12	791	59.88%							
		Very helpful	0	2	8	2	1	11	46	21	36	76	77	18	6	304	23.01%							
6	In your opinion, what should be improved with the training program, as in the following?																							
	6.1	Theory	Duration	0	1	7	2	3	18	63	34	35	166	87	39	4	459	34.75%	practice	duration	contents	equipment		
			Content	3	8	32	9	23	44	136	132	119	170	306	131	16	1,129	85.47%						
Equipments			1	4	25	4	15	34	90	87	88	130	153	98	14	743	56.25%							
6.2	Practice	Duration	1	3	19	5	15	27	94	76	91	118	164	91	12	716	54.20%	experiment	duration	contents	equipment			
		Content	2	3	10	1	5	22	34	41	39	170	107	40	9	483	36.56%							
		Equipments	3	8	34	9	24	51	134	119	146	175	309	135	21	1,168	88.42%							
6.3	Experiment	Duration	1	2	21	6	16	41	94	75	100	115	171	92	13	747	56.55%	appli soft	duration	contents	equipment			
		Content	2	5	14	3	4	20	47	50	47	175	134	57	8	566	42.85%							
		Equipments	3	8	32	9	24	50	131	119	141	173	309	130	21	1,150	87.06%							
6.4	Applied software	Duration	1	3	11	2	10	23	59	38	66	185	135	72	7	612	46.33%	english	duration	contents	equipment			
		Content	3	6	30	7	19	42	97	89	95	132	218	97	15	850	64.35%							
		Equipments	3	4	29	6	22	42	94	91	102	133	212	107	19	864	65.40%							
6.5	English	Duration	2	5	24	6	13	39	101	81	97	130	179	101	11	789	59.73%		duration	contents	equipment			
		Content	2	4	15	2	12	21	39	46	58	185	146	62	11	603	45.65%							
		Equipments	2	5	25	7	17	37	95	83	101	133	210	99	15	829	62.76%							

	little help	some help	helpful	very help	extreme	
Const Electric	4.01%	19.38%	50.34%	22.71%	3.56%	26.27%
Labor Safety	1.97%	9.46%	59.95%	25.13%	3.48%	28.61%
cost estimate	1.14%	10.22%	59.88%	23.01%	5.75%	28.77%
Base Mechanism	1.06%	8.63%	59.27%	28.54%	2.50%	31.04%
RC Thesis	1.21%	8.78%	57.91%	28.08%	4.01%	32.10%
Material Structure	0.98%	7.12%	57.38%	30.13%	4.39%	34.52%
Road management	1.29%	5.22%	58.89%	28.99%	5.60%	34.60%
Construction Mechanism	0.83%	4.77%	59.73%	30.89%	3.79%	34.67%
Construction Business	1.44%	8.10%	55.41%	31.04%	4.01%	35.05%
Ground Foundation	0.61%	4.09%	56.32%	34.52%	4.47%	38.99%
Bridge Design	1.36%	5.45%	53.14%	32.48%	7.57%	40.05%
Bridge Inspect	1.36%	5.98%	50.57%	34.37%	7.72%	42.09%
AutoCAD training	0.98%	5.75%	50.49%	29.22%	13.55%	42.77%
pavement	0.76%	4.16%	50.42%	40.88%	3.79%	44.66%
Hydraulic/Hydragy	0.61%	3.18%	51.10%	35.88%	9.24%	45.12%
Drawings	2.12%	13.25%	38.00%	42.24%	4.39%	46.63%
Steel Structure	1.06%	17.41%	31.72%	39.44%	10.37%	49.81%
Structure Survey	1.21%	13.63%	34.67%	39.14%	11.36%	50.49%
Road design	1.06%	3.48%	43.68%	47.77%	4.01%	51.78%
Reinforced Concrete	0.91%	5.37%	40.20%	47.16%	6.36%	53.52%
sewage	0.98%	9.46%	35.81%	41.64%	12.11%	53.75%
Structure Mechanism	0.61%	4.92%	39.67%	45.50%	9.31%	54.81%
Soil mechanism	0.76%	5.53%	38.61%	49.81%	5.30%	55.11%
project management	0.98%	3.18%	40.50%	49.81%	5.53%	55.34%
Const Eng	1.36%	5.37%	37.85%	49.89%	5.53%	55.41%
Bridge Const	0.68%	4.69%	37.62%	48.90%	8.10%	57.00%
foundation construction	0.98%	5.00%	37.02%	50.04%	6.96%	57.00%
Material	0.53%	2.80%	36.94%	49.36%	10.37%	59.73%
Survey	0.53%	3.41%	33.46%	54.50%	8.10%	62.60%
	0.83%	3.10%	31.57%	54.35%	10.14%	64.50%
	duration	contents	equipment			
theory	34.75%	85.47%	56.25%			
English	59.73%	45.65%	62.76%			
application soft	46.33%	64.35%	65.40%			
experiment	56.55%	42.85%	87.06%			
practice	54.20%	36.56%	88.42%			



PCM Workshop

Date/Time: March 9 (Tue) 14:00-17:00

Place: COT Library Building 4th Floor Meeting Room

Moderator : Nguyen Dinh Khoa Email: nguyendinh_khoa@yahoo.com.vn, MP:(84)0986 774 883

Deputy Director, Traffic Safety Center, Institute of Transport Science and Technology

Participants:

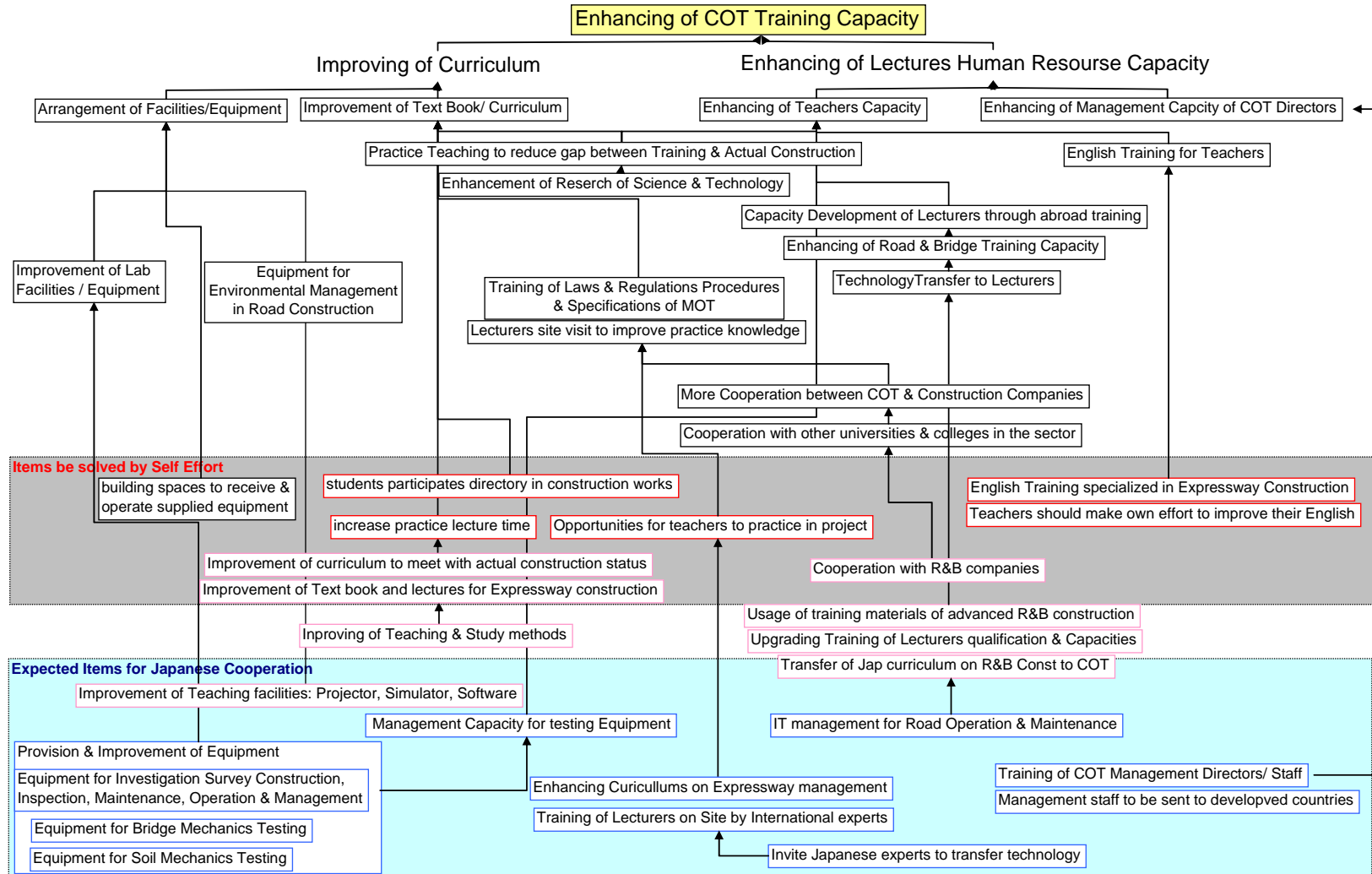
No.	Full name	Position	Organization
1.	Do Ngoc Vien	Rector	COT
2.	Do Van Hoach	Vice Rector	COT
3.	Tran Quang Dung	Vice Rector	COT
4.	Vu Ngoc Khiem	Chief of Division of Sci-Tech and Foreign Affairs	COT
5.	Ngo Hac Hung	Chief of Training Department	COT
6.	Nguyen Van Lam	Deputy Chief of Training Department	COT
7.	Nguyen Hoang Long	Deputy Chief of Training Department	COT
8.	Ngo Quoc Trinh	Lecturer – Secretary of the Youth Union	COT
9.	Tran Trung Hieu	Lecturer/ Sci-Tech and Foreign Affairs Div Officer	COT
10.	Nguyen Thi Thu Hien	Lecturer/ Sci-Tech and Foreign Affairs Div Officer	COT
11.	Le Thanh Hai	Lecturer/ Sci-Tech and Foreign Affairs Div Officer	COT
12.	Nguyen Thi Uy	Dean of Construction Faculty	COT
13.	Nguyen Duc Tuyen	Vice Dean of Construction Faculty	COT
14.	Hoang Dinh Hong	Vice Dean of Construction Faculty	COT
15.	Nguyen Van Doan	Chief of Road Division	COT
16.	Phung Ba Thang	Deputy Chief of Bridge Division	COT
17.	Ngo T Thanh Huong	Chief of Soil Mecha/ Const. material Division	COT
18.	Nguyen Quang Hung	Chief of Topography Division	COT
19.	Tran Thanh Ha	Dep Chief of Soil Mecha/Const material Division	COT
20.	Nguyen Song Dung	Deputy Chief of Topography Division	COT
21.	Pham Van Huynh	Deputy Chief of Road Division	COT
22.	Nguyen Thi Loan	Lecturer	COT
23.	Nguyen Minh Khoa	Lecturer	COT
24.	Le Ngoc Ly	Lecturer	COT
25.	Nguyen Van Dang	Lecturer	COT
26.	Trinh Viet Dung	Lecturer	COT
27.	Pham Thanh Hieu	Lecturer	COT
28.	Vu Thanh Long	Lecturer	COT
29.	Bui Ngoc Kien	Lecturer	COT
30.	Pham Trung Hieu	Lecturer	COT
31.	Vu Hoai Nam	Lecturer	COT
32.	Nguyen Thanh Hung	Lecturer	COT
33.	Nguyen Thuy Anh	Lecturer	COT
34.	Tran Quang Minh	Lecturer	COT
35.	Le Hoang Anh	Lecturer	COT
36.	Doan Thai Ha	Lecturer	COT
37.	Le Hoang Anh	Lecturer(topography)	COT
38.	Ta The Anh	Lecturer	COT
39.	Nguyen Trong Phu	Expert of Science and Technology Department	MOT
40.	Tran Bao Ngoc	Vice Director of Personnel Department	MOT

41. Nguyen Ngoc Hai	Expert of Planning and Investment Department	MOT
42. Nguyen Huu Them	Expert of Infrastructure Structure Department	MOT
43. Nguyen Ngoc Thuyen	Chief Expert of International Cooperation Department	MOT
44. Do Van Hung	Vice General Director	CIENCO 8
45. Nguyen Van Hue	Expert of Project Management Department	CIENCO 8
46. Nguyen Huu Thanh	Expert of Personnel Department	MOT
47. Chu Van Tuan	Expert of Infrastructure Structure Department	MOT

Process

- 1) Opening Speech by Do Ngoc Vien, Headmaster of COT and Mr Katsuta, Team Leader of JICA study team
- 2) Explanation about PCM workshop process on Power Point slide by Mr Khoa
- 3) Collection of Cards from Participants about the Target to get same understanding
- 4) Collection of Cards from Participants about the Measures
- 5) Recomposing of the Cards (Results are shown in Next Page)
- 6) Finalization by Mr Binh from JICA and Mr Kaneda

PCM Workshop opinion is summarized as follows by JICA study team:



Consensus Items among Participants: Textbook, Equipment, Practical Lecture, Coordinate with Contractors, Law, English
 New proposal: Enhancing of Management Capacity of COT Directors/Staff
 Not presented: Examination, Ethics Matter

PCM Workshop on

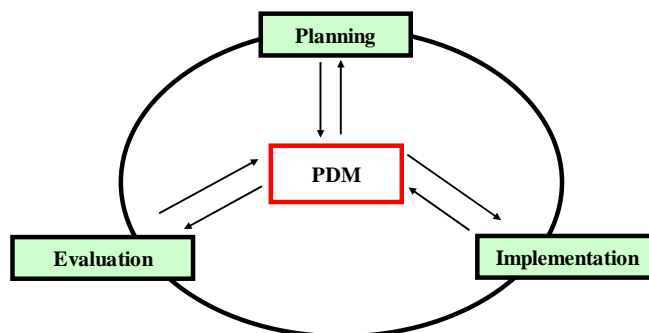
...

March 9, 2010
JICA Preparatory Study Team

0

What is PCM Method?

- A methodology to manage the whole project cycle,
- i.e., planning, implementation, evaluation,
- with fully utilizing PDM (Project Design Matrix)



1/13

What is PCM Workshop?

- A meeting at which representatives of both donor and the recipient countries undertake a series of tasks for the project management based on the PCM Method

2/13

Merit of PCM Workshop?

Participatory workshop leads to:

- Sharing information and recognition
- Consensus-making based on mutual understanding
- Project planning in accordance with the beneficiaries' needs
- Project planning in accordance with the local context

3/13

Procedures of PCM Workshop?

1. Stakeholders Analysis



2. Identification of Problems



3. Frame out of Target Objectives

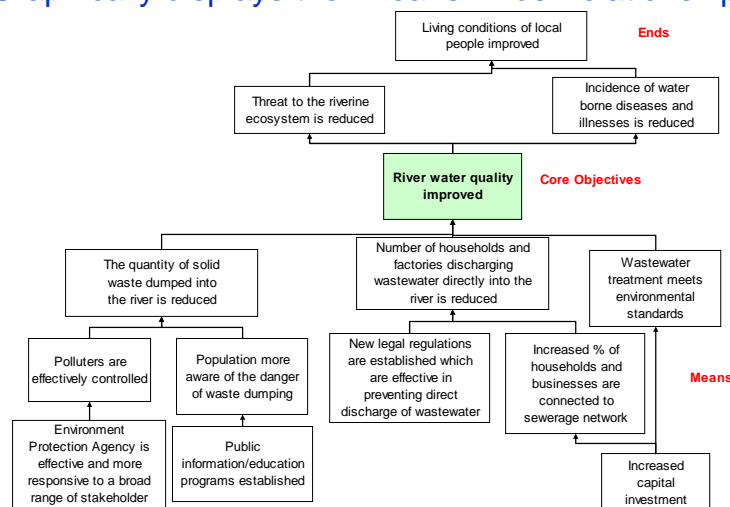


4. Priority Settlement on the Objectives

4/13

What is a "Objectives Tree" ?

Graphically displays the "Means-Ends" relationship



5/13

How to develop Objectives Tree? [1]

Need your idea/opinion for our future development

1. Formulate major objectives from the stated problem situation.
2. Agree upon a **“core”** or focal objective.
3. Determine and write the potential direct means for achieving the core objective on cards.
4. Repeat step 3: Determine and write the means for achieving each of the objectives above (direct means) on cards.

[Continue !](#)

6/13

How to develop Objectives Tree? [2]

Need your idea/opinion for our future development

5. The space above the core objective is for objectives that flow directly from the core objective
6. Repeat step 5: determine the direct objectives for objective statements below.
7. Review the objectives, checking that all means-ends relationships are valid and that there are no means-ends relationships missing

7/13

Rules for Writing Objectives/Means Cards

1. Write cards before discussions regarding changes you think necessary.
2. Write only one idea per card.
3. Make your statement specific.
4. Your statement should be a full sentence.
5. Stick to the facts and avoid abstractions and generalizations.
6. Do not remove a card from the board before a consensus is obtained.
7. Do not ask who wrote a particular card.

8/13

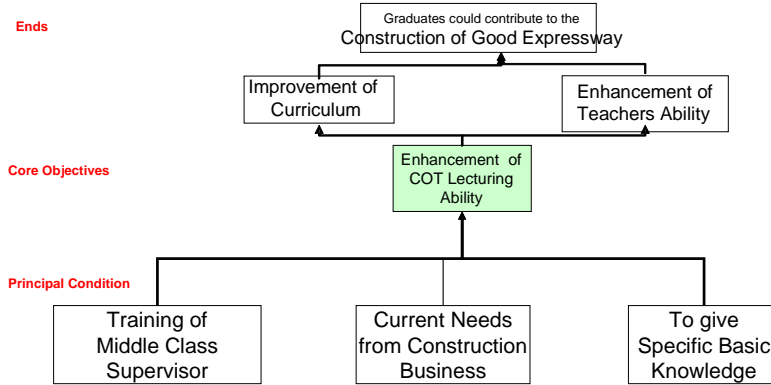
Modification of Objectives Tree

Points for Examination

1. Check whether means-ends relationships are correct or not.
2. If not, write new cards and discuss.
3. If you want to add an issue, write a new card and discuss.
4. Check the revised "means-ends" relationship to see whether it is suitable or not.
5. If something is still wrong, write a modified line and discuss.

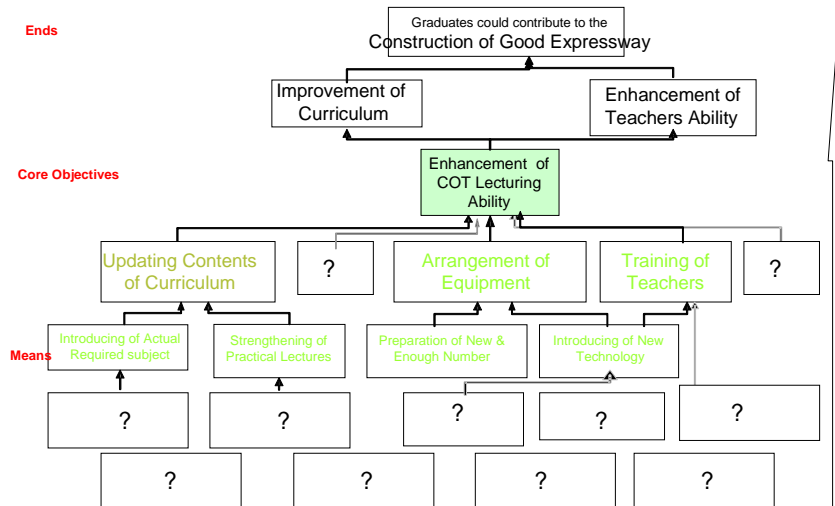
9/13

Basic Concept/Basic Policy as College



10/13

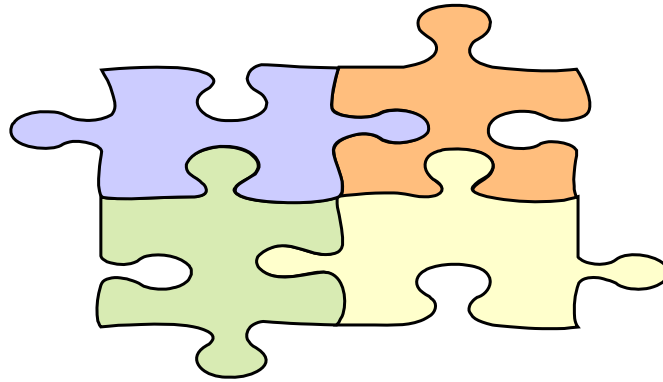
Draft Idea for "Objectives Tree"



11/13

Let's Start Working !

- ✓ Let's work together for making more detail "Objectives Tree" to illustrate more depth means-ends structure for each focal independent issues.



12/13

How to tell us your needs?

Categorize consented means into two groups:

1. Means those are possible to be conducted within C.O.T self efforts
2. Means those require supports from outside agency/organization by cooperation

13/13

THE MINISTRY OF EDUCATION AND TRAINING

**HIGHER EDUCATION
CURRICULUM FRAMEWORK**

SECTOR: TECHNOLOGY

**EDUCATION LEVEL: COLLEGE
CONSTRUCTION ENGINEERING TECHNOLOGY**

Hanoi, 2007

Note: transferred at the Meeting on Mar 16, 2010 at COT from Mr Long
(Opened in Web Site of COT)

THE MINISTRY OF EDUCATION AND TRAINING
THE SOCIALIST REPUBLIC OF VIETNAM **Independence – Freedom – Happiness**

HIGHER EDUCATION CURRICULUM FRAMEWORK

Training level: College

Field of Training: Construction Engineering Technology

Sector code:

(Issued under Decision: 64/2007/QĐ-BGTDT dated 1 November 2007 by the Minister of Education and Training)

1) Training Goal

The training framework aims at training college-level technicians of Construction Engineering Technology with qualified political and moral capacity, physical fitness and appropriate ability and knowledge, to suffice construction sector human resource demand.

The trained students must achieve following requirements:

- Having basic knowledge on construction technology, and professional skills.
- Having ability to apply the educated professional knowledge into the design of technology procedures, construction organization for construction projects;
- Having ability to address technology issues (within their competent scope) required by production demand.

After graduation, the students can work at construction companies, construction consultant firms, construction administration agencies, and training institutions of construction skilled worker.

2) Curriculum framework

2.1 Minimum knowledge volume and training duration as designed

150 blocks, excluding fitness training (3 blocks), national defense education (135 periods).

Training duration: 3 year

2.2 . Knowledge structure in the curriculum (by blocks)

2.2.1	Minimum General Knowledge (excluding fitness training and national defense education)	60
2.2.2	Minimum Professional knowledge Including, at least:	90
	- General professional knowledge	33
	- Specialized professional knowledge	52
	+ Theory	25
	+ Supplementary knowledge	0

	+ Practice, internship	27
	- Graduation	5

3) Compulsory Knowledge Volume

3.1. List of compulsory subject units

3.1.1 General training knowledge: **46 blocks (*)**

1	Philosophy of Marxism and Leninism	4
2	Marxist- Leninist Political Economics	4
3	Science of Socialism	3
4	History of Vietnam Communist Party	3
5	Ho Chi Minh Ideology	3
6	Applying Mathematics	5
7	General Physics 1	4
8	General Chemistry 1	3
9	IT introduction	5
10	Foreign Language	10
11	Environment in Construction	2
12	Fitness Training	3
23	National Defense Education	135 school hours

* Excluding Subject Units 12 and 13

3.1.2 Professional training knowledge **66 blocks**

3.1.2.1. General professional knowledge **29 blocks**

1	Fundamental mechanics	4
2	Material Durability	4
3	Structural mechanics (1)	4
4	Technical Drawing	4
5	Construction materials	3
6	Engineering geology	2
7	Soil mechanics	3
8	Labor Safety	2
9	Geodesy	3

3.1.2.2. Specialized professional subjects **23 blocks**

1	Steel structure	3
2	Reinforced concrete structure	4
3	Construction machinery	3
4	Construction electricity engineering	2

5	Thesis on Reinforced concrete structure	1
6	Construction techniques	3
7	Construction economics	3
8	Construction site arrangement and management	4

3.1.2.3 Practice and Internship

14 blocks

1	Geodesy Practice	1
2	Geology engineering practice	2
3	Practice on construction material testing	1
4	Practice on testing and inspection of construction works	1
5	Skill practice	5
6	Graduation internship	4

3.2. Description of compulsory subject units

1. *Philosophy of Marxism and Leninism (4 blocks)*

The content is issued under Decision 19/2003/QĐ-BGDĐT dated 8 May 2003 by Minister of Education and Training for the promulgation of Subject Framework: Philosophy of Marxism and Leninism, Marxist- Leninist Political Economics (for specialized business administration sector) and Marxist- Leninist Political Economics (for non-specialized business administration sector) for college level.

2. *Marxist- Leninist Political Economics (4 blocks)*

The content is issued under Decision 19/2003/QĐ-BGDĐT dated 8 May 2003 by Minister of Education and Training for the promulgation of Subject Framework: Philosophy of Marxism and Leninism, Marxist- Leninist Political Economics (for specialized business administration sector) and Marxist- Leninist Political Economics (for non-specialized business administration sector) for college level

3. *Science of Socialism (3 blocks)*

The content is issued under Decision 34/2003/QĐ-BGDĐT dated 31 July 2003 by Minister of Education and Training for the promulgation of Subject Framework of Science of Socialism of higher education.

4. *History of Vietnam Communist Party (3 blocks)*

The content is issued under Decision 41/2003/QĐ-BGDĐT dated 27 August 2003 by the Minister of Education and Training for the promulgation of Subject Detailed Framework of History of Vietnam Communist Party of higher education, institutes and universities.

5. *Ho Chi Minh Ideology (3 blocks)*

The content is issued under Decision 35/2003/QĐ-BGDĐT dated 31 July 2003 by the Minister of Education and Training for the promulgation of Subject Framework of Ho Chi Minh Ideology for university and college levels.

6. *Applying Mathematics (5 blocks)*

Introduction on limits of sequence and function, continuity of functions, integral calculus of single-variable and complex-variable functions, linear algebra with focus on the mathematics application into engineering technology.

7. General Physics 1 (4 blocks)

Introduction on movement rules of bodies, conservation laws in movements, materials interaction, the subject unit has 3 parts:

Mechanics: to provide basic knowledge on classical mechanics (Newton mechanics) with major contents on Newton's laws, law of gravitation, conservation laws of material particles, system of material particles and solid bodies.

Thermology: to provide knowledge on thermal motion of particles, and basic laws on thermodynamics.

Electronics: to provide knowledge on electrostatic interaction, magnetostatic interaction, interaction between electric field and variable electromagnetic field.

8. General Chemistry 1 (3 blocks)

To provide knowledge on the composition of electron shell of the atom, the relation between electron shell and the atom's properties, explanation on element geometric configuration, the polarity of element, the association of material elements, preliminary study on physical and chemical property of inorganic agent and their composition.

9. IT introduction (5 blocks)

To provide:

- Preliminary knowledge on IT
- Usage of web and mail services on Internet
- Usage of Windows
- Some basic programming skills with Pascal language to solve some popular problems.

10. Environment in Construction (2 blocks)

Including following contents:

- Environment, environment situation, environment protection, and legal framework on environment protection in Vietnam
- Classification of environmental impacts of construction projects- adverse environmental impacts of some typical types of construction projects.
- Methodology for environmental impact research and evaluation in project cycle stages: Pre-FS, FS, design, construction, maintenance, repair and operation.
- Measures for management on typical sources of environmental impact in construction projects.

11. Basic foreign language (10 blocks)

To provide English basic knowledge and skill to facilitate students' learning at higher level. Intermediate level is required for students who have learnt foreign language for 7 years at high-school levels.

12. Fitness Training (3 blocks)

The content is issued under Decision 3244/1995/QĐ-BGDĐT dated 12 September 1995 by the Minister of Education and Training and Decision 1262/1997/QĐ-BGDĐT dated 12 April 1997 by the Minister of Education and Training.

13. National Defense Education

The content is issued under Decision 12/2000/QĐ-BGDĐT dated 9 May 2000 by Minister of Education and Training for the promulgation of Subject Framework of National Defense Education for high-schools, vocational school, university and college.

14. Fundamental mechanics (4 blocks)

Major contents include: basic concepts on mechanics axiomatic system, theory on forces, the equilibrium problem; basic motions of solid bodies; Newton's laws, general laws on dynamics, D'Alembert principles and principles on admissible kinematics.

15. Material durability

Major contents include: basic concepts on force, stress in plane problems; single stress and complex stress on plane; theory on durability; plane geometrics; problems on planes under distortion and bending; stability of stressed bar.

16. Structural mechanics

4 unit blocks

The subject will include the following contents: geometric structure analysis; internal force analysis for fixed and immobile charged system; concept on space system; determination of displacement in lineal elastic plane framework; concept on hyper-static system and degree of redundancy; force method and calculation method for hyper-static plane framework; displacement method for calculation of plane framework.

17. Geometry – Drafting

4 unit blocks

The main principles for preparation of technical drawings will be provided to students as follows: standards to prepare a technical drawings, fundamental techniques of descriptive geometry; principles for displaying geometric space; transformations; formation of intersection lines of planes; basic elements of technical drawings; points; lines, views and sectional views; installation drawings and detailed drawings based on TCVN and ISO standards and introduction of application of computers in 2-dimensional drawings.

18. Construction material

3 unit blocks

Includes 2 theory unit blocks and 1 practice unit block. General introduction on the mechanical and physical characteristics and technical requirements of common construction materials. Practice part includes 5 experiment exercises to introduce the method for inspection and evaluation of the mechanical and physical characteristics of construction materials.

19. Engineering construction geology

2 unit blocks

Providing general knowledge on construction soil and rock, underground water, dynamic geological phenomena and process and engineering construction geology survey methods.

20. Soil mechanics

4 unit blocks

Including the following contents: Formation of soil, phases of soil formation; physical characteristics of soil; mechanical characteristics and relating properties; stress distribution in soil, deformation issues; ground loading capacity, stability of ground mass and soil pressure on solid bodies.

21. Labor safety

2 unit blocks

Providing students with knowledge on Labor protection.

22. Geodesy

3 unit blocks

Introduction of general geodesy knowledge relating to engineering construction such as point locating, straight line orientation; usage of map, angular measurement, linear measurement, height measurement, mapping survey, topographic section survey; works locating in construction, as-built measurement and drawings, works deflection observation.

23. Steel structure

4 unit blocks

This is the main subject unit of the steel structure module in order to provide the students with the basic knowledge on steel structure including: steel material in construction structures; structuring and calculating methods for welding conjunction types; bolt conjunction, rivet conjunction, design methods for simple structures such as steel girder, stanchion and truss.

- 24. Reinforced concrete structure** **4 unit blocks**
Providing basic knowledge on reinforced concrete structure as well as capacity to design common types of reinforced concrete structures.
- 25. Construction Machinery** **3 unit blocks**
Providing basic knowledge: anthropometry concepts, geometrical characteristics of human bodies, method to establish sizing system, features of sizing systems for adults and children, some sizing system currently in use worldwide. This module helps students in clothes designing to have basis for scientific sizing systems.¹
- 26. Construction Electrical Engineering** **2 unit blocks**
Providing general knowledge in calculation and design of the power supply system for civil and industrial works. In addition students are introduced to general concepts on lightning resistant system, communication, anti-theft, fire prevention, electricity for elevators; central air-con and water pumping, TV antenna electricity.
- 27. Reinforced concrete structure project** **1 unit block**
Utilizing the knowledge learnt in the reinforced concrete structure module as well as the capacity to design common reinforced concrete types.
- 28. Construction techniques** **3 unit blocks**
Providing basic techniques on engineering construction techniques.
- 29. Construction economics** **3 unit blocks**
Providing the most basic knowledge on construction economics and business administration as well as construction economics – technical knowledge once graduated. Economics and business administration researches requires close contact general knowledge on economics and specialized professional technical knowledge in construction engineering.
- 30. Construction site management** **4 unit blocks**
Providing basic knowledge on construction planning and organizing such as preparing construction schedule on horizontal chart, diagonal chart and schedule network. Evaluating schedule and optimizing it. Designing construction site plan, organizing supply of materials, arranging stockpile and storage areas, water and power supply and camp sites for construction.
After the students have studied the subject of engineering construction techniques they will continue with the subject of construction site management. The students will be equipped with the knowledge on construction site planning and organizing.
- 31. Geodesy Practice** **1 unit block**
Including the following contents: Operating theodolite and gradienter machines to measure the main elements: Horizontal measuring angle, vertical measuring angle, length measurement with measuring bars and leveling staff, trigonometry measuring and geometry measuring.
- 32. Construction geology practice** **2 unit blocks**
Practice on site to evaluate the construction geological condition using different construction geological survey methods such as visually, drilling, penetrating, compressing, water absorbent testing.
- 33. Construction material practice** **1 unit block**

¹ As explained by Ms. Uy, this is the original version extracted from MOET's website. They must have made a mistake.

Including 5 experiment exercises to introduce the methods for inspection and assessment of the mechanical and physical characteristics of the construction materials:

Exercise 1: Portland cement

Exercise 2: Aggregate for cements and mortar.

Exercise 3: large crushed rock and gravel aggregates.

Exercise 4: Combination of concrete and high density concrete.

Exercise 5: Combination of mortar and mortar.

34. Construction testing and inspection practice

1 unit block

Contents include testing exercises to introduce the method for inspection and assessment of actual technical parameters on site as follows:

Static Penetration Test at site (to assess the loading capacity of ground),

Compressive load test for reinforced concrete pile, measurement of settlement.

Measurement of deflection of the structures such as beams, truss using strain tensor (electrical resistance, cellar cell)

Concrete denseness and solidness testing by sonic test.

Concrete strength test using non-destructive methods.

35. Skill practice

5 unit blocks

Including earthworks, masonry, scaffolding, reinforcement, concrete, structures.

36. Internship for graduation

4 unit blocks

Internship in working as technical technicians, supervisors, managing construction material production. A part of the graduation thesis should be implemented during the internship. Graduation thesis may include the following contents:

- Reading and demonstrating with drawings – 10%
- Structure calculation and design – 35%
- Technical design and construction technology – 35%
- Quantity calculation, preparation of estimate; preparation of schedule for 1 part of construction– 20%.
-

4) GUIDELINE ON THE USAGE OF THE CURRICULUM FRAMEWORK TO DESIGN SPECIFIC CURRICULUM.

Educational curriculum framework is the stipulations in structure, quantity and contents of minimum knowledge for each training profession relevant to training level. This is a basis to help MOET administer the training quality in all higher education institutions nationwide.

4.1. Higher education curriculum framework at college level for the Construction Engineering profession is designed to facilitate the development of curriculum as the Single Major type. The list of subjects and their volume as mentioned under (3) is only the minimum requirement. Based on the training target and time frame as well as the knowledge volume and structure as stipulated under (1) and (2), colleges shall supplement the necessary contents and possibly restructure into suitable subject blocks to formulate their own specific curriculums that are no less than 150 unit blocks (excluding the Physical Education and Military Training subjects).

4.2. The specialized professional knowledge portion (if any) under the Construction Engineering Technology profession is designed in accordance with the specialized professional fields in the Construction Engineering Technology profession; or with the combination of more than one specialized professional field; or according to the development trend of another profession. The difference in training contents between the specialized professional courses should be within 20% of the general professional knowledge.

4.3. Supplement knowledge portion (if any) may be designed by the colleges with the orientation that the optional subjects are related to training of professions other than Construction Engineering technology and considered to be beneficial for students to enlarge their working capacity after graduation.

Signed for the Minister
Vice Minister
Banh Tien Long

ANNEX
LIST OF OPTIONAL SUBJECT BLOCKS
TECHNICAL TECHNOLOGY PROFESSION, COLLEGE LEVEL

(Issued with Decision No. 64/2007/QĐ-BGDĐT dated 1 November 2007 by the Minister of Education and Training)

No.	Name of Subject Block	Remarks
I.	General Knowledge	
	1. Calculation methods	
	2. Function of a complex variable and Laplace transformation	
	3. Linear programming	
	4. Partial derivative equation	
	5. Statistic probability	
	6. Fundamental physics 2	
	7. Fundamental chemistry 2	
	8. Construction legislation	
	9. Earth fundamentals	
II.	Professional knowledge	
	1. Architectural structure	
	2. Ground and foundation	
	3. Steel structure project	
	4. Brick, rock structure	
	5. Timber structure	
	6. Construction norms	

COLLEGE CURRICULUM

Curriculum Name: **Bridge and Road Construction Technology**

Training level: **College**

Field of Training: **Construction technology**

Training mode: **Regular**

(Issued under Decision: 502/QĐ-CDGTVT dated April 18 2008 by the Headmaster of the College of Transport)

1. Training Goal

The college curriculum specialized on Road and Bridge Construction technology and techniques aims at training the learners with a comprehensive capacity development with qualified political and moral capacity, physical fitness and ability to work as a qualified technician of college level of road and bridge construction technology and technique, responsive to the demand of Motherland development and defense; particularly:

1.1. Knowledge

- Knowledgeable on basic principles of Marxism- Leninism; revolution policies of Vietnam Communist Party; Ho Chi Minh ideology; having physical fitness for the Motherland development and defense.
- Having basic knowledge on applied mathematics, general physics and chemistry to facilitate the learning of professional training knowledge and the learning at higher level.
- Having basic knowledge on mechanics, material durability, structural mechanics, engineering geology, soil mechanics, construction materials, ground and foundation, hydraulics, hydrology, steel structure, reinforced concrete structure, construction machinery, design, construction, management and operation, quality inspection of road and bridge works; IT application into design; construction organization and cost estimation; quality control, supervision, testing and inspection on road and bridge construction quality to be able to basically address issues related to technology- techniques on road and bridge construction, including: simple design methods, construction organization methods, construction supervision, project management, testing and inspection on transport construction works; being knowledgeable on labor safety, environmental impacts of transport construction activities.
- Having IT capacity equivalent to Level B; ability to fluently use professional software for calculation and design such as Autocad; Midas; Nova; Land desktop; Excel; Cost estimation.
- Having ability to employ foreign languages and IT into works and daily activities.
- Fluent usage of calculation and design software such as Midas, Nova, Land desktop, cost estimation and other applications.

1.2. Skills

- Organization for surveys for data collection for road and bridge works design.
- Organization for testing and inspection on road and bridge quality during construction and management, operation stages.
- Organization for construction, direction for new construction, maintenance, repair, improvement for road and bridge works.
- Ability to participate into the design, supervision, and management of not-so-complicated road and bridge construction projects.

- Providing guidance on new technology and techniques for workers in road and bridge construction projects.

1.3. Attitudes

- Awareness of citizen responsibility; having professional ethics and attitudes, having good discipline and teamwork spirit.

- Having scientific working method; having ability to analyze and address issues arising during the actual road and bridge construction works, and to learn lesson and experience to establish reasoning and thinking ability.

1.4. Positions and working ability after graduation

After graduation, college-graduated technicians of road and bridge construction technology and techniques will be able to work in transport construction companies or institutions in such positions as:

- Road and bridge survey and design technicians.
- Road and bridge construction instructors.
- Construction supervisors.
- Consultant for testing and inspection of road and bridge quality.
- Road project formulation staff, management staff.
- Technician for practical teaching on road and bridge construction in colleges and technician training institutions, vocational schools of road and bridge construction.

1.5. Post- graduation learning and capacity improvement

- To continue learning at university level in road and bridge construction discipline.
- To study on the application of new technologies on road and bridge construction into actual production.

2. Training duration : 3 years

3. Course knowledge volume (by blocks):

3.1. Total knowledge volume: 180 blocks, excluding physical education (3 blocks), national defense education (135 periods).

3.2 . Knowledge structure in the curriculum (by blocks)

3.2.1	General subjects (excluding physical education and national defense education)	60
3.2.2	Professional knowledge including:	120
	- General professional subjects	33
	- Specialized professional subjects	77
	+ Theory	48
	+ Supplementary knowledge	0
	+ Practice, internship	29
	- Graduation	10

4. **Enrolment target:** Graduates from high school level or equivalent

5. **Training process, graduation conditions:** Following flexible education regimes in combination between yearly-based education with subject units, under Regulations on Regular Education in University and Colleges (Issued under Decision 25/2006/QĐ-BGDĐT dated June 26 2006 by MOET’s Minister).

6. **Mark scale:** following mark-scale of 10

7. **Contents of curriculum** (Name and volume of subject units)

7.1. General knowledge training: 60 blocks (*)

No.	Subject units	No. of Blocks	Total No. of periods	Allocation of periods			
				Theory	Assignment Practice	Experiment	Test
1	Basic principles of Marxism and Leninism Part 1	4	60	40	16		4
2	Basic principles of Marxism and Leninism Part 2	3	45	30	12		3
3	Ho Chi Minh Ideology	3	45	31	11		3
4	Policy of revolution of the Vietnamese Communist Party	5	75	52	18		5
5	Applying Mathematics 1	5	75	50	20		5
6	Applying Mathematics 2	3	45	30	12		3
7	General Physics 1	4	60	40	14	(3)	3
8	General Physics 2	2	30	20	8		2
9	General Chemistry	4	60	40	13	3	4
10	IT introduction	5	75	40	30		5
11	AutoCAD	3	45	20	22		3
12	Foreign Language (English 1)	4	60	30	26		4
13	Foreign Language (English 2)	4	60	30	26		4
14	Foreign Language (English 3)	2	30	14	14		2
15	Environment in Construction	2	30	28			2
16	Education on energy saving and efficiency	2	30	28			2
17	Legislation education	3	45	42			3
18	Law on Construction	2	30	28			2
19	Physical Education	(3)	90	17	49		24
20	National Defense Training	(9)	135				
Total			1125	610	202	6	83

* Excluding Subject Units 19 and 20

7.2. Professional knowledge training:

7.2.1. General professional subjects:

33 blocks

No.	Subject units	No. of blocks	Total periods	Allocation of periods			
				Theory	Assignment Practice	Experiment	Test
1	Graphics - Drafting	4	60	40	16		4
2	Fundamental mechanics	4	60	40	16		4
3	Material Durability	4	60	40	10	6	4
4	Structural mechanics (1)	4	60	40	16		4
5	Construction materials	3	45	30	12		3
6	Engineering geology	2	30	20	8		2
7	Soil mechanics	3	45	30	12		3
8	Topography	4	60	40	16		4
9	Hydraulics - Hydrology	3	45	30	12		3
10	Labor Safety	2	30	20	8		2
Total			495	337	119	6	33

7.2.2. Specialized professional subjects

48 blocks

No.	Subject units	No. of blocks	Total periods	Allocation of periods			
				Theory	Assignment Practice	Experiment	Test
1	Steel structure	3	45	30	9	3	3
2	Reinforced concrete structure	4	60	40	10	6	4
3	Reinforced concrete structure thesis	1	15		15		
4	Construction electrical engineering	2	30	20	3	5	2
5	Construction machinery	3	45	30	12		3
6	Ground and Foundation	3	45	30	12		3
7	Bridge design	4	60	40	16		4
8	Construction techniques (1)- bridge construction and inspection	5	75	50	14	6	5
9	Motorway road design	4	60	40	16		4
10	Culvert design and construction	2	30	20	8		2
11	Construction techniques (2) - embankment construction	3	45	30	9	3	3
12	Construction techniques (3) - pavement construction	3	45	30	9	3	3
13	Road management and operation	2	30	20	8		2
14	Construction economics	3	45	30	12		3
15	Construction site management	4	60	40	16		4
16	Construction estimation	2	30	20	8		2
Total			720	470	147	21	47

7.2.3. Site Training**29 blocks**

No.	Subject units	No. of blocks	Total	No. of week		
				Theory	Practice	Experiment
1	Geodesy Practice	2	2		2	
2	Geology engineering practice	1	1		1	
3	Practice on construction material testing	1	1			1
4	Practice on soil mechanics	1	1			1
5	Practice on testing and inspection of construction works	1	1			1
6	Practice of basic construction skills	3	3		3	
7	Practice on road survey and design	4	4		4	
8	Skill practice on bridge construction	4	4		4	
9	Skill practice on road construction	4	4		4	
10	Internship for road-bridge construction graduation	4	4		4	
11	Graduation thesis on road-bridge construction	4	4		4	

7.2.4. Graduation Exams**10 blocks**

No.	Subject unit	No. of blocks	No. of week			
			Total	Theory	Practice	Experiment
1	Marxism - Leninism Philosophy	Conditions for graduation consideration	1	1		
2	Soil mechanics	5	1	1		
3	Construction techniques (1), Construction techniques (2), Construction techniques (3)	5	1	1		

8. Training plan (expected)**8.1. Training plan for each subject units**

(see attached excel sheet)

8.2 . Course training plan

(see attached excel sheet)

9. Curriculum implementation guidelines

- The curriculum for the Road and Bridge Construction technologies and techniques is for college level and formulated under the higher education's framework for the construction techniques and technology areas (at college level) as stipulated in the attachment to the Decision 64/2007/QĐ-BGDĐT dated 01 November 2007 by the Minister of Education and Training.
- List of the subject units and their volume as detailed under section (7) is the maximum requirement and compulsory modules. Based on the training goal, time frame, lecture volume and structure as stipulated in sections 1, 4, 7 and 8, the Training Department in coordination with relevant faculties shall prepare the Detailed outline of the subject units (following the College's format) and submit to the Headmaster for approval before implementation of the lectures.
- Based on the training goals and the detailed outline of the subject units, the faculties shall prepare standard teaching materials or lectures in order to standardize the whole College's training contents and provide to students as reference materials during their study and researches.
- The detailed outlines of subject units should specify the main contents to be tested periodically and materials (including details on titles, authors and publishing year) for the reference by the lecturers and students in their researches.
- The detailed outline for professional subjects can be flexibly formulated, i.e. both compulsory parts and optional parts, so that there can be modifications in each training year to meet the actual demands of the sector and to adjust to the changes in procedures, design and construction technologies and business accounting methods.
- The implementation of subject units training and evaluation on training results shall be carried out accordingly to the Regulation on regular Education in College and University (issued under Decision No. 25/2006/QĐ-BGDĐT dated 26 June 2006 by the Minister of Education and Training) and the implementation guideline under the Decision No. 2001/QĐ-CĐGTVT dated 13 December 2006 by the Headmaster of the College of Transportation.
- The course training plan as introduced under section 8.3 is only for guideline purpose only. In every school year, the Training Department and the faculties shall, based on the actual situations and the volume of subject units, customize as appropriate for each faculty and class.
- The curriculum for road and bridge construction techniques and technologies is under the training sector of construction techniques and technologies. Also under this training sector are: steel bridge construction techniques and technologies; Railway construction techniques and technologies; Road construction techniques and technologies; Bridge construction techniques and technologies; Waterways works construction techniques and technologies; and Civil and industrial works construction techniques and technologies. This curriculum will vary mainly in the specialized professional subjects and the practice sessions under the professional subjects. The subject units for General knowledge and general professional knowledge training shall have the same contents and time frame, therefore the students, after completing one of above professional training course, can register for other professional subjects and shall only learn the respective specialized professional subjects and shall be entitled to transfer over their qualified study results of subject units under general knowledge training, general professional knowledge training and part of the specialized professional knowledge in their previous study.

Hanoi, 18 April 2008
Signed for the Headmaster
Vice Headmaster

Ta Quang Chinh

Hanoi, 25 June 2008

DECISION
On the establishment of the Science and Training Committee
College of Transport

THE RECTOR OF THE COLLEGE OF TRANSPORT

Based on the Decision No. 2098/QĐ/TCCB-LD dated 31 October 1996 by the Minister of Transport stipulating the functions and tasks of the College of Transport;

Based on the Decision No.56/2003/QĐ-BGD&ĐT dated 10 December 2003 by the Minister of Education and Training regarding the issuance of the College Regulation;

Based on Decision No. 19/QĐ-BGD&ĐT dated 15 June 2005 by the Minister of Education and Training regarding the issuance of the Regulation on the Science and Technology activities in universities and colleges;

Based on the result of the confidence vote during the meeting on the date of 11 June 2008 at the College of Transport on the establishment of the College's Science and Training Committee and its Chairman;

With reference to the proposal from the Chief of the Personnel and Administration Department and the Chief of the Science and Technology and Foreign Affairs Division;

HEREBY DECIDES:

Article 1. To establish the Science and Training Committee of the College of Transport and its standing panel (as in attached list).

Article 2. The Science and Training Committee shall have the consultative function to the Rector regarding the major issue relating to the training and scientific research of the College.

Article 3. The Directors of Branches, managers of Centers, Chiefs and Functional Departments, Deans of Faculties, Chiefs of divisions, relevant units and individuals as listed in the attached List will be responsible in implementing this Decision.

Recipients:

As mentioned in Article 3.
Filed in Office, Sci-Tech, Personnel and Admin,
Training Department

RECTOR

(Signed and sealed)

DO NGOC VIEN

**LIST OF MEMBERS
OF
SCIENCE AND TRAINING COMMITTEE
COLLEGE OF TRANSPORT**

(Attached to Decision No...../QD-CDGTVT dated 25 June 2008 by the Rector of College of Transport)

No.	Full Name	Organization
	Chairman of the Committee	
1	Do Ngoc Vien, M.S. cum PhD student	Rector – College of Transport
	Secretary in training	
2	M.S. Ngo Hac Hung	Chief of Training Department – COT
	Secretary in Science	
3	Dr. Vu Ngoc Khiem	Chief of Science, Technology and Foreign Affairs, COT
	Committee members	
4.	Eng. Do Van Hoach	Vice rector – COT
5.	M.S. Tran Quang Dung	Vice Rector – COT
6.	Eng. Nguyen Van Khoa	General Director – Vietnam automobile industrial corporation
7.	Dr. Ly Huy Tuan	Director - Transport Strategy and Development Institute
8.	Eng. Vu Hai Thanh	General Director – CIENCO 8
9.	M.S. Tran Van Binh	Trade Union Chairman – COT
10.	M.S. Nguyen Duy Hoa	Director of Thai Nguyen Branch – COT
11.	M.S. Nguyen Van Bang	Deputy Manager – Vinh Yen Training Center, COT
12.	M.S. Dao Van Toan	Manager of Vocational Training Center, COT
13.	B.A. Tran T. Thanh Thuy	Chief of Accounting and Finance Department, COT
14.	M.S. Nguyen Thi Uy	Acting Dean – Construction Faculty
15.	M.S. To Binh	Vice Dean in charge of Mechanical Faculty, COT
16.	M.S. Tran Ha Thanh	IT Faculty – COT
17.	M.S. Hoang Thi Hong Le	Dean – Transport Economics faculty, COT
18.	M.S. Nguyen Thi Thanh	Dean – Basic Science Faculty, COT
19.	Eng. Kieu Van Da	Chief of Politics Philosophy- COT
20.	MS. Dao Van Nguyen	Chief of Basic Techniques Div.- COT
21.	Dr. Nguyen Van Lich	Chief of Mechanics Faculty - COT
22.	MS. Nguyen Quang Anh	Deputy Chief of Mechanics Faculty – COT
23.	Dr. Nguyen Anh Tuan	Vice manager of Training Department- COT
24.	Dr. Nguyen Tuan Hai	Mechanics Faculty- COT
25.	Dr. Nguyen Song Dung	Construction Faculty- COT
26.	Dr. Duong Van Nhung	Transport Economics Faculty- COT
27.	MS. Nguyen Hoang Long	Science- Technology and External Affairs Department
28.	MS. Do Quang Hung	IT Faculty- COT
29.	MS. Le T. Thu Sao	Transport Economics Faculty- COT
30.	MS. Hua Van Quach	Thai Nguyen Branch- COT
31.	MS. Ngo Quoc Trinh	Secretary of Youth Union- COT
32.	MS. Nguyen Duc Tuyen	Deputy Chief of Construction Faculty- COT
33.	MS. Nguyen Van Doan	Construction Faculty- COT

**LIST OF MEMBERS
OF
THE STANDING PANEL
OF
THE SCIENCE AND TRAINING COMMITTEE,
COLLEGE OF TRANSPORT**

(Attached to Decision No...../QD-CDGTVT dated 25 June 2008 by the Rector of COT)

No.	Names	Organisation
A	Panel Chairman	
1	MS. PhD student. Do Ngoc Vien	COT Rector
	Vice Chairman	
2	Eng. Do Van Hoach	COT Vice Rector
3	MS. Tran Quang Dung	COT Vice Rector
	Standing Secretary	
4	M.S. Ngo Hac Hung	Manager of Training Department- COT
5	Dr. Vu Ngoc Khiem	Chief of Science- Technology and External Affairs Department - COT
	Members	
6.	M.S. Nguyen Thi Uy	Acting Chief of Construction Faculty-COT
7.	M.S. To Binh	Vice Chief- in charge of Mechanics Faculty- COT
8.	M.S. Tran Ha Thanh	Chief of IT Faculty- COT
9.	M.S. Hoang Thi Hong Le	Chief of Transport Economics Faculty - COT
10.	M.S. Nguyen Thi Thanh	Chief of Basic Sciences Faculty- COT
11.	Eng. Kieu Van Da	Chief of Politics Philosophy- COT
12.	MS. Dao Van Nguyen	Chief of Basic Techniques Div.- COT

List of Textbook TOC

No	Textbook
1	Construction Materials
2	Geology
3	Soil Mechanics
4	Survey (Geodesy)
5	Material Mechanics (Material durability)
6	Theoretical Mechanics
7	Structural Mechanics
8	Labor safety
9	(Technical Drawings -----no TOC)
10	Auto Cad
11	Hydraulics & Hydrology
12	Road Foundation construction
13	Road Pavement
14	Road operation and management
15	Bridge construction
16	Bridge Inspection
17	Reinforced concrete
18	(Project Management)
19	Ground and Foundation
20	Bridge Design
21	Road design
22	Culvert design and construction
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24	Cost estimation
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EQUIPMENT LIST (Draft translation)
ENHANCING THE TRAINING CAPACITY FOR COLLEGE OF TRANSPORT
(Extracted from teachers's proposals)

Grey: Unaccepted one by Study Team

Blue: Tentatively List in MM Annex 3

Green: Requested again n MM Annex 4

No	Học phần Equipments (Block) (Vietnamese)	Equipments Bold: Existing equipment	Requested No.	Priority by COT	Tentatively Accepted	Comments
I	Trắc địa	(Topo-survey)				
1	Máy toàn đạc điện tử	Total Station	4	1	4	
2	Máy thủy bình điện tử	Leveling instrument	3	1	3	
3	Thiết bị định vị GPS	Global Positioning System	3	1	3	Important
4	Máy đo khoảng cách	Distance Measuring Apparatus	5	2		
5	Phần mềm chuyên dụng	Specialized Software	1	3		what kinds?
II	Thủy lực-Thủy văn	(Hydraulics-Hydrography)				
1	Máy đo lưu tốc dòng chảy	Flow Measuring apparatus	5	1		????
2	Máy đo mực nước hồi âm	Depth measuring apparatus	5	1		????
3	Phòng học chuyên dùng	Specialized class room	1	2		????
4	Thiết bị nghiên cứu dòng chảy trong kênh hở kết nối máy tính		1	3		
III	An toàn lao động	(Labor safety)				
1	Phòng học chuyên dùng cho ATLD	Labor safety specialized class room	1	1		???? ?
2	Bảo hộ cá nhân cho sinh viên	DVD Material Protectiveness Personally For Student	25	1	1 60	DVD Material Japanese helmet / safety jackey? 3+2=5
3	Thiết bị an toàn: làm việc trên cao; thi công đất đá; thi công dưới nước	Safety Equipment	25	1		
	Các thiết bị kiểm tra: nhiệt độ; độ ẩm; hàm lượng bụi; độ ồn; lưu tốc gió; - Máy kiểm tra thiết bị chịu áp lực - Thiết bị đo điện trở tiếp đất; cách điện; thiết bị an toàn điện - Phòng chiếu phim 3D về an toàn điện - Thiết bị an toàn về phòng cháy, chữa	Equipments for testing: moisture, dust conten, noise, wind flow velocity;	1	2		
IV	Môi trường trong xây dựng	(Environment in Construction)				
1	Thiết bị phân tích BOD	BOD Analytic Equipment	2	1	1	
2	Máy đo DO	DO Measuring Apparatus	2	1	1	
3	Máy đo bụi	Dust Measuring Apparatus	2	1	1	
4	Máy đo độ ồn	Noise Measuring Apparatus	2	1	1	
5	Thiết bị lấy mẫu khí lưu lượng nhỏ	Air Sampling Apparatus (small flow)	2	1	1	????
6	Thiết bị lấy mẫu nước	Water Sampling Apparatus	2	1	1	????
7	Máy đo lưu tốc nước	Water Flow Velocity Measuring Apparatus	1	2		
8	Máy lọc chân không	Vacuum Filter Apparatus	2	2		????
9	Bộ thiết bị nghiên cứu Hóa môi trường tổng hợp	Set equipment for environment chemistry study	1	2		
V	Sức bền vật liệu, kết cấu thép	(Material toughness, steel structure)				
1	Máy kéo thép vạn năng 1000KN	Multifunctional Steel Drawing Machine 1000KN	1	1		Existing but very old
2	Tenzomet đôn, Tenzomet điện	Strain gage	10	1	10	???? ?
3	Máy siêu âm kiểm tra mối hàn	Welding Ultrasonic Testing Machine	1	2		????
4	Máy đo biến dạng tĩnh	Dynamic Deformation Measuring Apparatus	1	2		????
5	Máy đo dao động	Vibration Measuring Apparatus	1	2		
6	Thiết bị thí nghiệm dao động va chạm	Impaction type Vibration Testing Equipment	1	3		????
7	Thiết bị đo độ cứng Prinel	Prinel hardness measuring Apparatus	1	3		????
8	Thí nghiệm mỏi	Fatigue Testing Apparatus	1	3		????
VI	Nền và móng	(Foundation and base)				
1	Thiết bị thử sức chịu tải của cọc khi chịu tải nén dọc trục	Axial Press Load Capacity of Pile Testing Apparatus	1	1		DVD Material Japanese
2	Thiết bị thử sức chịu tải của cọc khi chịu tải ngang	Horizontal Loading Capacity of Pile Testing Apparatus	1	1		DVD Material Japanese
3	Thiết bị thử sức chịu tải của cọc khi chịu tải kéo dọc trục	Axial Tension Load Capacity of Pile Testing Apparatus	1	2		
4	Thiết bị thử sức chịu tải của cọc khi chịu tải động	Dynamic Load Capacity of Pile Testing Apparatus	1	2		????
5	Thí nghiệm Statnamic	Statnamic Test	1	2		????
6	Thiết bị PDA, PIT, Osterberg	PDA, PIT, Osterberg Equipment	1	2		P.I.T: ASTM D5882 - 07 - Standard Test Method for Low Strain Impact Integrity Testing of Deep Foundation PDA: ASTM D4945 OSTERBERG: ASTM D1143-1995
7	Thiết bị siêu âm kiểm tra chất lượng cọc	Pile Quality Ultra-sonic Testing Equipment	1	2		PDA: ASTM D4945
8	Thiết bị thi công cọc đóng, cọc khoan		1	2		OSTERBERG: ASTM D1143-1995
		DVD Material				
VII	Địa kỹ thuật công trình	(Construction geology)				
1	Bộ thiết bị khoan địa chất	Geology Drill Apparatus	1	1		
		DVD Material			1	
2	Bộ thí nghiệm xuyên động nhẹ	Dinamic Corn Penetration	1	1		????
3	Bộ mẫu các khoáng vật	Mineral Sample Set	1	1		????
4	Vải địa kỹ thuật	Geotextile	1	1		Geobtile is a material?
5	Thiết bị xác định độ dày vải địa kỹ thuật	Geotextile thickness	1	1		????
6	Thí nghiệm xác định cường độ vải địa kỹ thuật	Geotextile tensile test	1	1		
		Apparatus for Tensile Properties of geotextile				ASTM-D4595
		Apparatus for Deterioration of geotextile from Exposure to Ultraviolet light and water				ASTM-D4355
		Apparatus for Grab Tensile Strength and Ultimate Elongation				ASTM-D4632
		Apparatus for Trapezoid Tearing Strength				ASTM-D4533
		Apparatus for Apparent Opening Size				ASTM-D4751
		Apparatus for Puncture Strength				ASTM-D4833
		Apparatus for Burst Strength				ASTM-D3786

New Request on March 22 as Attached on Appendix 4 of MoM of March 23,2010

		Apparatus for Permeability				ASTM-D4491
7	Sàng ướt xác định hệ số thấm vải địa kỹ thuật	Geotextile Wet Sieving	1	1		????
8	Các phụ kiện kèm theo vải địa kỹ thuật	Geotextile Attachment	1	1		????
9	Các phụ kiện kèm theo vải địa kỹ thuật 35IG	Geotextile Attachment 35IG	1	1		????
10	Bộ thiết bị thí nghiệm cắt cánh hiện trường		1	2		
11	Bộ thiết bị xuyên tĩnh, 10T		1	2		
VIII	Cơ học đất	(Soil-mechanics)				
1	Lò sấy loại lớn	Large Capacity Drying ovens	1	1	1	
2	Lò sấy loại trung bình	Medium Capacity Drying ovens	1	1	1	
3	Máy đầm lăn	Roller Compaction	1	1		0.85x2.0x1.6 Dia 0.475 1.5x0.5x0.95 150litter Max1380kPa
4	Máy nén khí	Air Compression	1	1		
5	Bộ thiết bị nén bằng tay	Manual Compression Apparatus	1	1	1	Compaction rammer with mould
6	Bộ thiết bị nén cơ khí	Motorized Compression Apparatus	1	1		DC-8E series
7	Máy đầm đất tự động	Soil Automatic Compaction	2	1	1	Necessary ?
8	Thiết bị thí nghiệm tải trọng lặp 3 trục	Repeated Load Triaxial Tester	1	1		Model DL5103 100kg capa
9	Máy trộn (đất) để bàn 20l	Bench Mixer (soil) 20l	1	1		
10	Thiết bị xác định giới hạn chảy của đất và kính mở	Boll Mixer (Soil Mortar Cement) 5l				
11	Bê làm mát	Liquid Limit Device And Glass Plate	2	1	2	
12	Thiết bị xác định độ thấm nước cột áp	Cooling Temperature Water Baths	1	1	1	
13	Thiết bị xác định độ thấm nước cột áp	Pressurization Water Permeability	1	1		
14	Bình khử ẩm	Desiccator	1	1	1	小型乾燥器
15	Thiết bị Đất	Soil Equipment	1	1		????
16	Thiết bị đo bức xạ độ ẩm của đất	Moisture And Density Nuclear Gauge	1	1	1	R1式水分密度計
17	Thiết bị thí nghiệm sức chịu tải CBR	California bearing ratio test	1	1	1	Important
18	Máy cắt phẳng kiểu ứng biến	Direct Shearing test	1	1	1	????
19	Máy lắc sàng	Ro-tap Sieve Shakers	2	2		????
20	Bộ phễu rót cát		5	2		????
21	Bộ sàng đất theo ASTM	Set of ASTM Soil Sieves	5	2	2	
22	Tỷ trọng kế	Hydrometers	5	2		????
23	Cân điện tử, độ chính xác 0.01g; 0.1g; 1g	Electronic Balance -0.01g; 0.1g; 1g	3	2	2	Maximum weight?
IX	Vật liệu xây dựng	(Construction material)				
9.1	Bê tông xi măng	(Cement Concrete)				
1	Thiết bị mài mòn Los Angeles	Los Angeles Abrasion Machine	1	1	1	
2	Thiết bị sàng lắc	Ro-tap Sieve Shakers	1	1	1	????
3	Thiết bị sàng lắc cỡ lớn	Large Size Sieve Shakers	1	1	1	????
4	Thiết bị thí nghiệm nén kiểu hai đế bàn >=1000KN	Dual Console Compression Testers >=1000KN	1	1		????
5	Vòng ứng biến 1000KN	Proving Ring 1000KN	1	1	1	
6	Máy khoan lõi đầu học kim cương	Diamond Core Drilling Machine	1	1	1	L=300mm
7	Máy cắt mẫu	Specimen Cutting Machine	1	1	1	
8	Bộ sàng xác định thành phần hạt	Test Sieve Set	2	1	2	with Brade
9	Thiết bị kiểm tra hàm lượng nước	Checker Water(Water contents)	1	1		????
10	Thiết bị kiểm tra hàm lượng khí	Air Meter	3	1		washington type
11	Thiết bị đo độ ẩm	Moisture Determination Balance	1	1		
12	Bộ côn xác định dung trọng cát	Sand Density Cone Set	2	1	2	
13	Búa bật nảy thử cường độ bê tông	Concrete Test Hammer (Shumit Hammer)	2	1		
14	Bộ thùng đo dung trọng 2l 10l 30l	Yield Buckets set 2l 10l 30l	1	1		????
15	Bộ thiết bị tách mẫu 5, 10, 15, 20, 25, 30mm	Sample Splitter Set 5, 10, 15, 20, 25, 30mm	1	1		
16	Nhiệt kế điện tử số DP350	Digital Thermometer DP350	10	1	4	Min & max ?
17	Đề hiệu chuẩn dùng để hiệu chuẩn cho súng bắn bê tông	Calibration Anvil For Testing Hammer	1	1		????
18	Thiết bị Bê tông	Concrete Sampling Mold	1	1	6	????
19	Bê dưỡng hồ bê tông	Curing Water Tank	1	1		should prepare by self effort
20	Máy nén bê tông 2000KN	Concrete Compression 2000KN	1	2		already you have
21	Bộ khuôn mẫu trụ 15x30 cm		1	2		????
22	Bộ giá uốn mẫu bê tông		1	2		????
23	Thiết bị xác định độ thấm nước của bê tông	Water penetrable measuring apparatus	1	2		????
24	Bộ côn xác định độ sụt của vữa bê tông	Slump Cone Set	1	2		
9.2	Vữa- xi măng	(Cement Mortar)				
1	Bàn dẫn vữa	Mortar Flow Table	1	1		D300mm
2	Máy dẫn vữa	Motorized Mortar Flow Table	1	1		ASTMC-230 D254mm
3	Bộ côn xác định độ sụt	Slump Cone Set	1	1		
4	Thiết bị xác định dung trọng cát	Density Sand	10	1		4 litter jar
5	Máy trộn bê tông cường bức 60l	Forced Mixing Concrete Mixer 60l	1	1		Capa 55litter 74rpm
6	Máy trộn vữa	Mortar Mixer	1	1		Model DC-98 D600mm
7	Thiết bị xác định sức chịu tải loại cầm tay	Portable Bearing Tester	1	1		EL-29-3846 D760mm W56kg
8	Cân điện tử loại 300g-0.001kg	Electronic Balance 300g-0.001kg	2	1		
9	Cân điện tử loại 20kg-0.1kg	Electronic Balance 20kg - 0.1kg	3	1		
10	Cân điện tử loại 60kg-0.1kg	Electronic Balance 60kg ~ 0.1kg	1	1		
11	Máy hạ thế (380V, 50Hz - 200V)	Step-down Transformer (380V, 50Hz - 200V)	1	1		for what pupurpose?
12	Máy hạ thế (380V, 50Hz - 200V)	Step-down Transformer (380V, 50Hz - 200V)	10	1		
13	Máy hạ thế (200V, 50Hz - 100V)	Step-down Transformer (200V, 50HZ - 100V)	8	1		
14	Xe chở mẫu	Sample Cart	5	1		????
15	Thiết bị xác định độ mịn của xi măng theo phương pháp tỷ diện tích		1	2		????
16	Thùng hấp vữa xi măng		1	2		????
17	Khuôn xi măng Le Chaterlier		6	2		????
18	Bộ kim Vica		2	2		????
9.3	Nhựa	(Asphalt)				
1	Máy trộn kiểu guồng xoắn loại 30l	Pug Mixer 30l	1	1		1.0x1.08x0.8m 300kg Specimen height: Min. 50 mm Opering pressure: 800 to 1000 kPa Weight: 410 kg
2	Thiết bị thí nghiệm nghiền trộn bitumen	Gyratory Testing machines	1	1		tensile speed is either 50mm or 100mm.min
3	Thiết bị xác định độ đàn hồi làm lạnh	Refrigerated Ductility Machine	1	1		
4	Thiết bị tự động xác định điểm chảy mềm	Automatic Softening Point	1	1		
5	Thiết bị xác định điểm chảy mềm	Softening Point	1	1		????
6	Thiết bị xác định độ kim lún tự động	Automatic Penetrometer	1	1		????
7	Thiết bị xác định độ kim lún	Penetrometer	1	1		????
8	Thiết bị kiểm tra hàm lượng parafin	Wax Content Tester	1	1		????
9	Nhớt kế Brookfield CPS-E1	Brookfield CPS-E1(Viscosemeter)	1	1		????
10	Thiết bị xác định nhiệt độ bắt lửa Cleveland	Cleveland Flash Point Testers	1	1		
11	Máy hút chân không	Vacuum Suction Apparatus	1	2		
12	Bình hút chân không	Vacuum Suction Bottle	1	2		

13	Bể ôn nhiệt	Constant Temperature Water Baths	1	2		Capacity: 48 litres Max water depth: 258 mm Temperature: Range 0 to 99.9 °C; Stability ± 0.1 Weight: 5.5 kg
14	Thiết bị làm lạnh	Refrigerant Machine	1	2		????
15	Thiết bị xác định lượng tồn thất khi nung		1	2		????
16	Thiết bị xác định lượng hòa tan trong Trichloethylene		1	2		????
17	Bình xác định tỷ trọng	Specific Gravity Bottle	9	3		Hubbard-Carmick Specific Gravity Bottle. Conical Type 25ml. Or Jibbard-Carmick Specific Gravity Bottle. Cylindrical Type 24 ml
		DVD Material			1	
9.4	Bê tông nhựa	(Asphalt Concrete)				
1	Máy đầm tự động Marshall	Marshall Automatic Compaction	2	1	2	Important
2	Hộp cách âm thiết bị đầm	Compaction soundproofing Box	2	1	1	????
3	Thiết bị kiểm tra độ ổn định tự động Marshall	Marshall Automatic Stability Testing	1	1	1	
4	Bể ôn nhiệt	Constant Temperature Water Baths	2	1	2	
5	Máy trộn Atphan - 30l	Asphalt Mixer - 30 litre	1	1	1	
6	Thiết bị xác định khối lượng riêng và độ hút nước	Density and water absorption	1	1		????
7	Lò sấy loại lớn	Large Capacity Drying ovens	1	1	1	
8	Lò sấy loại trung bình	Medium Capacity Drying ovens	3	1	1	
9	Cân điện tử loại 20kg~0.1kg	Electronic Balance (20kg ~ 0.1kg)	1	1	1	
10	Bếp ga	LP gas ring	3	1		for what?
11	Máy trộn Atphan - 5l	Small Asphalt Mixer 5l	1	1	1	why not by hands?
12	Thiết bị thí nghiệm nén	Dual Console Compression Testers	1	1		????
13	Thiết bị kiểm tra điểm bắt cháy Cleveland	Cleveland Flash Point Testers	1	1		same as 9.3
14	Nhớt kế Saybolt	Saybolt Viscosimeter	1	1		necessary for practical training?
15	Bộ chiết tự động	Automatic Extraction Apparatus	1	1		
16	Bộ chiết tự động Abson	Abson Extraction Automatic	1	1		
17	Thiết bị phục hồi Atphan tự động	Automatic Recovery of Asphalt	1	1		Extraction flask Airation tube Condenser Gas flow meter with stand 100ml/min Thermometer 0 to 300°C Electric heating mantle 100V x 500 W with Slyduks
18	Bộ chiết Soxhlet	Soxhlet	1	1	1	
19	Cân điện tử loại 20kg~0.2kg	Electronic Balance (20kg ~ 0.2kg)	1	1	1	
20	Bếp ga	LP gas ring	1	1		for what?
21	Máy trộn Atphan - 6l	Small Asphalt Mixer 6l	1	1	2	why not by hands?
22	Thiết bị thí nghiệm nén	Dual Console Compression Testers	1	1		????
23	Thiết bị kiểm tra điểm bắt cháy Cleveland	Cleveland Flash Point Testers	1	1		same as 9.4
24	Nhớt kế Saybolt	Saybolt Viscosimeter	1	1		necessary for practical training?
25	Bộ chiết tự động	Automatic Extraction Apparatus	1	1		
26	Bộ chiết tự động Abson	Abson Extraction Automatic	1	1		
27	Thiết bị phục hồi Atphan tự động	Automatic Recovery of Asphalt	1	1		????
28	Bộ chiết Soxhlet	Soxhlet	1	1	1	
29	Cân điện tử loại 20kg~0.3kg	Electronic Balance (20kg ~ 0.3kg)	1	1	1	
30	Thiết bị ly tâm dùng cho phương pháp Abson	Centrifuge For Abson Method	2	1	1	????
31	Cân điện tử, độ chính xác 0,01g; 0,1g; 1g	Electronic Balance, preciseness ~0.01g; 0.1g; 1g	1	2	1	
		Head Permeameter				Model No. DS - 40A
		Falling Head Permeameter				Compaction permeameter
		Constant Head Permeameter				
		Salt Densimeter				
		Salt Densimeter (KANTABU)				
		Blaine Fineness Apparatus				Blaine air Permeability Apparatus Weight 2.8 kg
		Consistometer				EL34-0300/01 series Vibro Consistometer
		Engine-Type Dynamo				
		Constant Temperature Room				
		Asphalt Equipment				
		Density and water Absorption				
32	Cân thủy tĩnh, độ chính xác 0,1g	Density Balance, preciseness ~ 0.1g	1	2		
33	Máy quay ly tâm 3000 vòng/phút	Capacity Asphalt Centrifuge Extractor (3000rpm)	1	2		????
34	Bể ôn nhiệt	Constant Temperature Water Baths	1	2		
35	Máy hút chân không	Vacuum Extractor	1	2		????
36	Bình hút chân không	Vacuum Tank	1	2		????
X	Thiết kế đường ô tô	(Road Design)				
1	<i>Phòng học chuyên dụng, gồm</i>	Specialized class room includes:				
2	Máy tính	Computers	20	1		????
3	Phần mềm thiết kế đường ô tô	Softwares for Road Design	1	1		what kinds?
4	Máy chiếu	Projector	1	2		
5	Máy in A0, A1, A3, A4	A0, A1, A3, A4 Printer	4	2	1	what printer you have now? how you will maintain ink or accessory?
XI	Xây dựng đường	(Road Construction)				
1	Máy ủi, loại 75CV	Small Bulldozer, 10 ton class	2	1		
2	Máy san, loại 3.1m	Small Motor Grader, 3.1m class	2	1		these are for vocational school
3	Máy xúc thủy lực, 0.14M3	Hydraulic Excavator, 0.14M3	2	1		????
4	Lu rung 4 tấn	Double Drum Vibrating Roller, 4 ton	2	1		????
5	Lu điều khiển tay, 780kg	Hand Guided Roller, 780 kg	2	1		????
6	Đầm bàn, 80kg	Plate Compactor, 80 kg	2	1		????
7	Xe cần trục 2.5 tấn	Big Truck with 2.5 ton crane	2	2		????
8	Lu rung 10.5 tấn	Single Smooth Drum Vibrating Roller 10.5 ton	2	2		????
9	Lu bánh hơi, 13 tấn	Tired Roller, 13 ton	2	2		????
10	Máy phát điện động cơ, 150KV	Engine Generator, 150KV	2	3		????
11	Lu rung 19.7 tấn	Single Smooth Drum Vibrating Roller, 19.7 ton	2	3		????
12	Lu bánh thép, 10 tấn	3-wheel Roller, 10 ton	2	3		????
13	Ô tô 2,5 tấn	2.5 ton truck	2	3		????
14	Máy ủi 110 CV	Bulldozer	2	3		????
15	Lu bánh thép 8 tấn		2	3		????
16	Lu bánh thép 12 tấn		2	3		????
17	Bộ ván khuôn đổ BTXM		2	3		????
		DVD Material			1	

New Request
on March 22
as Attached
on Appendix 4 of
MoM of March 23,2010

XII Kiểm định đường		(Road Inspection)			
1	Bộ thiết bị thăm dò tính chất của đất	Swedish Sounding Apparatus	1	1	1
2	Côn đo xuyên	Cone penetrometer	1	1	1
3	Xuyên độ kế tiêu chuẩn	Standard Penetrometer	1	1	1
4	Thiết bị đo ma sát	Friction Tester	1	1	1
5	Thiết bị xác định độ võng theo phương pháp ép tĩnh	Plate Bearing Test	1	1	1
6	Thiết bị kiểm tra độ võng bằng phương pháp ép tĩnh (các thông số kỹ thuật đường băng)	Plate bearing Test (Runway Specifications)	1	1	1
7	Thiết bị xác định độ bằng phẳng mặt đường theo chỉ số IRI	International Roughness Index	1	1	1
8	Thiết bị đo động FWD	Falling Weight Deflectometer	1	1	1
9	Thiết bị xác định độ hằn vết bánh xe	Wheel Tracking Machine	1	1	1
10	Xe khảo sát tính trạng mặt đường	Hawkeye 2000	1	1	1
11	Cần kiểm tra Benkelman	Benkelman Beam Tester	1	2	1
12	Thiết bị kiểm tra chất lượng mặt đường	Pavement Quality Indicator	1	2	1
13	Thước thẳng 3m	3 M Profile Meter	1	2	1
14	Thước cặp đo cao	Height Gauge	1	2	1
XIII Thiết kế cầu		(Bridge Design)			
1	<i>Phòng học chuyên dùng, gồm</i>	Specialized class room includes:			
2	Máy tính	Computers	20	1	0
3	Phần mềm thiết kế cầu	Softwares for Bridge Design	1	1	0
4	Máy chiếu	Projector	1	2	1
5	Máy in A0, A1, A3, A4	A0, A1, A3, A4 Printer	4	2	1
		DVD Material			1
XIV Xây dựng cầu		(Bridge Construction)			
1	Bộ neo cáp dự ứng lực	Anchor Concordant Tendon	2	1	1
		DVD Material			1
2	Kích thủy lực	Hydraulic jack	6	1	1
3	Cáp dự ứng lực	Concordant Tendon	6	1	1
4	Bộ thiết bị khoan cọc nhồi		1	1	1
5	Dầm bê tông cốt thép U, I, T	Reinforced Concrete Beam U, I, T	3	2	1
6	Đầm dùi	Reedle vibrator	2	2	1
7	Cần trục	Guntory crane	1	2	1
8	Búa diesel đóng cọc		1	2	1
9	Búa ép, nén cọc		1	2	1
10	Cọc vắn thép L=12m		30	2	1
11	Ván khuôn thép dầm, T33mét; I33mét		1	2	1
12	Trạm kích thủy lực xuyên tâm công suất dự ứng lực, nâng		6	3	1
13	Ray P43: 300 mét; Tời đin 5 Tấn, múp, cáp		2	3	1
14	Giá sàng dầm		1	3	1
15	Cầu 16 tấn	16 ton crane	1	3	1
16	Xe đúc (đúc hằng kết cầu nhịp)		2	3	1
17	Xe gồng chở dầm		2	3	1
XV Kiểm định cầu		(Bridge Inspection)			
1	Máy siêu âm bê tông	Concrete Ultrasonic Machine	1	1	1
2	Thiết bị đo bề rộng vết nứt bê tông	Clack gauge	1	1	1
3	Tenzomet dòn	Lever Tenzomet (Strain gauge)	10	1	1
4	Máy định vị và kiểm tra chiều dày lớp bảo vệ cốt thép trong bê tông		1	2	1
5	Thiết bị đo ứng suất tĩnh và động	Dynamic Stress Apparatus	1	2	1
6	Thiết bị đo dao động	Stress Due To Dead loads	2	2	1
7	Thiết bị đo độ võng động của kết cấu nhịp cầu	Oscillograph	1	3	1
8	Thiết bị định vị độ chính xác cao	Deflection Measuring Apparatus of Bridge Span Structure by Laser	1	3	1
XVI Các thiết bị phụ trợ thí nghiệm		(General Laboratory Equipments)			
1	Giá sắt	Steel Shelf	15	2	1
2	Dụng cụ thủy tinh	Glass wares	1	2	1
3	Bàn thí nghiệm H800 X W1800 X D900	Laboratory Bench H800 X W1800 X D900	1	2	1
4	Bàn thí nghiệm H700 X W2000 X D800	Laboratory Bench H700 X W2000 X D800	2	2	1
5	Bàn thí nghiệm H800xW3000xD1500	Laboratory Bench H800xW3000xD1500	4	2	1
6	Thư viện di động	Movement library	1	2	1
7	Chụp thông khói	Fume Hood	3	3	1
8	Bồn rửa	Sink	3	3	1
		Laptop PC			10
		Video Projector			10
		Language Learning Equipment			10
		International standard reference Book			10

List of Equipment of Vinh Yeon Traing Center
 CONSTRUCTION FACULTY- Survey Equipment
 2-Mar-09

No.	Asset name	Year into usage	Unit	Quantity (as per recorded)	Cost	Quantity (as per counted)	Difference
A	Survey equipment						
1	Theodolite 010 (tripod+equipment+ case)	Old days		2		2	0
	Equipment No: 128488	Old days	set	1		1	0
	Equipment No:128489	Old days	set	1		1	0
2	Theodolite 020A (No: 612723(89))	94	set	1	6,180,000	1	0
3	Theodolite 020B (No:355710)	Mar.01	set		34,500,000		0
4	Theodolite 030 (tripod+weight+equipment+ case)	Old days	set	11		11	0
	Equipment No: 030-115906	Sep.95	set	1	4,500,000	1	0
	Equipment No: 030-114926	Jun.97	set	1	3,500,000	1	0
	Equipment No: 030-121734	Sep.94	set	1	2,500,000	1	0
	Equipment No: 030-114942	Sep.95	set	1	3,500,000	1	0
	Equipment No: 030-126935	Jun.97	set	1	3,500,000	1	0
	Equipment No: 030-126882	Aug.97	set	1	3,500,000	1	0
	Equipment No: 030-119-42	Sep.95	set	1	3,500,000	1	0
	Equipment No: 030-121941	Sep.94	set	1	2,500,000	1	0
	Equipment No: 030-121506	Sep.94	set	1	2,500,000	1	0
	Equipment No: 030-121721	Old days	set	1		1	0
	Equipment No: 030-120995	Old days	set	1		1	0
5	Theodolite 030 (tripod+weight+equipment+ case;94)	Dec.98	set	3	18,000,000	3	0
	Equipment No: 030-114938	Dec.98	set	1	6,000,000	1	0
	Equipment No: 030-xxxxxx	Dec.98	set	1	6,000,000	1	0
	Equipment No: 030-xxxxxx	Dec.98	set	1	6,000,000	1	0
6	Delta 10A (tripod+equipment+ case)			2		2	0
	Equipment No: xxxxx	Old days	set	1		1	0
	Equipment No:xxxxxx	Old days	set	1		1	0
7	Delta equipment 20 grat		set	4		4	0
	Equipment No: xxxxx	Aug.97	set	1	3,500,000	1	0
	Equipment No:xxxxxx	Aug.97	set	1	3,500,000	1	0
	Equipment No: xxxxx	Sep.95	set	1	4,500,000	1	0
	Equipment No:xxxxxx	Sep.94	set	1	5,000,000	1	0
8	Theodolite No. 11731 (black)(95: 1 unit)	Aug.98	set	1	4,000,000	1	0
9	Russian made theodolite 3T-5KJJ(56: 3 units)			3	19,500,000	3	0
	Equipment No:xxxxxx	Sep.2000	set	1	6,500,000	1	0
	Equipment No: xxxxx	Sep.2000	set	1	6,500,000	1	0
	Equipment No:xxxxxx	Sep.2000	set	1	6,500,000	1	0
10	Theodolite 3T-5KJJ(97: 6 units)	May.99		6	36,000,000	6	0
	Equipment No:xxxxxx	May.99	set	1	6,000,000	1	0
	Equipment No: xxxxx	May.99	set	1	6,000,000	1	0
	Equipment No:xxxxxx	May.99	set	1	6,000,000	1	0
	Equipment No:xxxxxx	May.99	set	1	6,000,000	1	0
	Equipment No: xxxxx	May.99	set	1	6,000,000	1	0
	Equipment No:xxxxxx	May.99	set	1	6,000,000	1	0
11	Theodolite 3T-5KJJ			4		4	0
	Equipment No:xxxxxx	Mar.01	set	1	7,100,000	1	0
	Equipment No:xxxxxx	Sep.2000	set	1	6,500,000	1	0
	Equipment No: xxxxx	Sep.2000	set	1	6,500,000	1	0
	Equipment No:xxxxxx	May.99	set	1	6,000,000	1	0
12	Russian made theodolite 4T-30P (incl. 2 compass)			2		2	0
	Equipment No: xxxxx	Dec.01	set	1	7,150,000	1	0
	Equipment No:xxxxxx	Dec.01	set	1	7,150,000	1	0
13	Theodolite T6-038-78 (full set)	Old days	set	1		1	0
14	Electronic Theodolite DTM332 NIKO	Mar.04	set	1	79,950,000	1	0
	Equipment No:xxxxxx, attached with:						
	Battery BC-65		piece	1		1	0
	Quick chargerQ-75E (220-240V)		piece	1		1	0
	Data transmitter		piece	1		1	0
	Alluminium Tripod		piece	1		1	0
	Single mirror		piece	2		2	0
	Mirror case		piece	2		2	0
	Spot board		piece	2		2	0
	Mirror pole		piece	2		2	0
	Pole foot		piece	2		2	0
	Data reading disk		piece	1		1	0
II	Leveling equipment						
1	Leveling equipment Ni025 (equipment+case+foot)(9)	Aug.97		3	16,500,000	3	0
	Equipment Ni 025: xxxxxxxx	Aug.97	set	1	5,500,000	1	0
	Equipment Ni 025:xxxxxxx	Aug.97	set	1	5,500,000	1	0
	Equipment Ni 025: xxxxxxxx	Aug.97	set	1	5,500,000	1	0
2	Leveling equipment Ni025 (93: 1 unit)			1		1	0

	Equipment Ni 025: xxxxxxx	Dec.98	set	1	6,000,000	1	0
3	Leveling equipment Ni030 (92:		set	2		2	0
	Equipment Ni 030: xxxxxxx	Old days	set	1		1	0
	Equipment Ni 030: xxxxxxx	Old days	set	1		1	0
4	Leveling equipment Ni050:xxxxx	May.92	set	1	2,500,000	1	0
5	Leveling equipment WILD	Old days	set	5		5	0
	WILD equipment number: xxxxxxx	Old days	set	1		1	0
	WILD equipment number: xxxxxxx	Old days	set	1		1	0
	WILD equipment number: xxxxxxx	Old days	set	1		1	0
	WILD equipment number: xxxxxxx	Old days	set	1		1	0
	WILD equipment number: xxxxxxx	Old days	set	1		1	0
6	Leveling equipment COSLOM	Jun.97		2	9,000,000	2	0
	COSLOM equipment No: xxxxxxx	Jun.97	piece	1	4,500,000	1	0
	COSLOM equipment No: xxxxxxx	Jun.97	piece	1	4,500,000	1	0
7	Leveling equipment	Old days	set	1		1	0
8	Leveling equipment TCI (no coded number)	Old days	set	3		3	0
9	Leveling equipment 3H-5JJ-YOM3 (53)	Aug.01	set	7	38,500,000	6	0
	Equipment No:xxxxxx (transferred to Hanoi)	Aug.01	piece	1	5,500,000		1
	Equipment No: xxxxx	Aug.01	piece	1	5,500,000	1	0
	Equipment No:xxxxxx	Aug.01	piece	1	5,500,000	1	0
	Equipment No:xxxxxx	Aug.01	piece	1	5,500,000	1	0
	Equipment No: xxxxx	Aug.01	piece	1	5,500,000	1	0
	Equipment No:xxxxxx	Aug.01	piece	1	5,500,000	1	0
	Equipment No:xxxxxx	Aug.01	piece	1	5,500,000	1	0
10	Leveling equipment NIKON (55)		set	3	20,850,000	3	0
	NIKON: AX-1S: xxxxxxx	Sep.2000	set	1	6,950,000	1	0
	NIKON: AX-1S: xxxxxxx	Sep.2000	set	1	6,950,000	1	0
	NIKON: AX-1S: xxxxxxx	Sep.2000	set	1	6,950,000	1	0
11	Leveling equipment NIKON			4		4	0
	NIKON: AX-1S: xxxxxxx	Sep.2000	set	1	6,950,000	1	0
	NIKON: AX-1S: xxxxxxx	Sep.2000	set	1	6,950,000	1	0
	NIKON: AX-1S: xxxxxxx	Sep.2000	set	1	6,950,000	1	0
	NIKON: AX-1S: xxxxxxx	Sep.2000	set	1	6,950,000	1	0
12	Leveling equipment SOKKIA (equipment+cover+case)			5		5	0
	SOKKIA-C41: xxxx	Dec.2002	set	1	5,900,000	1	0
	SOKKIA-C41: xxxx	Dec.2002	set	1	5,900,000	1	0
	SOKKIA-C41: xxxx	Dec.2002	set	1	5,900,000	1	0
	SOKKIA-C41: xxxx	Dec.2002	set	1	5,900,000	1	0
	SOKKIA-C41: xxxx	Dec.2002	set	1	5,900,000	1	0
C	Other equipment						
1	Palme thickness gauge	Old days	piece	1		1	0
2	Thickness gauge	Old days	piece	1		1	0
3	Compass	Old days	box	6		6	0
4	JENA (7x50) telescope	Old days	box	7		7	0
5	MultiflexG:MOM937033	Old days	unit	1		1	0
6	Gradometer	Old days	piece	2		2	0
7	Timer	Old days	piece	2		2	0
8	elevation barometer	Old days	piece	1		1	0
9	Hand compass	Old days	piece	1		1	0
10	Hand compass	Old days	piece	1		1	0
11	Russian-made compass	Old days	piece	1		1	0
12	Caliper gauge	Old days	piece	1		1	0
13	surveyor table	Old days	piece	1		1	0
14	Ondometer	Old days	piece	1		1	0
15		Old days	piece	1		1	0
16	Script projector	Old days	piece	1		1	0
17	Table driller	Old days	piece	1		1	0
18	microscope	Old days	piece	1		1	0
19	Drag-cup current meter	Old days	piece	3		3	0
20	Rotating turbin current meter	Old days	set	1		1	0
21	cross-section meter (6 pieces)	Old days	box	4		4	0
22	Thermometer 200 oC	2004	box	1		1	0
23	Metal thermometer (bitumen testing)	Old days	box	4		4	0
24	micro-weight scale	Old days	box	1		1	0
25	Tap wrench	Old days	box	1		1	0
26	Files	Old days	piece	8		8	0
27	Drilling points of various kinds	Old days	piece	47		47	0
28	screw cutter of varuous kinds	Old days	piece	30		30	0
29	caliper	Old days	piece	3		3	0
30	Compass Box (12 pieces, 6 compass)	Old days	box	1		1	0
31	Poland-made tool box: 20 pieces	Old days	box	1		1	0
	Clamps	Old days	piece	7		7	0
	Crapers	Old days	piece	3		3	0
	spanner	Old days	piece	3		3	0
	Tube	Old days	piece	1		1	0
	lever tongs	Old days	piece	1		1	0

	pliers	Old days	piece	1		1	0
	Meter	Old days	piece	1		1	0
	Round file	Old days	piece	1		1	0
32	Tap box (handles+tap)	Old days	box	1		1	0
	Tap M24, M22, M18, M16, M14, M12, M10	Old days		28		28	0
	Handle	Old days		7		7	0
33	Enamel tray	Old days	piece	4		4	0
34	JENA magnifier	Old days	piece	1		1	0
35	Rectangular magnifier	Old days	piece	1		1	0
36	Aluminium Box	Old days	piece	1		1	0
37	Aluminium basin	Old days	piece	1		1	0
38	Taps	Old days	piece	55		55	0
E	Measurement tools						
1	Pole (including 2 pieces)	Old days	box	2		2	0
2	Pole	Old days	box	1		1	0
3	Pole of 3m, straight,	Old days	piece	30		30	0
4	Pole of 3m (62), straight	2000	piece	10	1,810,400	10	0
5	Pole of 2m	Old days	piece	54		54	0
6	Folded pole of 3m	Old days	piece	3		3	0
7	Folded pole of 4m	Old days	piece	6		6	0
8	Iron pole	Old days	piece	24		24	0
9	Wooden pole	Old days	piece	28		28	0
10	Fiber meter 30m	Old days	piece	35		35	0
11	Fiber meter 30m	Nov.05	piece	15		15	0
12	Fiber meter 20m	Old days		7		7	0
13	Fiber meter 10m	Old days		1		1	0
14	Fiber meter 05m	Old days		2		2	0
15	Fiber meter 30m	Old days		1		1	0
16	A-shaped meter (1 set of 2 pieces)	Old days		8		8	0
17	Winch	Old days		2		2	0
18	Compass	Old days		1		1	0
19	Hammer of 5kg	Old days		1		1	0
20	Hammer of 0.5kg	Old days		15		15	0
21	Knife	Old days		10		10	0
22	Pole locators	Old days		12		12	0
23	Aluminium Pole	Old days		1		1	0
24	Aluminium Pole	Old days		2		2	0
F	Glass utensils						
1	Glass tray		piece	1		1	0
2	Glass cover	Old days	piece	4		4	0
3	Tube light	Old days	set	3		3	0
4	Glass funnel	Old days	piece	2		2	0
5	Table lamp		piece	2		2	0
6	Glass	Old days	piece	1		1	0
7	Cabinet	Old days	piece	2		2	0
8	Glass table	Old days	piece	1		1	0
9	Pole rack	Old days	piece	1		1	0
10	3-phased circuit breaker	Old days	piece	1		1	0
11	standing fan	Old days	piece	1		1	0
12	surface plate	Old days	piece	1		1	0
13	Panel (1.2x0.8)	Old days	piece	1		1	0
14	Table of 2m	Old days	piece	3		3	0
15	Bench	Old days	piece	2		2	0
H	Fixing utensils						
1	Anvil stand	Old days	piece	1		1	0
2	Files	Old days	piece	14		14	0
3	Abraisive wheel	Old days	piece	1		1	0
4	wooden file	Old days	piece	1		1	0
5	small plier	Old days	piece	3		3	0
6	Spanner	China	piece	1		1	0
7	Iron frame	Old days	piece	1		1	0
8	screw driver	Old days	piece	9		9	0
9	Cliper	Old days	piece	2		2	0
10	Wooden srew driver	Old days	piece	2		2	0
11	Scissor	Vietnam	piece	1		1	0
12	chest saw	Poland	piece	1		1	0
13	chisels	Vietnam	piece	5		5	0
14	surfacer	Vietnam	piece	1		1	0
15	Hand clamp	Old days	piece	1		1	0
16	Table clamp	Old days	piece	3		3	0

HYDRAULICS DIVISION

March 2009

No.	Asset Items	Years of usage	Unit	Record		Inspection	
				Qty	Cost	Qty	Cost
1	Turbine Velocity meter	old	item	1		1	
2	Multiflex	old	item	1		1	

3	Theodolite	old	item	2	2
4	Leveling instrument	old	item	2	2
5	Fish shaped iron weights (5kg)	old	item	1	1
6	Surveying rod	old	item	2	2
7	Surveying direction pole	old	item	1	1
8	Tripod	old	item	1	1
Laboratory					
1	Hydrostatic pressure meter	old	item	1	1
2	Reynolds test	old	item	1	1
3	Bernoulli test - energy consumption	old	item	1	1
4	Small winch	old	item	1	1
5	Desk (0.6x1.2)	old	item	2	2
6	Chairs	old	item	3	3
7	Glass cabinets	old	item	1	1
8	Bench	old	item	3	3
9	Fluorescent lights	old	set	1	1

Material toughness testing laboratory, **General Subject division**

Date: 6 March 2009

No.	Asset Items	Years of usage	Unit	Record		Inspection	
				Qty	Cost	Qty	Cost
1	Multifunctional tension and compression machine (30T)	old	item	1		1	
2	Torsion test equipment	old	item	1		1	
3	Tension test equipment	old	item	1		1	
4	Fatigue testing equipment	old	item	1		1	
5	Twisting test equipment	old	item	1		1	
6	Deflection test equipment	old	item	1		1	
7	Clock-dial micrometer	old	item	2		2	
8	Force meter	old	item	2		2	
9	Weights (different types)	old	item	50		50	
10	Clamps	old	set	1		1	
11	Student desks (0.5x2.5)	old	item	4		4	
12	Bench	old	item	4		4	
13	Working table	old	item	1		1	
14	Blackboards	old	item	2		2	
15	Chairs	old	item	1		1	
16	Fluorescent lights	old	set	2		2	
17	Metal cabinets	old	item	1		1	
18	Metal tubs	old	item	8		8	
19	Wash basin	old	item	1		1	
20	White board	old	item	2		2	
21	Non-glare board	Aug-07	item	1		1	

Soil mechanics testing laboratory, **Construction Faculty**

Date: 02 March 2009

No.	Asset Items	Years of usage	Unit	Record		Inspection	
				Qty	Cost	Qty	Cost
A Model room							
1	1/2 of wooden beam timber bridge	old	item	1		1	
2	Double timber bridge	old	item	1		1	
3	Concrete bridge & abutments and piers	old	item	1		1	
4	Concrete bridge	old	item	1		1	
5	Marble arch bridge	old	item	1		1	
6	Cầu dầm hông	old	item	1		1	
7	Stone pier	old	item	1		1	
8	Concrete pier	old	item	1		1	
9	Concrete pier with high pilework	old	item	1		1	
10	Construction platform	old	item	1		1	
11	Abutment and pier	old	item	1		1	
12	Formation of joints	old	item	1		1	
13	Section of sunk caisson	old	item	1		1	
14	I-shape beam	old	item	1		1	
15	Wooden T-beam	old	item	1		1	
16	Timber pile	old	item	1		1	
17	Scaffold for pier	old	item	1		1	
18	Underwater concrete pouring equipment	old	item	1		1	
19	Cribwork	old	item	1		1	
20	Wooden pass (for scaffold)	old	item	1		1	
21	Hollow concrete pier	old	item	1		1	
22	Fixed gantry post	old	item	1		1	
23	Concrete beam launching	old	item	1		1	
24	A-shape pile drive	old	item	1		1	
25	Lang Son arch bridge	old	item	1		1	
26	Bridge at Km6 Tam Dao	old	item	1		1	
27	Bridge at Km13	old	item	1		1	

28	Vibrating screen	old	item	1		1
B Soil mechanics room						
1	Oven (made in Poland)	old	item	1		1
2	Site testing kit	old	set	2		2
3	Single-axial compressor	old	item	1		1
4	Soil stirrer		item	1		1
5	pH testing machine	old	item	1		1
6	Sand drying light	old	item	1		1
7	Osmosis meter	old	set	1		1
8	Scale (1kg)	old	item	1		1
9	Dehumidifier	old	item	1		1
10	Hot plate (for sand)	old	item	2		2
11	enamel covered basin	old	item	1		1
12	Teacher's desk	old	item	1		1
13	Chairs	old	item	1		1
14	500ml glass vial	old	item	2		2
15	1000ml glass vial	old	item	1		1
16	Ceramic pestle and mortar	old	set	4		4
17	Glass funnel	old	item	4		4
18	Safety Glass for heating	old	item	5		5
19	Triangular Density container 500ml	old	item	20		20
20	Chronometer	Mar-06	item	2	465,000	2
21	152 Diameter Proctor Cone	old	set	1		1
22	Marble top bench	old	item	8		8
23	Desk	old	item	3		3
24	Bench	old	item	4		4
25	Soil sample box	old	set	1		1
26	Enamel covered tray	old	item	4		4
27	Glass 4-shelf cabinet	old	item	1		1
28	Fluorescent lights	old	set	4		4
29	Ceiling fan	old	item	1		1
30	Sand scale	old	item	1		1
31	Soil sieve set TCASHCO	2004	set	1	3,200,000	1
32	Cansparande tool	old	set	1	1,670,000	1
33	Thermometer (0 to 100 degrees)	old	item	5	50,000	5
34	Sand cone	old	set	1	2,100,000	1
35	Density container 100cm3	old	item	20	1,200,000	20
Construction material room						
1	Rock sieve	old	set	1		1
2	Standard Proctor cone	old	item	1		1
3	Benkelman beam	old	item	1		1
4	Magnifier	old	item	1		1
5	Vica needle	old	item	3		3
6	Rock sample box	old	box	3		3
7	Concrete mould	old	set	1		1
8	Mortar mould	old	set	1		1
9	Slump cone	old	item	1		1
10	Glass 4-shelf cabinet	old	item	1		1
11	Teacher's desk	old	item	1		1
12	Desk	old	item	8		8
13	Stool	old	item	11		11
14	Fluorescent lights	old	item	4		4
15	3-phase circuit breaker	old	item	1		1
16	500cc glass vial	old	item	1		1
17	Dehumidifier	Dec-04	item	1	1,600,000	1
18	Thermometer (0 to 200 degrees)	old	item	5	500,000	5
19	Oven (0 to 300 degrees)	old	item	1	4,500,000	1
20	1000ml glass vial	old	item	5	680,000	5
21	5 litre measuring container	old	item	2	320,000	2
22	Grading sieves (Vietnamese standards)	old	item	1	1,950,000	1
23	Concrete slump cone	old	item	2	240,000	2
24	Bitumen penetration test equipment	old	item	1	4,500,000	1
25	Melting equipment	old	item	1	5,500,000	1
26	Stainless stain pot	old	item	1	34,000	1
27	Electric burner	old	item	1	185,000	1
28	Industrial fan 500	Jun-05	item	3	1,650,000	3
29	Non-glare board	Nov-05	item	2	2,940,000	2
30	Water filter + stand	Sep-05	set	2	686,000	2
31	Aluminum tray	old	item	10	65,000	10
32	Small hammer	old	item	4	60,000	4
33	3m (4x6) straight edge	old	item	1	120,000	1

Teacher proposals, bilingual versions

No	Teacher's name	Subject
1	Le Ngoc Ly	Bridge
2	Phung Ba Thang	Bridge
3	Le_Ngoc_Ly	
4	Phung_Ba_Thang	
5	Nguyen Duc Tuyen	Bridge inspection
6	Nguyen Quang Hung	Geodesy
7	Nguyen Van Dang	Geotechnique
8	Hoang Dinh Hong	Road Construction
9	Nguyen Minh Khoa	Hydraulics, Hydrology
10	Ngo Quoc Trinh	Foundation & Pavement
11	Ngo Thi Thanh Huong	Soil Mechanics
12	Nguyen Thi Loan	Labor Safety
13	Nguyen Thuy Anh	Material Durability
14	Nguyen Van Doan	Road Inspection
15	Pham Van Huynh	Motorway Design
16	Tran Thanh Ha	Construction Materials
17	Dr.Hien	Recommendations

PROPOSAL TO IMPROVE CURRICULUM SUBJECT: BRIDGE CONSTRUCTION

<p>Full name: Le Ngoc Ly Qualification: Master, PhD student in bridge. Organization: Bridge Division Teaching subject: Bridge Construction Years of experience: 3 years (bridge construction site experience) and 8 years of teaching.</p> <p>Bridge Construction is one of the main subjects in the Bridge and Road Construction as the training target of the College is to provide employees with good capability in construction. Bridge construction includes many work aspects such as survey, construction planning and construction management, etc... for a variety of works items such as construction of abutments and piers, construction of steel bridge structure, reinforced concrete bridge, cantilever balanced bridges, pre-stressed reinforced concrete bridges, etc. Therefore the study of bridge construction does not only take place on college campus but also on site training.</p> <p>In order to help students familiarize with equipments and machineries in bridge construction to apply the knowledge gained in College to actual situation on site, I would like to propose that the Project supplies the followings:</p> <ul style="list-style-type: none"> - Curriculum and text books from developed countries. - New teaching and evaluation methods - Improvement of foreign language skills: multimedia lab. - Auditorium specialized for bridge construction subject. - Equipment for practice teaching: <p>Proposed by Signed Le Ngoc Ly</p>	<p><i>Họ và tên: Lê Ngọc Lý</i> <i>Đơn vị công tác: Tổ Cầu</i> <i>Trình độ: Thạc sỹ- NCS</i> <i>Chuyên ngành: Cầu</i> <i>Môn giảng dạy: Xây dựng cầu</i> <i>Kinh nghiệm thực tiễn: 3 năm thi công cầu</i> <i>Kinh nghiệm giảng dạy: 8 năm</i></p> <p><i>Đề xuất cho môn Xây dựng Cầu</i> Xây dựng cầu là môn học chính của Ngành xây dựng cầu đường vì mục tiêu đào tạo của Nhà trường là đào tạo những cán bộ giỏi thi công. Xây dựng cầu gồm nhiều công tác như: Đo đạc, tổ chức thi công, quản lý xây dựng...những phương pháp công nghệ cụ thể như xây dựng mố trụ, xây dựng kết cấu nhịp cầu thép, cầu BTCT, cầu đúc hẫng, cầu BTCT DƯL... Vì vậy xây dựng cầu không những được học tập ở trong nhà trường mà còn học rất nhiều trên các địa bàn thực tập và bên ngoài trường.</p> <p>Nhằm mục đích giúp sinh được tiếp cận với những máy móc, thiết bị trong công tác thi công, xây dựng cầu. Sau khi tốt nghiệp, đi làm có thể áp dụng kiến thức đã được trang bị ở Nhà trường vào thực tiễn. Kính mong đoàn công tác tạo điều kiện trang bị cho chúng tôi các vấn đề sau:</p> <ul style="list-style-type: none"> - Chương trình, giáo trình đào tạo của các nước phát triển; - Phương pháp giảng dạy, đánh giá mới; - Nâng cao năng lực ngoại ngữ: Phòng học tiếng - Phòng học chuyên dùng cho môn xây dựng cầu; - Thiết bị giảng dạy thực hành:
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PROPOSAL TO IMPROVE CURRICULUM SUBJECT: BRIDGE CONSTRUCTION

No.	Equipment (Vietnamese)	Equipment (English)	Equipment (English)	Quantity	Priority
1	Bộ neo cáp dự ứng lực	Anchor Concordant Tendon	Pre-stressed cable anchorage	2	1
2	Kích thủy lực	Hydraulic jack	Hydraulic jack	6	1
3	Cáp dự ứng lực	Concordant Tendon	Pre-stressed cables	6	1
4	Bộ thiết bị khoan cọc nhồi		Cast-in-place pile drilling equipment set	1	1
5	Dầm bê tông cốt thép U, I, T	Reinforced Concrete Beam U, I, T	Reinforced Concrete Beam U, I, T	3	2
6	Đầm dùi	Reedle vibrator	Riddle vibrator	2	2
7	Cần trục	Guntory crane	Gantry crane	1	2
8	Búa diesel đóng cọc		Diesel pile driving hammer	1	2
9	Búa ép, nén cọc		Pile compressor	1	2
10	Cọc ván thép L=12m		Steel sheet pile L=12m	30	2
11	Ván khuôn thép dầm, T33mét; I33mét		Steel scaffolds for beams (T beam: 33m; I beam: 33m)	1	2
12	Trạm kích thủy lực xuyên tâm căng cáp dự ứng lực, nâng dầm		Hydraulic jack station (for cable stressing and beam lifting)	6	3
13	Ray P43: 300 mét; Tời đin 5 Tấn, múp, cáp		Rail P43 (300m); 5-ton winch, pulley block, cable	2	3
14	Giá sàng dầm		(Beam moving support frame)?	1	3
15	Cầu 16 tấn	16 ton crane	16-ton crane	1	3
16	Xe đúc (đúc hằng kết cấu nhịp)		Cast-in-situ machine (for casting structure)	2	3
17	Xe gòng chở dầm		Beam wagon	2	3

COLLEGE OF TRANSPORT
CONSTRUCTION FACULTY

PROPOSAL TO IMPROVE CURRICULUM
SUBJECT: BRIDGE DESIGN

<p>Full name: Phung Ba Thang Qualification: Master, PhD student in bridge. Years of experience: 10 years.</p> <p>In order to improve the training quality for the Bridge Design subject in the Road and Bridge Construction course, I would like to propose to your team the followings:</p> <ul style="list-style-type: none"> - Increase the practice lecture time on the design software on computer from 16 school hours to 30 school hours. - Provide additional lectures on the new modern bridge design software. - Provide “electronic lectures” (using projectors). - Feedback evaluation of lecturers by students - Replace the traditional examination format with the multiple choice examination on computers to ensure the objectiveness of the exams and provide students with results right after exams. - Provision of practice lecture equipments as follows: 	<p style="text-align: center;">Họ tên: Phùng Bá Thăng Trình độ: Thạc sỹ-NCS Môn giảng dạy: Thiết kế cầu</p> <p>Kinh nghiệm: 10 năm KIẾN NGHỊ NÂNG CAO CHẤT LƯỢNG ĐÀO TẠO MÔN THIẾT KẾ CẦU</p> <p>Nhằm nâng cao chất lượng đào tạo môn Thiết kế Cầu ngành xây dựng cầu đường, tôi xin đề xuất với quý đoàn một số ý kiến như sau:</p> <ul style="list-style-type: none"> - Tăng khối lượng giảng dạy thực hành sử dụng phần mềm thiết kế trên máy tính từ 16 tiết lên 30 tiết; - Giảng dạy thêm các phần mềm thiết kế Cầu mới hiện có trên thế giới; - Sử dụng bài giảng điện tử (dùng máy chiếu) trong quá trình giảng dạy; - Cần đánh giá giảng viên thông qua sinh viên; - Thay đổi phương thức thi truyền thống bằng hình thức thi trắc nghiệm trên máy để đảm bảo tính khách quan, sinh viên có thể biết kết quả thi ngay sau khi kết thúc buổi thi; - Tăng cường trang thiết bị giảng dạy thực hành:
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<i>Phòng học chuyên dùng, gồm</i>	Specialized class room includes:	Qty	Priority
Máy tính	Computers	25	1
Phần mềm thiết kế cầu	Softwares for Bridge Design(Midas, sap, RM)	1 set	1
Máy chiếu	Projector	1	2
Máy in A0, A1, A3, A4	A0, A1, A3, A4 Printers	1 set	2
Thiết bị âm thanh	Sound system	1 set	
Mô hình các loại cầu với tỷ lệ thu nhỏ: cầu dây văng; cầu dầm giản đơn BTCT; cầu dầm giản đơn; cầu liên tục	Bridge models for cable stay bridge, simple concrete beam bridge, continuous bridge	1 set	

Proposed by Phung Ba Thang

PROPOSAL TO IMPROVE CURRICULUM

SUBJECT: BRIDGE CONSTRUCTION

Full name: Le Ngoc Ly
Qualification: Master, PhD student in bridge.
Organization: Bridge Division
Teaching subject: Bridge Construction
Years of experience: 3 years (bridge construction site experience) and 8 years of teaching.

Bridge Construction is one of the main subjects in the Bridge and Road Construction as the training target of the College is to provide employees with good capability in construction. Bridge construction includes many work aspects such as survey, construction planning and construction management, etc... for a variety of works items such as construction of abutments and piers, construction of steel bridge structure, reinforced concrete bridge, cantilever balanced bridges, pre-stressed reinforced concrete bridges, etc. Therefore the study of bridge construction does not only take place on college campus but also on site training.

In order to help students familiarize with equipments and machineries in bridge construction to apply the knowledge gained in College to actual situation on site, I would like to propose that the Project supplies the followings:

- Curriculum and text books from developed countries.
- New teaching and evaluation methods
- Improvement of foreign language skills: multimedia lab.
- Auditorium specialized for bridge construction subject.
- Equipment for practice teaching:

Proposed by
Signed
Le Ngoc Ly

Họ và tên: Lê Ngọc Lý
Đơn vị công tác: Tổ Cầu
Trình độ: Thạc sỹ- NCS
Chuyên ngành: Cầu
Môn giảng dạy: Xây dựng cầu
Kinh nghiệm thực tiễn: 3 năm thi công cầu
Kinh nghiệm giảng dạy: 8 năm

Đề xuất cho môn Xây dựng Cầu Xây dựng cầu là môn học chính của Ngành xây dựng cầu đường vì mục tiêu đào tạo của Nhà trường là đào tạo những cán bộ giỏi thi công. Xây dựng cầu gồm nhiều công tác như: Đo đạc, tổ chức thi công, quản lý xây dựng...những phương pháp công nghệ cụ thể như xây dựng móng trụ, xây dựng kết cấu nhịp cầu thép, cầu BTCT, cầu đúc hẫng, cầu BTCT DUL... Vì vậy xây dựng cầu không những được học tập ở trong nhà trường mà còn học rất nhiều trên các địa bàn thực tập và bên ngoài trường.

Nhằm mục đích giúp sinh được tiếp cận với những máy móc, thiết bị trong công tác thi công, xây dựng cầu. Sau khi tốt nghiệp, đi làm có thể áp dụng kiến thức đã được trang bị ở Nhà trường vào thực tiễn. Kính mong đoàn công tác tạo điều kiện trang bị cho chúng tôi các vấn đề sau:

- Chương trình, giáo trình đào tạo của các nước phát triển;
- Phương pháp giảng dạy, đánh giá mới;
- Nâng cao năng lực ngoại ngữ: Phòng học tiếng
- Phòng học chuyên dùng cho môn xây dựng cầu;
- Thiết bị giảng dạy thực hành:

No.	Equipment (Vietnamese)	Equipment (English)	Equipment (English)	Quantity	Priority
1	Bộ neo cáp dự ứng lực	Anchor Concordant Tendon	Pre-stressed cable anchorage	2	1
2	Kích thủy lực	Hydraulic jack	Hydraulic jack	6	1
3	Cáp dự ứng lực	Concordant Tendon	Pre-stressed cables	6	1
4	Bộ thiết bị khoan cọc nhồi		Cast-in-place pile drilling equipment set	1	1
5	Dầm bê tông cốt thép U, I, T	Reinforced Concrete Beam U, I, T	Reinforced Concrete Beam U, I, T	3	2
6	Đầm dùi	Reedle vibrator	Riddle vibrator	2	2
7	Cần trục	Guntory crane	Gantry crane	1	2
8	Búa diesel đóng cọc		Diesel pile driving hammer	1	2
9	Búa ép, nén cọc		Pile compressor	1	2
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16	Xe đúc (đúc hẫng kết cấu nhịp)		Cast-in-situ machine (for casting structure)	2	3
17	Xe gồng chở dầm		Beam wagon	2	3

COLLEGE OF TRANSPORT
CONSTRUCTION FACULTY

PROPOSAL TO IMPROVE CURRICULUM
SUBJECT: BRIDGE DESIGN

Full name: Phung Ba Thang
Qualification: Master, PhD student in bridge.
Years of experience: 10 years.

In order to improve the training quality for the Bridge Design subject in the Road and Bridge Construction course, I would like to propose to your team the followings:

- Increase the practice lecture time on the design software on computer from 16 school hours to 30 school hours.
- Provide additional lectures on the new modern bridge design software.
- Provide “electronic lectures” (using projectors).
- Feedback evaluation of lecturers by students
- Replace the traditional examination format with the multiple choice examination on computers to ensure the objectiveness of the exams and provide students with results right after exams.
- Provision of practice lecture equipments as follows:

	Specialized class room includes:	Qty	Priority
1	Computers	25	1
2	Softwares for Bridge Design(Midas, sap, RM)	1 set	1
3	Projector	1	2
4	A0, A1, A3, A4 Printers	1 set	2
5	Sound system	1 set	
6	Bridge models for cable stay bridge, simple concrete beam bridge, continuous bridge	1 set	

Họ tên: Phùng Bá Thắng
Trình độ: Thạc sỹ-NCS
Môn giảng dạy: Thiết kế cầu
Kinh nghiệm: 10 năm

KIẾN NGHỊ NÂNG CAO CHẤT LƯỢNG ĐÀO TẠO MÔN THIẾT KẾ CẦU
Nhằm nâng cao chất lượng đào tạo môn Thiết kế Cầu ngành xây dựng cầu đường, tôi xin đề xuất với quý đoàn một số ý kiến như sau:

- Tăng khối lượng giảng dạy thực hành sử dụng phần mềm thiết kế trên máy tính từ 16 tiết lên 30 tiết;
- Giảng dạy thêm các phần mềm thiết kế Cầu mới hiện có trên thế giới;
- Sử dụng bài giảng điện tử (dùng máy chiếu) trong quá trình giảng dạy;
- Cần đánh giá giảng viên thông qua sinh viên;
- Thay đổi phương thức thi truyền thống bằng hình thức thi trắc nghiệm trên máy để đảm bảo tính khách quan, sinh viên có thể biết kết quả thi ngay sau khi kết thúc buổi thi;
- Tăng cường trang thiết bị giảng dạy thực hành:

STT	Tên thiết bị	Đơn vị	Số lượng	Ghi chú
1	Máy tính	Bộ	25	
2	Phần mềm thiết kế cầu	bộ	1	Midas, Sap, RM
3	Máy chiếu	Chiếc	1	
4	Máy in các loại	bộ	1	
5	Thiết bị âm thanh	bộ	1	
6	Mô hình các loại cầu với tỷ lệ thu nhỏ: cầu dây văng; cầu dầm giản đơn BTCT; cầu dầm giản đơn; cầu liên tục	bộ	1	

Proposed by
Phung Ba Thang

Full name: Nguyen Duc Tuyen
Qualification: Master.
Position: Vice Dean of the Construction Faculty
Teaching subject: Bridge Inspection
Years of bridge inspection experience: 5 years (Hoang Long Bridge – Thanh Hoa; Lac Quan Bridge – Nam Dinh; Luong Muc Bridge – Thanh Hoa; Thuan Phuoc Bridge – Da Nang; Bai Chay Bridge – Quang Ninh...)
Years of teaching experience: 13 years

Bridge Inspection is an indispensable part in the bridge construction works. Bridge Inspection is carried out on both old bridges and newly-constructed bridges. Through the inspection and the loading test of the bridges we can evaluate the loading capacity of the bridge compared with the design and detect the defects during construction in order to apply timely and suitable remedies or maintenance and operation schemes if necessary. Bridge inspection is also carried out for the researching purpose to improve the calculation theory, methods and material inspections...

In order to improve the training quality for the bridge inspection subject and provide the students with the best practice conditions possible, I would like to propose the followings:

- The target of the college is towards the practice with focus on the skills for construction, maintenance, repair and assessment of the bridge loading capacity. The college graduates will participate directly in the bridge construction sites. Therefore, my proposal is as follows:

No.	Items of proposals	Target
I.	Curriculum and textbooks	Update curriculum and textbooks according to the advanced and

Họ và tên: Nguyễn Đức Tuyền

Chức vụ: Phó trưởng khoa Công trình

Trình độ: Thạc sĩ

Môn học giảng dạy: Kiểm định cầu

Kinh nghiệm về kiểm định cầu: 5 năm (cầu Hoàng Long-Thanh Hoá; cầu Lạc Quần- Nam Định; cầu Lương Mục- Thanh Hoá; cầu Thuận Phước – Đà Nẵng; cầu Bãi Cháy- Quảng Ninh...)

Kinh nghiệm giảng dạy: 13 năm

Kiểm định cầu là một phần không thể thiếu trong công tác xây dựng công trình cầu. Công tác kiểm định cầu được tiến hành trên cả cầu cũ và cầu mới xây dựng. Thông qua việc kiểm định, thử tải cầu người ta mới đánh giá được khả năng chịu tải của cầu so với thiết kế, đồng thời cũng có thể phát hiện ra những sai sót trong khi thi công để kịp thời khắc phục và nếu cần thì kiến nghị chế độ khai thác, duy tu bảo dưỡng thích hợp. Thử nghiệm cầu cũng được tiến hành nhằm phục vụ công tác nghiên cứu, nhằm hoàn thiện lý thuyết tính toán, phương pháp tính toán, kiểm tra vật liệu...

Nhằm nâng cao chất lượng đào tạo môn kiểm định cầu ngành xây dựng cầu đường, giúp cho sinh viên có những điều kiện thực hành tốt nhất, tôi xin đề xuất một số ý kiến như sau:

- Do mục tiêu đào tạo của Trường là theo hướng thực hành, tập trung vào các kỹ năng thi công, bảo dưỡng, sửa chữa cầu, đánh giá năng lực chịu tải của cầu. Sinh viên sau khi tốt nghiệp ra trường sẽ trực tiếp làm việc tại các công trường xây dựng cầu, vì vậy tôi xin đề nghị một số vấn đề sau:

STT	Nội dung đề xuất	
I.	Chương trình, giáo trình đào tạo	Cập nhật chương
II.	Đào tạo chuyển giao công nghệ, nâng cao trình độ giảng viên	Tham gia các k

		modern curriculum
II.	Training for technology transfer and improvement of teachers' standard	Participate in training courses; seminars, conferences, study tours
III.	Foreign language	Improve lecturers' foreign language level to facilitate the learning and receiving of new technologies
IV.	Main equipment to improve training quality for bridge inspection subject	

		Qty	Priority
1	Concrete Ultrasonic Machine	1	1
2	Welding joint sonic testing equipment		
3	Equipment to measure concrete crack width	1 set	1
4	Lever Tenzomet	10	1
5	Equipment for locating and testing the thickness of the concrete cover layer (Sonic)	1	2
6	Dynamic Stress Apparatus	1	2
7	Stress Due To Dead loads	2	2
8	Oscillograph	1	3
9	Deflection Measuring Apparatus of Bridge Span Structure by Laser	1	3

Thank you to JICA team for your consideration.

Xin cảm ơn sự quan tâm của Đoàn chuyên gia JICA!

III.	Ngoại ngữ	Nâng cao trình độ điều ki
IV.	Thiết bị cơ bản cần	có để nâng cao chất
TT	Loại thiết bị	Đơn vị
1	Máy siêu âm bê tông	bộ
2	Máy siêu âm môi hàn	bộ
3	Thiết bị đo bề rộng vết nứt bê tông	bộ
4	Tenzomet đòn	chiếc
5	Máy định vị và kiểm tra chiều dày lớp bảo vệ cốt thép trong bê tông	bộ
6	Thiết bị đo ứng suất tĩnh và động	bộ
7	Thiết bị đo dao động	bộ
8	Thiết bị đo độ võng động của kết cấu nhịp cầu	bộ
9	Thiết bị định vị độ chính xác cao	bộ

Proposed by
Signed
Nguyen Duc Tuyen

PROPOSAL TO IMPROVE CURRICULUM SUBJECT: GEODESY

<p>Full name: Nguyen Quang Hung Qualification: Engineer Position: Chief of Geodesy Division Teaching subject: Geodesy Years of experience: 31 years</p> <p>I hereby would like to propose the followings in order to improve the training quality for Geodesy subject in the College and to narrow the gap between training and actual construction demands:</p> <ol style="list-style-type: none">1. Curriculum and text books:<ul style="list-style-type: none">- Surveying and calculating skills are important in the survey and design of roads and bridges. The accuracy and reliability of the survey results will be one of the criteria to assess the quality of the design. Therefore it is proposed to increase the number of unit blocks for Geodesy from 4 blocks to 5 blocks.- Increase the practice teaching time from 16 school hours to 30 school hours.- Supplement the new knowledge on computerized total station, GPS and data processing with specialized software.- Improve and prepare a modern curriculum in reference with curriculums from developed countries.2. Training and evaluation methods<ul style="list-style-type: none">- Apply the advanced student-focused teaching methods.- Apply the feedback evaluation of lecturers by students.- Improve the students' results assessment methods3. Supplement and upgrading of equipment for practice teaching:4. Improvement of researching and self-study to improve capacity: With target to master the modern surveying methods and techniques and to process the data on the specialized software.	<p>Họ tên: Nguyễn Quang Hung Trình độ: Kỹ sư Chức vụ: Tổ trưởng bộ môn Trắc địa Môn giảng dạy: Trắc địa Kinh nghiệm: 31 năm</p> <p>Để nâng cao chất lượng đào tạo môn Trắc địa ngành xây dựng cầu đường, thu hẹp khoảng cách giữa đào tạo tại Nhà trường và thực tế sản xuất, tôi xin đề xuất một số ý kiến như sau:</p> <ol style="list-style-type: none">1. Chương trình, giáo trình đào tạo:<ul style="list-style-type: none">- Trong công tác khảo sát, thiết kế công trình cầu đường, thì kỹ năng về đo đạc là rất quan trọng, độ chính xác và tin cậy của kết quả đo sẽ là thước đo đánh giá chất lượng thiết kế công trình do đó kiến nghị chương trình đào tạo cần bổ sung thêm khối lượng cho học phần Trắc địa từ 4 đơn vị học trình lên thành 5 đơn vị học trình;<ul style="list-style-type: none">- Bổ sung khối lượng giảng dạy thực hành từ 16 tiết lên 30 tiết;- Bổ sung các kiến thức mới về toàn đạc điện tử, định vị GPS, xử lý số liệu bằng phần mềm chuyên dụng;- Đổi mới, xây dựng giáo trình giảng dạy tiên tiến trên cơ sở tham khảo giáo trình của các nước phát triển.2. Phương pháp giảng dạy, đánh giá:<ul style="list-style-type: none">- Sử dụng phương pháp giảng dạy tiên tiến, lấy người học làm trung tâm;- Cần đánh giá giảng viên thông qua sinh viên;- Đổi mới phương pháp đánh giá kết quả học tập của sinh viên.3. Tăng cường trang thiết bị giảng dạy thực hành:4. Tăng cường công tác học tập nâng cao trình độ: tiếp cận được các phương pháp, kỹ thuật đo đạc hiện đại, xử lý số liệu khảo sát trên phần mềm chuyên dụng.
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PROPOSAL TO IMPROVE CURRICULUM SUBJECT: GEODESY

STT	Tên thiết bị	Đơn vị	Số lượng	Trình độ công nghệ	Ưu tiên tăng cường
1	Máy toàn đạc điện tử	Chiếc	5	Hiện đại	1
2	Máy thủy bình tự động	Chiếc	5	Hiện đại	1
3	Thiết bị định vị GPS	bộ	5	Hiện đại	2
4	Phần mềm chuyên dụng	Chiếc	1	Hiện đại	2
5	Các thiết bị phục vụ bảo dưỡng, sửa chữa, hiệu chỉnh nhỏ máy trắc địa	Bộ	1	Hiện đại	3
6	Máy đo khoảng cách bằng Laser	Chiếc	5	Hiện đại	4

Vietnamese	English	Qty (individual request)	Qty (request)	Priority
Máy toàn đạc điện tử	Total Station	5	4	1
Máy thủy bình điện tử	Leveling instrument	5	3	1
Thiết bị định vị GPS	Global Positioning System	5	3	1
Máy đo khoảng cách	Distance Measuring Apparatus	5	5	2
Phần mềm chuyên dụng	Professional Software	1		
Thiết bị phục vụ sửa chữa, hiệu chỉnh nhỏ máy trắc địa	Maintenance and minor adjusting device for geodimeter	5		

PROPOSAL TO IMPROVE CURRICULUM SUBJECT: GEO-TECHNIQUE

Full name: Nguyen Van Dang
Qualification: Master
Field: Geo-technique
Years of experience: 8 years
Organization: Construction Department – College of Transport

Subject: Proposal to improve training quality for geo-technique subject; bridge and road construction course

All construction works are located above or under ground. The stability and operation ability do not only depend only on the structural durability of the works itself but also the characteristics of the soil, rocks and geological phenomena. The bigger and the more durable the works is, the more important and decisive this inter-dependability is. Therefore it is necessary to study the science of engineering geology.

Engineering Geology is under the science of Geology with researches and applications in geology for engineering construction. This science was originated to meet the demand of the construction. Researching targets of the engineering geology is rock and soil; underground water and the inter-impact and relations among underground water with rock and soil and the surrounding environment. That is the reason why the researching targets of engineering geology are always changing.

Due to the importance of the engineering geology in construction, I would like to propose to JICA team to supply the following equipments in order to provide the students with a base of knowledge on geology to apply to construction, testing works on site after graduate:

- Equipment for theory teaching: Projector, sound system.
- Equipment for practice and testing:

Proposed by
Signed
Nguyen Van Dang

Họ tên: Nguyễn Văn Đăng

Trình độ: Thạc sỹ

Lĩnh vực: Địa kỹ thuật

Kinh nghiệm: 8 năm

Địa chỉ: Khoa Công trình-CD GTVT

Về việc: Đề xuất nâng cao chất lượng đào tạo lĩnh vực địa kỹ thuật công trình ngành xây dựng cầu đường

Tất cả các công trình xây dựng đều nằm trên hay dưới mặt đất. Khả năng ổn định và làm việc bình thường của công trình không những phụ thuộc vào độ bền kết cấu của bản thân mà còn phụ thuộc rất nhiều vào tính chất của đất đá, các hiện tượng địa chất. Công trình càng lớn, càng tồn tại lâu bao nhiêu thì sự phụ thuộc đó càng chặt chẽ và có ý nghĩa quyết định bấy nhiêu. Vì vậy chúng ta cần phải nghiên cứu khoa học địa chất công trình.

Địa chất công trình là khoa học địa chất, chuyên nghiên cứu và vận dụng các tri thức về địa chất vào xây dựng các công trình. Đó là một môn khoa học phát sinh do yêu cầu của xây dựng. Đối tượng nghiên cứu của địa chất công trình là đất đá, nước dưới đất và tác dụng qua lại của đất đá, nước dưới đất với nhau và với môi trường xung quanh. Do đó đối tượng nghiên cứu của địa chất công trình luôn thay đổi.

Chính vì vậy sự quan trọng của môn địa chất công trình trong xây dựng, nên nhằm giúp sinh viên có một nền kiến thức về địa chất, có thể áp dụng kiến thức đã học vào thực tiễn sản xuất, trực tiếp tiến hành được các thí nghiệm, các phương pháp thi công xây dựng và hoàn thành xuất sắc nhiệm vụ được giao. Tôi xin kiến nghị đoàn công tác tạo điều kiện trang bị các thiết bị cơ bản sau:

- Tăng cường thiết bị phục vụ đào tạo về lý thuyết: Máy chiếu, thiết bị âm thanh;

- **Thiết bị thực hành, thí nghiệm:**

PROPOSAL TO IMPROVE CURRICULUM SUBJECT: GEO-TECHNIQUE

No.	Vietnamese	English	Qty	Priority
1.	Bộ thiết bị khoan địa chất	Geology Drill Apparatus	1	1
2.	Bộ thí nghiệm xuyên động nhẹ	Dynamic penetration test equipment	1	1
3.	Bộ mẫu các khoáng vật	Mineral Sample Set	1	1
4.	Vải địa kỹ thuật	Geotextile	1	1
5.	Thiết bị xác định độ dày vải địa kỹ thuật	Geotextile thickness	1	1
6.	Thí nghiệm xác định cường độ vải địa kỹ thuật	Geotextile tensile test	1	1
7.	Sàng ướt xác định hệ số thấm vải địa kỹ thuật	Geotextile Wet Sieving	1	1
8.	Các phụ kiện kèm theo vải địa kỹ thuật	Geotextile Attachment	1	1
9.	Các phụ kiện kèm theo vải địa kỹ thuật 35IG	Geotextile Attachment 35IG	1	1
10.	Bộ thiết bị thí nghiệm cắt cánh hiện trường	Shearing test equipment	1	2
11.	Bộ thiết bị xuyên tĩnh, 10T	Static penetration test equipment (10T)	1	2

RECOMMENDATIONS ON IMPROVEMENT OF TRAINING CAPACITY FOR ROAD CONSTRUCTION DIVISION

Name	Hoang Dinh Hong
Education qualification	Master, Major Lecturer
Position	Vice Chief of Construction Faculty
Subject in-charge	Road Construction
Experience	35 years

<p>Road construction requires various works varying from foundation, pavement works, other road works (culvert, etc.), protection facilities, road accessories, walk-way, the-handicapped-way, underground works, square, etc.</p> <p>Motorway construction requires the employments of various machinery and equipment and human resources. For efficient construction works, the application of new technology, the machinization, application of chain construction technology, etc. must be set first priority. The construction efficiency improvements will help reduce construction period, early putting the road into operation, reducing gaps between localities and contributing to the country development.</p> <p>However, smooth operation of road construction machinery is a difficulty which requires huge time and effort. The current facilities and equipment at the COT can not support the improvement of curriculum towards advance orientation.</p> <p>Therefore, for the students to promptly operate road construction machinery upon their commencement at site, I would like to propose JICA supports for following basic equipment:</p> <p>Moreover, to facilitate the receipt and employment of technology, I would like to propose that lecturers should be trained to improve their professional capacity and foreign language capacity.</p>	<p>Xây dựng đường ô tô là một công tác cần nhiều công việc khác nhau như xây dựng nền đường, mặt đường, các công trình khác thuộc đường (cống...) các công trình phòng hộ, trang trí đường, đường dành cho người đi bộ, người khuyết tật, hay công trình ngầm, quảng trường...</p> <p>Công tác xây dựng đường ô tô cũng cần sử dụng rất nhiều các phương tiện máy móc và lực lượng lao động. Để xây dựng công trình đường có hiệu quả thì việc áp dụng những công nghệ mới, cơ giới hoá, áp dụng phương pháp thi công dây chuyền...được chú trọng đầu tiên. Tăng hiệu quả trong công tác xây dựng đường sẽ rút ngắn tiến độ thi công, nhanh chóng đưa công trình vào sử dụng, thu hẹp khoảng cách giữa các vùng miền, góp một phần không nhỏ vào sự phát triển của đất nước và toàn xã hội.</p> <p>Tuy nhiên để có thể sử dụng được thành thạo các loại máy thi công đường là một điều khó khăn, đòi hỏi thời gian và sức lực rất lớn. Khi thay đổi chương trình đào tạo, giáo trình đào tạo tiên tiến thì với thực trạng trang thiết bị hiện có của Nhà trường hiện nay, chưa đáp ứng được yêu cầu này.</p> <p>Do đó, nhằm giúp sinh viên sau khi ra trường có thể trực tiếp vận hành, sử dụng những loại máy thi công đường, có thể hoàn thành tốt nhiệm vụ được giao. Tôi xin kiến nghị đoàn công tác tạo điều kiện trang bị các thiết bị cơ bản sau:</p> <p>Ngoài ra để có khả năng vận hành, tiếp nhận công nghệ, kiến nghị đoàn công tác tạo điều kiện để giảng viên có điều kiện học tập nâng cao trình độ chuyên môn và ngoại ngữ</p>
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PROPOSAL TO IMPROVE CURRICULUM SUBJECT: HYDRAULICS & HYDROLOGY

<p>Full name: Nguyen Minh Khoa Qualification: Master. Organization: Construction Department Teaching subject: Hydraulics and Hydrology Years of experience: 05 years.</p>	<p>Họ tên: Nguyễn Minh Khoa Trình độ: Thạc sỹ Đơn vị công tác: Khoa Công trình Chuyên ngành: XDCTGT Môn giảng dạy: Thủy lực – Thủy văn Kinh nghiệm giảng dạy: 05 năm</p>
<p>Hydraulics – Hydrology is a general professional subject in the curriculum for the Road and Bridge Construction Technology course. With my own experience of 4 years in transport and irrigation construction works, I would like to propose to the Team the followings:</p> <p>As the College targets training towards the technology practice and construction and maintenance skills, the college graduates will participate directly in the work on the construction sites, the lectures in Hydraulics-Hydrology Subject only need to cover the most basic knowledge for the students.</p> <p>The training program needs to focus on the necessary basic practice skills so the graduates can utilize this knowledge in their works later. These skills include skill for depth measurement, current velocity measurement, determination of water volume through open channel, etc.</p> <p>To improve the training quality to enable the students to master these skills the equipments are necessary. However the College hasn't been provided with the equipments for these practices. I would like to propose to the Team the following basic equipments:</p> <p>Proposed by Signed Nguyen Minh Khoa</p>	<p>Thủy lực- Thủy văn là môn học cơ sở chuyên ngành trong chương trình đào tạo ngành công nghệ xây dựng cầu đường, bản thân với kinh nghiệm 04 năm ngoài thực tiễn sản xuất, đã triển khai một số công trình xây dựng công trình thủy lợi, giao thông, tôi xin đề xuất với Quý đoàn một số nội dung sau:</p> <ul style="list-style-type: none"> - Do mục tiêu đào tạo của Trường là theo hướng thực hành công nghệ, tập trung vào các kỹ năng thi công, bảo dưỡng, sửa chữa cầu đường, sinh viên sau khi tốt nghiệp ra trường sẽ trực tiếp làm việc tại các công trường xây dựng, do đó đối với môn học Thủy lực - Thủy văn chỉ cần trang bị những kiến thức cơ bản nhất cho sinh viên. - Tuy nhiên trong chương trình môn học, giáo trình cần bổ sung, nhấn mạnh các kỹ năng thực hành cần thiết, cơ bản nhất về thủy lực, thủy văn cho sinh viên để sau khi ra trường sinh viên có thể vận dụng được phục vụ công tác chuyên môn, cụ thể các kỹ năng cần thiết đó là: kỹ năng đo sâu, đo lưu tốc dòng chảy, xác định lưu lượng nước qua kênh hở... <p>Để nâng cao chất lượng đào tạo, sinh viên học môn học này cần thực hiện được các kỹ năng trên thì cần phải có các thiết bị thí nghiệm, thực hành, tuy nhiên hiện nay Nhà trường chưa được trang bị nên đây là một vấn đề khó khăn trong công tác giảng dạy môn Thủy lực- Thủy văn. Kiến nghị đoàn công tác tạo điều kiện trang bị các thiết bị cơ bản sau:</p> <ul style="list-style-type: none"> - Phòng học chuyên dùng <ol style="list-style-type: none"> 1. Thiết bị đo lưu tốc dòng chảy, số lượng 05 chiếc; 2. Thiết bị đo sâu hồi âm, số lượng 05 chiếc; 3. Thiết bị nghiên cứu dòng chảy trong kênh hở, số lượng 01 bộ. <p>Xin cảm ơn sự tiếp nhận thông tin từ Quý đoàn!</p>

	Thủy lực-Thủy văn	(Hydraulics-Hydrography)	Quantity	Priority
1	Máy đo lưu tốc dòng chảy	Flow Measuring apparatus	5	1
2	Máy đo mực nước hồi âm	Depth measuring apparatus	5	1
3	Phòng học chuyên dùng	Specialized class room	1	2
4	Thiết bị nghiên cứu dòng chảy trong kênh hở kết nối máy tính	Computer-linked equipment to study flow in open channel	1	3

PROPOSALS ON IMPROVEMENT OF TRAINING QUALITY FOR FOUNDATION AND PAVEMENT DIVISION

Name	Ngo Quoc Trinh
Working division	Foundation and Pavement Division- Construction Faculty
Education qualification	Master- Taking doctorate course
Subject in-charge	Foundation and Pavement
Experience	10 years

<p>In order to improve the training quality of Foundation and Pavement division (Road and Bridge Construction) so that the students can sufficiently approach to their actual works, I would like to have some proposals as follows:</p> <p>Regarding the curriculum, teaching materials In the road and bridge design and construction, foundation and pavement keep a vital role. The foundation stability and rigidity can ensure the work lifetime and safety. Presently, there're new technologies in the fields of foundation and pavement construction all over the world, especially in expressway construction field. In Vietnam, roads and bridges are mainly based on soft soil, therefore, the preparation of foundation and pavement is a vital task which mainly employs pile foundation system. In order to help the student easily approach to new technology and new evaluation method, the curriculum should be amended with some contents as follows:</p> <ul style="list-style-type: none"> - To revise, amend the curriculum based on the curriculum of advanced countries; - To change teaching method towards the combination between theory teaching and actual experience so that the students can promptly approach their task; - To increase time for self-study so that the students can improve their research capacity; <p>Regarding teaching and evaluation method</p> <ul style="list-style-type: none"> - To apply new teaching method from advanced countries with the learners treated as the center; - To evaluate the lecturers after each semester through students feedbacks. <p>Facilities for testing, practical teaching</p>	<p>Để nâng cao chất lượng đào tạo môn Nền và móng ngành xây dựng cầu đường, giúp sinh viên sau khi ra trường có thể tiếp cận tốt với công việc, tôi xin đề xuất một số ý kiến như sau:</p> <ul style="list-style-type: none"> - Về phương trình, giáo trình đào tạo: - Trong công tác thiết kế, thi công công trình cầu đường, nền móng đóng một vai trò rất quan trọng. Độ ổn định và vững chắc của nền móng càng cao sẽ giúp cho tuổi thọ và độ an toàn của công trình càng lớn. Hiện nay, trên thế giới có nhiều công nghệ mới trong lĩnh vực nền và móng công trình đặc biệt trong xây dựng công trình đường cao tốc. Ở Việt Nam các công trình cầu, đường chủ yếu được xây dựng qua các khu vực đất yếu nên công tác xử lý nền móng là rất quan trọng, chủ yếu xử lý bằng hệ thống móng cọc do đó để sinh viên sau khi ra trường có thể tiếp cận được với công nghệ mới, phương pháp đánh giá mới thì chương trình đào tạo cần phải bổ sung một số vấn đề sau: + Xây dựng, bổ sung giáo trình trên cơ sở giáo trình của các nước phát triển trên thế giới. + Thay đổi phương pháp giảng dạy, gắn lý thuyết với thực tiễn để sinh viên ra trường làm được việc ngay. + Tăng thời gian tự học để sinh viên phát huy khả năng nghiên cứu của mình. <p>Về phương pháp giảng dạy, đánh giá:</p> <ul style="list-style-type: none"> + Áp dụng phương pháp giảng dạy mới ở nhiều nước tiên tiến trên thế giới, lấy người học làm trung tâm; + Đánh giá giảng viên qua từng học kỳ, bằng cách phát phiếu điều tra đến sinh viên; <p>Về thiết bị thí nghiệm, giảng dạy thực hành</p>
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PROPOSALS ON IMPROVEMENT OF TRAINING QUALITY FOR SOIL MECHANICS DIVISION

Name	Ngo Thi Thanh Huong
Working division	Soil Mechanics, Construction Materials Division- Construction Faculty
Education qualification	Master
Position	Chief of Division
Professional field	Road and Bridge
Work experience	3 years
Teaching experience	7 years

<p>Soil Mechanics is a basic professional subject in the curriculum of road and bridge construction technology, which is an applied mechanics science on soil. Most of the works are positioned on earth surface with earth surface acting as the work foundation, some other projects such as road foundation, dikes, and dams use earth as a construction material. Therefore, in order to ensure the work sustainability, stability and quality, soil property must be understood accurately and comprehensively, which should be learnt through practices on determination of soil property. For the necessity of soil testing practice, I would like to propose some contents as follows:</p> <ul style="list-style-type: none"> - According to the existing curriculum volume with 3 blocks, theory part is sufficient; however, the school hours for practice can not meet the students' practice demand to conduct all the testing to determine soil mechanics and physics property. <p>In order to improve the training quality with the students having opportunity to practice such skills, facilities for testing, practice are required which is a difficulty being faced by the College. I would like to propose the support from JICA as follows</p>	<p>Cơ học đất là môn học cơ sở chuyên ngành trong chương trình đào tạo ngành công nghệ xây dựng cầu đường, đây cũng là một ngành cơ học ứng dụng chuyên nghiên cứu về đất. Hầu hết các công trình đều đặt trên mặt đất, dùng đất làm nền, các công trình khác như nền đường, đê, đập đất lại dùng đất làm vật liệu xây dựng. Do vậy muốn cho các công trình được tốt, bền và ổn định thì phải biết được chính xác và đầy đủ những đặc tính của đất. Muốn làm được điều này các bài thực hành về xác định những tính chất cơ lý của đất là rất quan trọng. Chính vì sự cần thiết của các bài thí nghiệm thực hành về đất, tôi xin đề xuất với Quý đoàn một số nội dung sau:</p> <ul style="list-style-type: none"> - Với khối lượng chương trình như hiện nay (3 đơn vị học trình) thì số giờ học lý thuyết là đủ, nhưng số giờ học thực hành chưa đáp ứng được nhu cầu để sinh viên có thể thực hiện thí nghiệm hết các bài thí nghiệm về chỉ tiêu cơ lý của đất. - Để nâng cao chất lượng đào tạo, sinh viên cần thực hiện được các kỹ năng trên thì cần phải có các thiết bị thí nghiệm, thực hành, tuy nhiên hiện nay Nhà trường chưa được trang bị nên đây là một vấn đề khó khăn trong công tác giảng dạy môn Cơ học đất. Kiến nghị đoàn công tác tạo điều kiện trang bị các thiết bị cơ bản sau
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PROPOSALS ON IMPROVEMENT OF TRAINING QUALITY FOR LABOR SAFETY DIVISION

Name	Nguyen Thi Loan
Working division	Labor Safety Division
Education qualification	Master
Professional field	Road and Bridge
Subject in-charge	Labor safety
Teaching experience	10 years

Labor Safety is a subject to study causes of labor accidents so that to improve labor conditions to ensure labor convenience and safety, prevent professional illness and damages to employees, for the purpose to protect the employee health and life, material property for the protection and development of labor force and improvement of productivity.

Labor Safety is an important task in construction projects, ranging from design, organization stage to construction, implementation stage. Any damages to property or human resource will cause legal responsibility to the employer and employee.

Labor Safety brings about joy and happiness to people, which has a profound human significance. Moreover, thanks to the caring to employee health, the labor safety is of good social effects and human meaning. In order to provide the students with a highly-secured environment in practical hours or internship periods and good knowledge on labor safety for their future working at site, I would like to have some proposals as follows:

Curriculum, teaching materials; teaching and evaluation method

- To amend knowledge on new and modern labor safety facilities to equip the graduates with firm knowledge background on labor safety so that they can ensure the safety for themselves and surrounding people;
- To renovate and formulate the curriculum in the combination of visual images with electronic lecture;
- To increase practical teaching hours from 8 school hours to 16 so that the students can get familiar with the specifications and operations of labor safety equipment.

An toàn lao động là môn học nghiên cứu những nguyên nhân gây ra tai nạn lao động để từ đó cải thiện điều kiện lao động, tạo điều kiện thuận lợi, an toàn trong lao động, ngăn ngừa bệnh nghề nghiệp, hạn chế ốm đau làm giảm sức khỏe cũng như các thiệt hại khác về người lao động, nhằm bảo vệ sức khỏe, đảm bảo an toàn tính mạng người lao động và cơ sở vật chất, góp phần bảo vệ và phát triển lực lượng sản xuất, tăng năng suất lao động.

An toàn lao động là nhiệm vụ quan trọng không thể thiếu trong các dự án xây dựng công trình, từ khâu thiết kế, điều hành đến triển khai thi công, xây dựng. Nếu để xảy ra thiệt hại về người hay vật chất thì cả người sử dụng lao động và người lao động sẽ đều phải chịu trách nhiệm trước pháp luật.

An toàn lao động mang lại niềm vui, hạnh phúc cho mọi người, vì vậy nó mang ý nghĩa nhân văn sâu sắc. Mặt khác, nhờ chăm lo sức khỏe của người lao động mà công tác an toàn lao động mang lại hiệu quả xã hội và ý nghĩa nhân đạo rất cao. Chính vì tầm quan trọng của an toàn lao động như vậy, để giúp sinh viên của Nhà trường có một điều kiện làm việc hết sức đảm bảo an toàn không chỉ trong những tiết thực hành, thực tập mà còn cả khi tốt nghiệp ra trường, đi làm trên các công trường xây dựng trên toàn đất nước. Tôi xin phép đưa ra một vài đề xuất ý kiến như sau:

- Kiến nghị về: Chương trình, giáo trình đào tạo, phương pháp giảng dạy, đánh giá
- Bổ sung kiến thức về các thiết bị bảo hộ lao động mới, hiện đại trên thế giới, giúp học sinh sau khi tốt nghiệp ra trường có một nền tảng kiến thức về an toàn lao động tốt, để có thể tự đảm bảo an toàn cho chính mình và những người xung quanh;
 - Đổi mới, xây dựng giáo trình giảng dạy gồm nhiều hình ảnh kết hợp với sử dụng bài giảng điện tử giúp học sinh – sinh viên ghi nhớ bài học trên lớp;
 - Tăng khối lượng giảng dạy thực hành từ 8 tiết lên 16 tiết để học sinh – sinh viên có thể làm quen và dần dần hiểu biết các tính năng, cách sử dụng của những thiết bị bảo hộ lao động;

PROPOSALS ON IMPROVEMENT OF TRAINING QUALITY FOR LABOR SAFETY DIVISION

<ul style="list-style-type: none"> - To evaluate the lecturer capacity through the students feedback - To improve method on student learning capacity evaluation <p>To strengthen the lecturers' professional capacity: to send the lecturers to domestic and international capacity improvement courses for their access to new knowledge and technology in the fields of labor safety.</p> <p>Teaching facilities:</p> <ul style="list-style-type: none"> - Classroom facilities: projector, audio system - Safety equipment for the students for their site participation - Labor safety equipment at construction site: working at height, stone and course aggregate works, underwater construction; - Testing equipment on temperature, humidity, dust concentration, noise level, wind velocity; - Testing equipment on pressure bearing capacity - Testing equipment on earthing resistance, electric-isolation and electric safety utensils - 3D projection chamber on electric safety - Equipment of fire prevention and fighting 	<ul style="list-style-type: none"> - Đánh giá giảng viên thông qua sinh viên; - Đổi mới phương pháp đánh giá kết quả học tập của sinh viên. <p>Kiến nghị về: Nâng cao trình độ chuyên môn của giảng viên Tạo điều kiện cho giảng viên đi học tập nâng cao trình độ trong nước và ngoài nước: để tiếp cận với các kiến thức, công nghệ mới trong lĩnh vực an toàn lao động.</p> <p>Kiến nghị về trang thiết bị phục vụ giảng dạy nâng cao chất lượng:</p> <ul style="list-style-type: none"> - Thiết bị giảng dạy trên lớp: Máy chiếu, thiết bị âm thanh - Trang thiết bị bảo hộ để sinh viên khi tham gia hiện trường - Các thiết bị an toàn cho người lao động tại công trường: Làm việc trên cao; thi công đất đá; thi công dưới nước; - Các thiết bị kiểm tra: nhiệt độ; độ ẩm; hàm lượng bụi; độ ồn; lưu tốc gió; - Máy kiểm tra thiết bị chịu áp lực - Thiết bị đo điện trở tiếp đất; cách điện; thiết bị an toàn điện - Phòng chiếu phim 3D về an toàn điện - Thiết bị an toàn về phòng cháy, chữa cháy
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PROPOSALS ON IMPROVEMENT OF TRAINING QUALITY FOR MATERIAL DURABILITY DIVISION

Name	Nguyen Thuy Anh
Education qualification	Master- Taking Doctorate course
Subject	Material Durability
Experience	7 years

<p>Material durability is an experimental science for the purpose to identify material reaction property against various forces. In order to improve the training quality of material durability division to help the students understand the acting nature of material durability for their application into actual works, I would like to have some proposals as follows:</p> <p>1. Curriculum, textbook, teaching methods and evaluation</p> <ul style="list-style-type: none"> - To supplement new international knowledge on materials and testing method into the curriculum, such as composite materials; - To revise, amend the curriculum with reference to advance curriculum from foreign countries; - To increase practical teaching from 10 school hours to 20. - To use computer-based lecture - Need for teacher evaluation from student feedback - To improve method of student learning capacity evaluation <p>2. To dispatch lecturers to domestic and abroad capacity strengthening courses to give them an access to new knowledge and technology, especially testing of material durability in bridge and expressway construction</p> <p>3. Improvement to teaching facilities It's necessary to improve the laboratory testing facilities to improve the teaching efficiency and quality of material durability division, as particularly proposed as follows:</p> <ul style="list-style-type: none"> - Teaching facilities: projector, audio equipment - Laboratory testing equipment 	<p>Sức bền vật liệu là một môn khoa học thực nghiệm. Nghiên cứu thực nghiệm nhằm phát hiện ra tính chất ứng xử của các vật liệu với những dạng chịu lực khác nhau. Nhằm nâng cao chất lượng đào tạo môn Sức bền vật liệu trong trường Cao đẳng GTVT, giúp sinh viên nắm vững được bản chất làm việc của vật liệu về tính bền đồng thời vận dụng được trong thực tế sau khi tốt nghiệp, tôi xin đề xuất một số ý kiến như:</p> <p>1. Chương trình, giáo trình đào tạo, phương pháp giảng dạy, đánh giá</p> <ul style="list-style-type: none"> - Bổ sung kiến thức về các vật liệu, phương pháp thử mới trên thế giới vào chương trình giảng dạy trong môn học như vật liệu composite; - Đổi mới, xây dựng giáo trình giảng dạy tiên tiến trên cơ sở tham khảo giáo trình của các nước phát triển; - Tăng khối lượng giảng dạy thực hành từ 10 tiết lên 20 tiết; - Sử dụng bài giảng điện tử; - Đánh giá giảng viên thông qua sinh viên; - Đổi mới phương pháp đánh giá kết quả học tập của sinh viên. <p>2. Cho giảng viên đi học tập nâng cao trình độ trong nước và ngoài nước: để tiếp cận với các kiến thức, công nghệ mới, đặc biệt là công tác thử nghiệm sức bền vật liệu dùng trong xây dựng cầu, đường cao tốc.</p> <p>3. Tăng cường trang thiết bị giảng dạy: Cần tăng cường thiết bị thí nghiệm để nâng cao hiệu quả, chất lượng công tác đào tạo môn SBVL, cụ thể đề xuất như sau:</p> <ul style="list-style-type: none"> - Thiết bị giảng dạy trên lớp: Máy chiếu, thiết bị âm thanh - Thiết bị thí nghiệm
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PROPOSAL ON IMPROVEMENT OF TRAINING CAPACITY FOR ROAD INSPECTION DIVISION

Name	Nguyen Van Doan
Education qualification	Master- Taking Doctorate course
Position	Chief of Road Division
Subject in-charge	Road Inspection
Experience	10 years

After the road completion, the first important work is road quality inspection. Qualified roads ensure the traffic convenience and safety and prevents traffic accidents. Inspection let us know the quality of input materials, which lays prerequisite foundation for the construction of qualified works, ensures project durability and saves construction price. Moreover, road inspection will assess the work performance, determine causes of damages, and lay a basis for determination of remaining operation time and appropriate rehabilitation, improvement alternatives.

Some major proposals:

- Revision and amendment to curriculum, teaching materials to supplement new knowledge, approaches in pavement inspection;
- Enhancement of practical capacity for students and lecturers
- Improvement on testing and inspection facilities to address above targets, particularly as follows:

COT's current equipment in the construction inspection laboratory can not suffice the practice and testing demand of the students. In order to enhance the training capacity of inspection division of road and bridge construction faculty, so that the graduate can promptly get on their work that saves re-training time at production companies and reduces the gaps between the college and actual production, I would like to propose some improvements to teaching facilities and practical facilities, as follows:

Sau khi hoàn thành công trình đường, việc cần thiết đầu tiên là phải đánh giá chất lượng của đường. Chất lượng đường tốt giúp cho người đi lại trên đường cảm giác an toàn, thư thái và trên hết là giảm thiểu đến mức tối đa những tai nạn giao thông có thể xảy ra trên đường. Kiểm định đường giúp ta biết được chất lượng các loại vật liệu đầu vào, tạo điều kiện tiên quyết để xây dựng các hạng mục công trình đúng chất lượng, tăng tính bền vững và giảm giá thành xây dựng. Hơn thế nữa, kiểm định đường sẽ đánh giá khả năng làm việc của công trình, xác định các nguyên nhân gây hư hỏng, là cơ sở để xác định thời gian khai thác còn lại, có các biện pháp sửa chữa, gia cố hoặc cải tạo đường.

Một số đề xuất chính như sau:

- Chính sửa, bổ sung chương trình, giáo trình giảng dạy để đưa các kiến thức, phương pháp mới trong đánh giá chất lượng mặt đường;
- Nâng cao năng lực thực hành cho sinh viên, giảng viên;
- Tăng cường thiết bị thí nghiệm, kiểm định để đáp ứng được mục tiêu trên, cụ thể:

Với hệ thống trang thiết bị hiện có trong phòng thí nghiệm kiểm định chất lượng công trình của Nhà trường như hiện nay, chưa thể đáp ứng nhu cầu thực hành, thí nghiệm của sinh viên của trường.

Vì vậy, để nâng cao chất lượng đào tạo môn kiểm định đường ngành xây dựng cầu đường, tạo điều kiện cho sinh viên sau khi ra trường có thể hoàn thành tốt công việc được giao, không phải mất thời gian đào tạo lại gây lãng phí cho công ty và xã hội, thu hẹp khoảng cách giữa đào tạo tại Nhà trường và thực tế sản xuất, tôi xin đề xuất một số ý kiến để tăng cường trang thiết bị phục vụ giảng dạy và thực hành như sau

PROPOSALS ON IMPROVEMENT OF TRAINING CAPACITY FOR ROAD DESIGN DIVISION

Name	Pham Van Huynh
Education Qualification	Master
Subject in-charge	Motorway Design
Experience	14 years

In order to improve the teaching capacity for the Road Design Division, I would like to propose as follows:

1. Curriculum and teaching materials:

- To increase the practical teaching on usage of computer-based design software from 16 school hours to 30 school hours.
- To provide further lecture on new road design softwares

2. Teaching method, teacher evaluation:

- Usage of computer-based lecture (represented via projector)
- Need for teacher evaluation from student feedback
- Change from traditional examination practice to computer-based multiple-choice examination to ensure the impartiality and allow immediate result information;

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3. Improvement to practical teaching facilities

Nhằm nâng cao chất lượng đào tạo môn Thiết kế Đường ngành xây dựng cầu đường, tôi xin đề xuất với quý đoàn một số ý kiến như sau:

1. Chương trình, giáo trình đào tạo:

- Tăng khối lượng giảng dạy thực hành sử dụng phần mềm thiết kế trên máy tính từ 16 tiết lên 30 tiết;
- Giảng dạy thêm các phần mềm thiết kế đường mới hiện có trên thế giới;

2. Phương pháp giảng dạy, đánh giá:

- Sử dụng bài giảng điện tử (trình chiếu bằng máy chiếu) trong quá trình giảng dạy;
- Cần đánh giá giảng viên thông qua sinh viên;
- Thay đổi phương thức thi truyền thống bằng hình thức thi trắc nghiệm trên máy để đảm bảo tính khách quan, sinh viên có thể biết kết quả thi ngay sau khi kết thúc buổi thi;

3. Tăng cường trang thiết bị giảng dạy thực hành

PROPOSALS ON IMPROVEMENT OF TRAINING QUALITY FOR CONSTRUCTION MATERIALS DIVISION

Name	Tran Thanh Ha
Working division	Soil Mechanics, Construction Materials Division- Construction Faculty
Position	Vice Chief of Soil Mechanics, Construction Materials Division
Subject in-charge	Construction Materials
Experience:	14 years

Construction materials is a basic professional subject in the curriculum on road and bridge construction technology. Construction materials are natural and man-made material incorporated together to create a construction work. Construction materials keep an especially important role which affect the duration and quality of construction works. Moreover, materials are closely related to construction price, which usually cover 74-75% of civil works, 70% of transport works, 50% of water resources works out of respective total prices. Therefore, in order to ensure technically and economically efficient usage of construction materials, good knowledge on composition, physical property, chemical property, mechanical property, and specific features is required to work out appropriate exploitation, manufacture, usage and storage methods.

In order to help the students understand properties of construction materials, laboratory testing and practice to determine the criteria is necessary. From that viewpoint, in order to improve training quality on road and bridge construction as general and construction materials as particular, I would like to propose following recommendations:

- Improvement to construction materials curriculum, particularly: technical update on materials, new testing methods appropriate for Vietnam conditions;
- Enhancement of practical knowledge to facilitate the understanding on natures of materials, sequence of testing, evaluation of material quality, as these are determent factors to construction quality and safety;
- Capacity strengthening for lecturers of construction materials division through training courses, technology transfer, guidance on storage, maintenance, operation of testing and practical equipment;

COT's current limited laboratory facilities can hardly fulfill above targets, therefore, I would like to propose the support of JICA as follows:

Vật liệu xây dựng là môn học cơ sở chuyên ngành trong chương trình đào tạo ngành công nghệ xây dựng cầu đường. Vật liệu xây dựng là những vật thể thiên nhiên hoặc nhân tạo được liên kết với nhau và tạo nên các công trình xây dựng. Vật liệu xây dựng chiếm một vị trí đặc biệt quan trọng, chất lượng của vật liệu có ảnh hưởng lớn đến chất lượng và tuổi thọ của công trình. Mặt khác sử dụng vật liệu xây dựng có liên quan mật thiết đến giá cả công trình, thông thường chi phí vật liệu chiếm khoảng 74%-75% đối với các công trình xây dựng dân dụng, 70% đối với các công trình giao thông, khoảng 50% đối với các công trình thủy lợi so với tổng giá thành công trình. Vì vậy để sử dụng vật liệu xây dựng đạt hiệu quả kinh tế và kỹ thuật ta cần phải hiểu rõ từng loại vật liệu xây dựng như cấu tạo, tính chất vật lý, hoá học, cơ học cũng như những tính chất đặc trưng khác của chúng để từ đó có các phương pháp khai thác, chế tạo, sử dụng và bảo quản hợp lý.

Để giúp sinh viên hiểu biết rõ những tính chất của vật liệu xây dựng, những bài thực hành giúp sinh viên xác định được các chỉ tiêu của vật liệu xây dựng là rất cần thiết. Tên cơ sở đó, để nâng cao chất lượng đào tạo ngành cầu đường nói chung và môn vật liệu xây dựng nói riêng, tôi xin đề xuất như sau:

- Trước tiên cần thay đổi chương trình đào tạo môn Vật liệu xây dựng, cụ thể là cập nhật các kiến thức mới về vật liệu, phương pháp thử mới phù hợp với điều kiện ở Việt Nam;
- Bổ sung kiến thức thực hành để sinh viên có thể hiểu rõ bản chất của vật liệu, các thao tác trong thí nghiệm, đánh giá chất lượng vật liệu xây dựng vì đây là những nhân tố quyết định đến chất lượng, sự an toàn của công trình cầu đường;
- Nâng cao năng lực của đội ngũ giảng viên giảng dạy môn Vật liệu xây dựng thông qua các khoá đào tạo, chuyển giao công nghệ, hướng dẫn bảo dưỡng, bảo trì, vận hành thiết bị thí nghiệm, thực hành;

Để đáp ứng mục tiêu trên, hiện nay cơ sở vật chất nhà phòng thí nghiệm vật liệu xây dựng của nhà trường vẫn còn thiếu thốn, vì vậy đây là một khó khăn trong công tác giảng dạy môn Vật liệu xây dựng.

Rất mong được sự giúp đỡ của đoàn công tác để tạo điều kiện cho Nhà trường được trang bị các thiết bị như sau

Recommendations on enhancing the training capacity for the College of Transport

Dr. Vu Ngoc Hien

1. Investment, capital mobilization

- To enhance the management and improvement of budget usage efficiency
- To promote educational socialization (privatization)
- To promote scientific research, technology transfer, provision of quality services as demanded by the society so that to improve the College income (provision of supervision consultant training, distant training, on-the-job training, etc)

2. Improvement of facility

- To ensure area and facility competent to the student number in accordance with Decision 121/2007/QĐ-TTg (college with 3,000 student should have an area of 6 hectare; 5,000 student 10 hectare and 7,000 students 15 hectares respectively)
- To establish electronic library being connected with other training institutions on the same area
- To establish global information network to promote international cooperation (with other institutions of the same training purpose)
- To develop construction technology experimental facility

3. Management enhancement

- To study on the revision and amendment of principles and regulations on organization and operations as to be responsive to social demand.
- To establish a human resource demand forecast program to provide statistical data and information on graduate qualification expectation.
- To organize the evaluation and periodical rating on faculty training performance
- To enhance the management on enrolment to ensure enrollment quality.

4. Development of lecturers' capacity:

- To increase the staff and enhance their capacity to attain the norms on rate of lecturer and student.
- To issue lecturer working regulation.
- To work out appropriate treatment regime for lecturers
- To work out the policy to attract the participation of scientists in research institutes to the College lecturing.
- To promote lecturers' production experience (in construction works)

5. Curriculum improvement

- To clearly define training goals so that to select appropriate subjects with reasonable training hours in accordance with training demand.
- To improve teaching methods to promote student autonomy
- To promote practical training efficiency in theory hours (lecturer capacity and production experience are required)