

NATIONAL BOARD FOR TECHNICAL EDUCATION



CURRICULUM AND COURSE SPECIFICATIONS

FOR

NATIONAL DIPLOMA (ND)

TRANSPORT PLANNING MANAGEMENT

MARCH, 2022

GENERAL INFORMATION

1.0 NATIONAL DIPLOMA (ND) IN TRANSPORT PLANNING MANAGEMENT

1.1 PROGRAMME GOAL

The programme is designed to produce personnel in Transport Planning Management, capable of assisting professionals in the transport industry.

PROGRAMME OBJECTIVES

At the completion of this programme the graduates should be able to:

- a Recognize roles of transport planning and management in National Development
- b Analyze the various modes of transport and their interrelationships
- c Outline the various level of transport planning, operation and management
- d Analyze types of transport facilities, problems and solutions.
- e Conduct traffic survey and plan basic transport facilities
- f Participate in the provision of basic transport infrastructure facilities
- g Manage small-scale transport enterprise, explore investment opportunities and communicate effectively.
- h Apply the basic models in transport planning using management information system (MIS)
- i Interpret the various laws and regulations guiding the operations and management in the transport systems.

2.0 ENTRY REQUIREMENTS

To qualify for admission into the National Diploma in Transport Planning Management, the candidate must meet any of the following entry requirements:

The West Africa School Certificate (SSCE), General Certificate of Education, Ordinary Level (GCE O' level), Senior Secondary Certificate (SSC), NECO or any other equivalent qualification with credit pass in English Language, Mathematics, and Geography/Economics, and any two from the following – Physics, Chemistry, Government/History, Technical Drawing, Biology/Agricultural Science/Health Science, Accounting/Book Keeping and Commerce, Government/History Business Studies Statistics Civic Education; Photography; Fisheries

3.0 STAFFING REQUIREMENT

3.1 Headship of the Department

The HOD should be at least a Senior Lecturer who has a minimum of second Degree in Transport Planning Management. He should have at least 5 years cognate experience and must be registered with relevant professional body.

3.2 Core Teaching Staff

At the point of mounting the programme, there should be a minimum of four Lecturers who should spread from Assistant Lecturer and above with first/second degrees (or equivalent) in Transport Planning Management.

3.3 Technical Staff

These are technically qualified staff not involved in direct lecturing/instructing, but who provide vital and indispensable services in implementation processes of the curriculum guide.

3.4 CAREER/ACADEMIC PROGRESSION

Academic Progression for National Diploma (ND) in Transport Planning Management

ND Graduates can proceed to:

1. HND/B.Sc/B.Tech Transport Planning and Management
2. HND/B.Sc/B.Tech Transport and Logistics Management
3. HND Transport Safety Technology
4. HND/B.Sc/B.Tech Project Management
5. HND Aviation Management
6. HND Maritime Management
7. HND/B.Sc/B.Tech Transport Management

Career Progression for National Diploma (ND) in Transport Planning Management

1. Transport Divisions of Ministries, Departments, and Agencies
2. Military and Para-Military Agencies
3. Government/Private companies
4. Academics and Research Institutes

3.5 DURATION

The duration of the programme is two academic sessions consisting of four semesters of 17 weeks each.

Foundation courses include courses in Geography, The number of hours for the courses may account for about 10-15% of the total contact hours.

Professional courses are core courses of the programme that give the student the theory and professional skills he/she needs to practice his/her field of calling at the Technologist level. These may account for between 70-80% of the contact hours.

3. 6 CURRICULUM STRUCTURE

The structure of the **National Diploma (ND) in Transport Planning Management** programme consists of four semesters of classroom, laboratory and workshop/field activities in the college as well as a semester (3 – 4 months) of Supervised Industrial Work Experience Scheme (SIWES). Each semester shall be 17 weeks of duration made up as follows:

- ✓ 15 contact weeks of registration, teaching (lecture, recitations, practical exercises/field work, Tests and quizzes)
- ✓ 2 weeks for Registration and Examination

SIWES shall take place at the end of the second semester of the first year at ND.

3.6.2 the curriculum of the National Diploma in Textile Technology consists of four main components:

- i. General studies/Education10% to 15%
- ii. Foundation Courses.....10% to 15%
- iii. Core Courses.....60 to 70%
- iv. Supervised Industrial Work Experience Scheme (SIWES).

4.0 PROJECT

Project shall be submitted at the end of second semester of final year at National Diploma

5.0 ACCREDITATION

Programme offered at the ND level shall be accredited by the NBTE before the diplomats can be awarded the diploma certificates. Details about the process of accrediting a programme for the award of the ND are available from the Executive Secretary, National Board for Technical Education, at Plot B, Bida Road, P.M.B. 2239; Kaduna, Nigeria.

5.1 CONDITIONS FOR THE AWARD OF THE National Diploma (ND) in Transport Planning Management

Institutions offering accredited programmes will award the National Diploma in Public Administration to a candidate who successfully completed the programme after passing prescribed course-work, examination, Diploma project and supervised Student Industrial Work Experience Scheme (SIWES). Such a candidate should have completed 90-100 credit unit. National Diploma certificate shall be awarded based on the following:

i) Grading of courses

The standardized unified grading system shall be as follows:

Marks Range	Letter Grade	Weighti ng
75% and above	A	4.0
70% - 74%	AB	3.50
65% - 69%	B	3.25

60% - 64%	BC	3.00
55% - 59%	C	2.75
50% - 54%	CD	2.50
45% - 49%	D	2.25
40% - 44%	E	2.00
Below 40%	F	0.0

ii) Classification of Diploma

Diploma Certificates shall be awarded based on the following Classifications:

CGPA	Class of Diploma
3.50 – 4.00	Distinction
3.00 – 3.49	Upper Credit
2.50 – 2.99	Lower Credit
2.00 – 2.49	Pass

6.0 GUIDANCE NOTES FOR TEACHERS OF THE PROGRAMME

- 6.1** The new curriculum is drawn in unit courses. This is in line with the provisions of the National Policy on Education, which stresses the need to introduce the semester credit units which will enable a student, who so wish, to transfer the units already completed in an institution of similar standard.

- 6.2** In designing the units, the principle of the modular system by product has been adopted, thus making each of the professional modules, when completed provides the student with Operational Administration skills, which can be used for divers administrative purposes.
- 6.3** The success of the credit unit system depends on the articulation of programmes between the institution and industry. The Curriculum content has been written in behavioural objectives, so that it is clear to all the expected performance of the student who successfully completed the courses or the diplomates of the programme.
- There is a slight departure in the presentation of the performance based curriculum which requires the conditions under which the performance is expected to be carried out and the criteria for the acceptable levels of performance. It is a deliberate attempt to further involve the Resource Persons of the department teaching the programme, to write their own curriculum stating the conditions existing in their institution under which the performance can take place and follow that with the criteria for determining an acceptable level of performance. The Academic Board of the institution may vet departmental submission on the final curriculum. Our aim is to continue to see to it that a solid internal Evaluation system exist in each institution for ensuring minimum standard and quality of education in the programmes offered throughout the polytechnic system.
- 6.4** The teaching of the theory and practical work should, as much as possible, be integrated. Practical exercises, especially those in professional courses and workshop/laboratory work should not be taught in isolation from the theory. For each course, there should be a balance of theory to practice in the ratio of 50:50 or 60:40 or the reverse.

7.0 GUIDELINE OF SIWES PROGRAMME

For the smooth operation of the SIWES, the following guidelines shall apply:

7.1 Responsibility for Placement of students

- a)** Institutions offering the ND programme shall arrange to place the students in industry by April 30 of each year, six copies of the list showing where each student has been placed shall be submitted to the Executive Secretary, NBTE which shall in turn, authenticate the list and forward it to the industrial training fund, Jos.
- b)** The placement Officer should discuss and agree with industry on the following:
 - i) A task inventory of what the students should be expected to experience during the period of attachment. It may be wise to adopt the one already approved for each field.
 - ii) The industry-based supervisor of the students during the period, likewise the institution based supervisor
It should be noted that the final grading of the student during the period of the attachment should be weighted more on the evaluation by his industry-based supervisor

7.2 Evaluation of students during the SIWES

In the evaluation of the student, cognizance should be taken of the following items:

- a) Punctuality**
- b) Attendance**
- c) General Attitude to Work**
- d) Respect for Authority**
- e) Interest in the Field/Organization's Operational area**
- f) Technical competence as a potential technician in his field**

7.3 Grading of SIWES

To ensure uniformity of grading scales, the institution should ensure that the uniform grading of student's work, which has been agreed to by polytechnics, is adopted.

7.4 The Institution Based Supervisor

The Institution-based supervisor should initiate the logbook during each visit. This will enable him to check and determine to extent the objective of the scheme are being met and to assist students having any problems regarding the specific assignments given to them by their industry-based supervisor.

7.5 Frequency of Visit

Institution should ensure that students placed on attachment are visited within one month of their placement. Other visits shall be arranged so that:

- 1) There is another visit six weeks after the first;**
- 2) A final visit in the last month of the attachment.**

7.6 Stipends for Students in SIWES

The rate of stipend payable shall be determined from time to time by the Federal Government after due consultation with the Federal Ministry of Education, the Industrial Training Fund and the NBTE.

7.7 SIWES as a Component of the Curriculum

The completion of SIWES is important in the final determination of whether the student is successful in the programme or not. Failure in the SIWES is an indication that the student has not shown sufficient interest in the field or has no potential to become a graduate in his field. The SIWES should be graded on a fail or pass basis. Where a student has satisfied all other requirements but failed SIWES, he may only be allowed to repeat another four months SIWES at his own expense.

**NATIONAL DIPLOMA IN TRANSPORT PLANNING AND MANAGEMENT
YEAR 1 SEMESTER 1**

S/N	CODES	COURSE	L	P	CU	CH
1	GNS 101	Use of English I	2	-	2	2
2	MTH 111	Mathematics	2	-	2	2
3	STA 111	Introduction to Statistics	2	-	2	2
4	SUG 101	Intro.to Basic Principles in Surveying I	1	2	2	3
5	GNS 127	HIV/AIDs, Drugs abuse and Citizenship Education	2	-	2	2
6	TPM 111	Traffic Survey Methods	1	2	2	3
7	MEC 101	Technical Drawing	1	2	2	3
8	TPM 112	History of Transport	2	-	2	2
9	TPM 113	Introduction to Land Transport	2	-	2	2
10	TPM 114	Transport Planning I	2	-	2	2
11	TPM 115	Transport Planning Design I	1	3	3	4
		TOTAL	18	9	23	27

YEAR 1 SEMESTER 2

S/N	Course Code	Course	L	P	CU	CH
1	GNS 128	Citizenship Education II	2	-	2	2
2	GNS 102	Communication in English I	2	-	2	2
3	EED 126	Entrepreneurial Development I	1	2	2	3
4	COM 101	Introduction to Computers	1	2	2	3
5	SUG 102	Introduction to Basic Principles in Surveying II	1	2	2	3
6	TPM 121	Research Method	2	-	2	2
7	TPM 122	Introduction to Transport Technology	2	-	2	2
8	TPM 123	Introduction to Air and Water Transport	2	-	2	2
9	TPM 124	Introduction to Transport Economics	2	-	2	2
10	TPM 125	Urban Transport Planning	2	-	2	2
11	TPM 126	Transport Planning Design II	1	3	3	4
		TOTAL	18	9	21	27

YEAR 2 SEMESTER 1

S/N	Course Code	Course	L	P	CU	CH
1	GNS211	Introduction to Psychology	2	-	2	2
2	GNS 201	Use of English II	2	-	2	2
3	COM 123	Computer Packages (Transport Applications)	1	2	2	3
4	TPM 211	Road Freight and Passenger Transport	2	-	2	2
5	TPM 212	Rural Transport Planning	2	-	2	2
6	TPM 213	Population and Urbanization	2	-	2	2
7	TPM 214	Introduction to Transport and Society	2	-	2	2
8	TPM 215	Transport Planning Design III	1	3	3	4
9	TPM 216	Transport Operations and Management	2	-	2	2
10		TOTAL	16	5	19	21

YEAR 2 SEMESTER 2

S/N	Course Code	Course	L	P	CU	CH
1	EED 226	Entrepreneurial Development	1	2	2	3
2	GNS 202	Communication in English II	2	-	2	2
3	TPM 221	Transport Finance	2	-	2	2
4	TPM 222	Transport System Management	2	-	2	2
5	TPM 223	Professional Ethics	2	-	2	2
6	TPM 224	Transport Planning Design IV	1	2	3	3
7	TPM 225	Mass Transit Operation and Management	2	-	2	2
8	TPM 226	Project	2	-	2	2
9		TOTAL	14	4	19	18

Programme: National Diploma in Transport Planning and Management		
Course Title: Traffic Survey Methods	Code: TPM 111	Credit Hour: 3 Credit Unit:2
	Pre-requisite:	Theoretical: hours/week
Year:2 Semester: 1		Practical : hours/week

Goal: This course is designed to equip students with basic knowledge of principles and techniques of traffic survey

General Objectives:

On completion of the course, students should be able to:

- 1.0 Recognize the different types of traffic surveys
- 2.0 Conduct traffic survey
- 3.0 Analyze and interpret traffic data
- 4.0 Relate traffic volume to road capacity and parking etc.

Programme: NATIONAL DIPLOMA IN TRANSPORT PLANNING AND MANAGEMENT						
Course Title: Traffic Survey Methods			Code: : TPM 111		CH:3 CU:2	
Theoretical Content			Practical Content			
General Objective 1.0 : Recognize the different types of traffic surveys						
Week	Specific Learning Outcomes	Teacher’s Activities	Resources	Specific Learning Outcomes	Teacher’s Activities	Evaluation
1-2	1.1 Define traffic survey 1.2 Outline different types of traffic survey 1.3 Explain methods of traffic survey 1.4 Explain traffic flow in a given area	i. Explain traffic survey ii. Explain different types of traffic travel survey iii. Describe different methods of traffic survey iv. Explain traffic flow in a given area	Books, Journals Maps Traffic counter			Explain different types of traffic travel survey Describe different methods of traffic survey
General Objectives 2.0 Conduct traffic survey						
3-6	2.1 Outline the importance of traffic survey	i. Explain the importance of traffic survey	Books, Journals	Conduct traffic survey in a selected area	Guide students to carry out traffic survey	Discuss the procedure to conduct traffic survey

	2.2 Outline the procedure to conduct traffic survey 2.3 Explain how to conduct traffic survey	ii. Discuss the procedure to conduct traffic survey iii. Explain how to conduct traffic surveys	Maps Traffic counter			
General Objectives 3.0 Analyze and interpret traffic data						
7-8	3.1 Define traffic data 3.2 Outline procedure of traffic data analysis 3.3 Outline methods of travel data analysis 3.4 Interpret the result of analyzed traffic data	i. Explain traffic data ii. Discuss the procedure for traffic data analysis iii. Explain methods of traffic data analysis iv. Explain the interpretation of analyzed traffic data	Books Journals Maps Computer system Scientific Calculator Relevant software Printer	3.1Analyze traffic survey data	i. Give students raw traffic data ii. Guide student how to analyse data iii. Give student assignment iv. Evaluate the assignment	Explain methods of traffic data analysis
General Objectives 4.0 Relate traffic volume to road capacity and parking etc.						
9-12	4.1 Define Road Capacity 4.2 Outline the types of intersection	i. Explain road capacity ii. Explain various types of	Books Journals etc. Volumes	4.1Carry out traffic survey	Guide students to conduct parking survey	Explain types of parking and regulations

	<p>and turning movements</p> <p>4.3 Outline types of parking</p> <p>4.4 Define parking demand and supply</p>	<p>intersections and turning movements</p> <p>iii. Explain types of parking and regulations</p> <p>vi. Explain parking demand and supply</p>	<p>counter</p> <p>Map</p>			<p>Design parking lot for a major land use</p>
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Programme: National Diploma in Transport Planning and Management		
Course Title: HISTORY OF TRANSPORT	Code: TPM 112	Credit Hour: 2 Credit Unit: 2
	Pre-requisite:	Theoretical: hours/week
Year:1 Semester: 1		Practical : hours/week

Goal: The course is designed to equip students with the understanding of the history of Transport development and its application to transport planning and management

General Objectives:

On completion of the course, students should be able to:

- 1.0 Trace the history of transport in the pre-industrial era.
- 2.0 Outline the levels of transport development during industrial revolution.
- 3.0 Trace the development of Rail, Water, Road, Air and Pipeline Transport.
- 4.0 Outline the development of Communication in Nigeria and its influence on Transport
- 5.0 Outline the roles of Communication/Transport on the spatial distribution and interaction in Nigeria.

Programme: NATIONAL DIPLOMA IN TRANSPORT PLANNING AND MANAGEMENT						
Course Title: HISTORY OF TRANSPORT			Code: TPM 112		CH: CU:	
Theoretical Content			Practical Content			
General Objective 1.0 : Trace the history of transport in the pre-industrial era						
Week	Specific Learning Outcomes	Teacher’s Activities	Resources	Specific Learning Outcomes	Teacher’s Activities	Evaluation
1	1.1 Explain transport development during stone and bronze ages etc. 1.2 Compare the changes that occurred in each age. 1.3 Identify the modes of Transport during the ages. 1.4 Describe transport development during the classical era. 1.5Compare transport development planning during medieval, renaissance and baroque periods.	i. Define transport ii. Trace the history of transport development since preindustrial period. iii. Classify Transport types and modes.	i. Textbooks, Journals and other relevant materials.			Trace the history of transport development since preindustrial period.

General Objectives 2.0 Outline the levels of transport development during industrial revolution						
2	<p>2.1 Define industrialization</p> <p>2.2 Highlight the various modes of transport available during Industrial Revolution period.</p> <p>2.3 Explain Industrial Revolution and its effects on various modes of transport.</p> <p>2.4 Examine the various modes of transport and their effects during the period</p>	<p>i. Define industrialization.</p> <p>ii. Explain the effects of industrial Revolution on transport development.</p> <p>iii. Highlight the various modes of Transport available during the era.</p> <p>iv. Describe the various modes of transport and their impact during the period.</p>	Books, Journals and other relevant materials			<p>Explain the effects of industrial Revolution on transport development</p>
General Objectives 3.0 Trace the development of Rail, Water, Road, Air and Pipeline Transport						
3	<p>3.1 Trace the evolution of the various modes of transport as indicated above.</p> <p>3.2 Explain the development process of the various modes of transport.</p>	<p>i. Explain the evolution of various modes of transport.</p> <p>ii. State the importance of transport modes to settlements.</p>	Textbooks, Journals and Other relevant materials			<p>Explain the evolution of various modes of transport</p>

	3.3 State the importance of this development to settlements.					
General Objectives 4.0 : Outline the development of Communication in Nigeria and its influence on Transport						
4	<p>4.1 Trace the history of Telecommunication Development in Nigeria.</p> <p>4.2 Identify the effects of Telecommunication development on Urban growth in Nigeria.</p> <p>4.3 State the importance of telecommunication in traffic management in Nigeria.</p>	<p>i. Explain telecommunication development in Nigeria</p> <p>ii. State the advantages of telecommunication in Nigeria.</p>	<p>Books,</p> <p>Journals and</p> <p>Other relevant Materials</p>			<p>Explain the importance of telecommunication in traffic management in Nigeria</p>
General Objectives 5.0 Outline the roles of Communication/Transport on the spatial distribution and interaction in Nigeria						
5	<p>5.1 Define Communication.</p> <p>5.2 identify the effect of Transport and Communication on Urban Development.</p> <p>5.3 Examine the interaction between Urban land uses,</p>	<p>Explain the nature and character of communication</p> <p>ii. State the advantages of transport and communication in Nigeria Urban areas.</p>	<p>Books,</p> <p>Journals and other relevant journals</p>			<p>Explain the effect of transport and communication on Urban Development</p>

	communication and transport.					
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Programme: National Diploma in Transport Planning and Management		
Course Title: Introduction To Land Transport	Code: TPM 113	Credit Hour: 2
Mode		Credit Unit:2
	Pre-requisite:	Theoretical: hours/week
Year:1 Semester: 2		Practical : hours/week

Goal: This course is designed to enable students understand land modes of Transport

General Objectives:

On completion of the course, students should be able to:

- 1.0 Appreciate the modes of land transport
- 2.0 Recognize elements of land transport system
- 3.0 Appreciate the mode of operation on land transport
- 4.0 Recognize the infrastructural facilities of land transport mode
- 5.0 Outline the operational characteristics of land transport

Programme: NATIONAL DIPLOMA IN TRANSPORT PLANNING AND MANAGEMENT						
Course Title: Introduction To Land Transport			Code: TPM 113		CH:2 CU:2	
Theoretical Content			Practical Content			
General Objective 1.0 : Appreciate the modes of land transport						
Week	Specific Learning Outcomes	Teacher’s Activities	Resources	Specific Learning Outcomes	Teacher’s Activities	Evaluation
1-2	1.1 Define land transport 1.2 Outline the types and characteristics of land transport. 1.3 Highlight the advantages and disadvantages of road, rail and pipeline transport 1.4 Explain the functions of road, rail and pipeline transport 1.5 Outline the problems of road, rail and pipeline	i. Explain the types and characteristics of land transport. ii. Discuss the types and characteristics of land transport. iii. Explain the advantages and disadvantages of road, rail and pipeline transport iv. Explain the functions of road, rail and pipeline transport v. Discuss the problems of road, rail and pipeline	Books, Journals, Maps and other relevant materials			Highlight the characteristics, advantages and disadvantages of road, rail and pipeline transport

		transport				
General Objectives 2.0 Recognize the elements of land transport modes						
3-5	2.1 Outline the elements of land transport system 2.2 State elements of road transport mode 2.3 Outline elements of rail transport mode 2.4 State elements of pipeline transport mode	i. Explain the elements of land transport mode- motive power/unit of propulsion, Terminal/ terminus, vehicle or unit of carriage and control. ii. Discuss elements of road transport mode iii. Explain the elements of rail transport mode iv. Explain the elements of pipeline transport	Textbooks Journals and other relevant materials			Discuss the elements of land transport modes
General Objectives 3.0 Appreciate the form of operation of land transport in the society						
6-7	3.1 Define operation in land transport 3.2 Explain form of operation of road, rail and pipeline transport 3.3 Outline the stakeholders in operations of land transport 3.4 State the	i. Explain transport operation in land transport ii. Explain form of operation of road, rail and pipeline transport i.e. private, public, passenger, freight, schedule or non-schedule iii. Discuss the stakeholders in the	Textbooks, Journals and other relevant materials			Explain the form of road, rail and pipeline transport Discuss the operational problems of

	operational problems of land transport	operations of land transport -- Transport unions, passengers, government, drivers/operators, financial institution etc. iv. Discuss the operational problems of land transport				land transport
General Objectives 4.0 Recognize the infrastructural facilities of land transport						
8-9	4.1 Define infrastructure 4.2 State the types of transport infrastructure 4.3 Explain the infrastructural characteristics of land transport 4.3 Outline the challenges of transport infrastructure	i. Explain infrastructure ii. Explain the types of transport infrastructure iii. Discuss infrastructural characteristics of land transport iv. Explain the challenges of transport infrastructure	Textbooks, Journals and other relevant materials			Explain the infrastructural characteristics of land transport
General Objectives 5.0 Outline the operational characteristics of land transport						

10	5.1 State the operational characteristics of Road, rail and pipeline transport.	i. Explain the operational characteristics of road, rail and pipeline transport -- speed, flexibility, Safety, and demand responsiveness etc.	Textbooks, Journals and other relevant materials			Explain the operational characteristics of land transport
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Programme: National Diploma in Transport Planning and Management		
Course Title: TRANSPORT PLANNING I	Code: TPM 114	Credit Hour: 3 Credit Unit: 2
	Pre-requisite:	Theoretical: hours/week
Year:1 Semester: 1		Practical : hours/week

Goal: The course is designed to enable students understand the need for transport planning and the relationships between land use and transport.

General Objectives:

On completion of the course, students should be able to:

- 1.0 Appreciate the meaning of Transport Planning
- 2.0 State the modes of transport
- 3.0 Recognize trip generation, distribution, modal split and traffic assignment
- 4.0 Analyze transport demand and how it affects transport planning
- 5.0 Apply network analysis in transport planning
- 6.0 Explore transport services
- 7.0 Recognize organizations involved in transport planning
- 8.0 Outline the process of licensing
- 9.0 Appreciate Nigeria transport policy

Programme: NATIONAL DIPLOMA IN TRANSPORT PLANNING AND MANAGEMENT						
Course Title: INTRODUCTION TO TRANSPORT PLANNING			Code: TPM 114	CH: CU:		
Theoretical Content			Practical Content			
General Objective 1.0 : Appreciate the meaning of Transport Planning						
Week	Specific Learning Outcomes	Teacher’s Activities	Resources	Specific Learning Outcomes	Teacher’s Activities	Evaluation
1	1.1 Define Transport Planning 1.2 Explain the need for Transport Planning 1.3 Explain the scope of Transport Planning 1.4 Describe Transport Planning Process.	i. Explain Transport Planning. ii. Explain the need for Transport Planning iii. Illustrate Transport Planning Process iv. Explain the scope of transport planning	Books, journals and other relevant publications			Explain the Transport Planning Process
General Objectives 2.0 State the modes of transport						
2	2.1 Explain modes of transport 2.2 Explain the characteristics of modes of transport	i. Define modes of transport ii. Explain the characteristics of transport modes	Relevant Books, Journals On Transport			Explain the characteristics of transport modes
General Objectives 3.0 Recognize trip generation, distribution, modal split and traffic assignment						

3	3.1 Describe the sequential demand models 3.2 Explain the need for travel survey in transport planning. 3.3 Explain various travel survey methods 3.4 Explain various data needed in travel survey.	i. Explain the sequential demand models ii. Enumerate the need for travel survey in transport planning. iii. Explain various travel survey methods iv. Explain various data needed in travel survey	Books, Journals and other relevant publications			Explain the sequential demand models
General Objectives 4.0 Analyze transport demand and how it affects transport planning						
4-5	4.1 Explain Origin and Destination (O-D) matrix data 4.2 Explain the relevance of O-D matrix data in transport planning 4.3 Explain the process of O-D matrix data analysis.	i. Explain O-D matrix data and its relevance to transport planning	Books, Journals and other relevant publications	Take a Field work to conduct O-D survey and write a report. . Demonstrate practical examples of O-D matrix data analysis.	Guide students to Field work to conduct O-D survey and write a report	Explain O-D matrix data and its relevance to transport planning
General Objectives 5.0 Apply network analysis in transport planning						
6	5.1 Define network analysis	i. Define network analysis	Relevant books and	Carryout network analysis of a given	Take students to carryout network	Explain the components of network

	5.2 Explain the calculation of network analysis	ii. Explain the calculation of network analysis	Journals on Transport Planning and Engineering	corridor	analysis of a given corridor	analysis
General Objectives 6.0 Explore transport services						
7	6.1 Explain transport Services 6.2 Explain types of transport services 6.3 Explain urban connectors 6.4 Explain the concept of park and ride/kiss and ride 6.5 Explain transit-oriented development	i. Explain transport services ii. Explain types of transport services iii. Explain urban connectors iv. Explain the concept of park and ride/kiss and ride v. Explain transit-oriented development	Relevant books and Journals on Transport Planning and Design			Explain transit oriented development
General Objectives 7.0 Recognize organizations involved in transport planning						
9-10	7.1 Define transport organization 7.2 Outline the organizations involved in transport planning 7.3 Explain role of organization involved	i. Explain transport organization ii. Discuss the nature of organizations involved in transport planning iii. Explain role of organization involved in	Relevant books, Journals on Transport Planning and Traffic	Identify organization involved in transport planning in Nigeria	Guide students to identify organization involved in transport planning in Nigeria	Explain the problems facing the organization involved in transport planning in Nigeria

	in transport planning 7.4 Highlight levels of transport planning	transport planning iv. Explain role of govt. /private organization against stated municipal and professional bodies.	Engineering Books, Journals, and other relevant publications			
General Objectives 8.0 Outline the process of licensing						
11	8.1 Define licensing 8.2 Highlight licensing authorities 8.3 Explain the procedure of licensing	i. Define licensing ii. Highlight licensing authorities iii. Explain the classes, requirements and procedure of licensing	Relevant books, Journals on Transport organization and Management			Explain problems of licensing in Nigeria
General Objectives 9.0 Appreciate Nigeria transport policy						
12	9.1 Define Transport Policy 9.2 Explain the components of transport policy 9.3 State the various stakeholders of transport policy	i. Explain transport policy ii. Explain the components of transport policy iii. State the various stakeholders of transport policy	Relevant books on Transport Planning, Policy and Management			Explain the problems of transport policy in Nigeria

	formulation 9.4 Outline Nigeria transport policy	formulation iv. Outline Nigeria transport policy				
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Programme: National Diploma in Transport Planning and Management		
Course Title: TRANSPORT PLANNING DESIGN 1	Code: TPM 115	Credit Hour: 4 Credit Unit: 3
	Pre-requisite:	Theoretical: hours/week
Year:1 Semester: 1		Practical : hours/week

Goal: This course is designed to enable the student carry out survey and prepare transport plan

General Objectives:

On completion of the course, students should be able to:

- 1.0 Outline the objectives of Transport Planning Design
- 2.0 Comprehend Space Standards for planning transport facilities
- 3.0 Conduct traffic surveys
- 4.0 Carryout analysis of the traffic Data
- 5.0 Prepare Transport Plan for Study Area

Programme: NATIONAL DIPLOMA IN TRANSPORT PLANNING AND MANAGEMENT						
Course Title: TRANSPORT PLANNING DESIGN I (Road Transport Facility Plan)			Code: TPM 115		CH: CU:	
Theoretical Content			Practical Content			
General Objective 1.0 : Outline the objectives of Transport Planning Design						
Week	Specific Learning Outcomes	Teacher’s Activities	Resources	Specific Learning Outcomes	Teacher’s Activities	Evaluation
1-2	1.1 Explain the need to design a functional transport plan 1.2 Determine the procedures for preparation of transport plan 1.3 Explain the element of transport plan 1.4 Outline stakeholders in transport plan preparation	i. Explain the need to design a functional transport plan ii. Describe the procedures for preparation of transport plan iii. Explain the element of transport plan iv. Explain	Books, Journal Traffic Counter Local Maps Base Maps	Identify a case study Carry out traffic count Demonstrate how to use traffic counter Analyze traffic survey data and present them in suitable format Use data to design a transport improvement plan	Guide students to conduct traffic survey Present data report Evaluate the report	Explain how to conduct traffic surveys

		stakeholders in transport plan preparation				
General Objective 2.0 Comprehend Space Standards for planning transport facilities						
3-4	<p>2.1 Define space standards</p> <p>2.2 Outline the characteristics of space standards.</p> <p>2.3 List the objectives of Space Standards in the transport facilities.</p> <p>2.4 Interpret space standards for transport planning and design.</p> <p>2.5 List various uses of spaces standard in transport planning and management</p>	<p>i. Explain the purpose of space standards.</p> <p>ii. Discuss the characteristics of space standards.</p> <p>iii. Explain the objectives of Space Standards in the transport facilities</p> <p>iv. Discuss the interpretation space standards for transport planning and design.</p> <p>v. Explain</p>	<p>Books, Journal</p> <p>Traffic Counter</p> <p>Local Maps</p> <p>Base Maps</p>			Explain the use of various spaces standard for transport planning, operations and management.

		space standards in transport Planning and management				
General Objectives 3.0 Conduct traffic surveys						
5-6	3.1 Divide study area into traffic zones 3.2 Establish suitable cordon line 3.3 Take inventory of directing units 3.4 Conduct home interview survey	i. Explain how to delimit traffic zones ii. Explain how to establish cordon line iii. Explain how to conduct home interview iv. outline content of home interview questionnaire	Books, Journal Camera Base Maps	Select a study area Carry out home interview Write report on the study	Give assignment Guide on how to carry out survey Evaluate assignment	Explain how to establish cordon line Explain how to conduct home interview survey
GENERAL OBJECTIVE 4.0 Carryout analysis of the traffic Data						
7-8	4.1 Explain how to collate traffic data 4.2 Explain Traffic Data Analysis 4.3 Explain how to	i. Explain the need to collate data from various locations	Books, Journals	6.1Collect traffic data 6.2Analyze the data 6.3Interpret the data 6.4Write report	Give Assignment Guide on how to carry out simple data analysis	Traffic counter

	project traffic survey data			.	Evaluate the assignment	
General Objectives 5.0 Prepare transport plan for study area						
9-12	5.1 Prepare transport plan 5.2 Prepare action area plan	i. Explain what is a screen line ii. Explain road network iii. Outline the content of a transport flow plan	Books, Journals	Guide the students to Prepare a transport plan		

Programme: National Diploma in Transport Planning and Management		
Course Title: RESEARCH METHODS	Code: TPM 121	Credit Hour: 2 Credit Unit: 2
	Pre-requisite:	Theoretical: hours/week
Year:1 Semester: 2		Practical : hours/week

Goal: This course is designed to enable students carry out independent research in transport planning and Management

General Objectives:

On completion of the course, students should be able to:

- 1.0 Appreciate research in transport
- 2.0 Appreciate methods applied in transport research
- 3.0 Comprehend the various methods of data collection
- 4.0 Recognize the various methods of data processing
- 5.0 Present research reports

Programme: NATIONAL DIPLOMA IN TRANSPORT PLANNING AND MANAGEMENT						
Course Title: RESEARCH METHODS			Code: TPM 121		CH:2	CU:2
Theoretical Content			Practical Content			
General Objective 1.0 : Appreciate research in transport						
Week	Specific Learning Outcomes	Teacher’s Activities	Resources	Specific Learning Outcomes	Teacher’s Activities	Evaluation
1-2	1.1 Define Research 1.2 Describe various types of research 1.3 Explain the stages of a Research Hypothesis.	i. Explain Research ii. Describe various types of research e.g. descriptive, exploratory, experimental and comparative etc. iii. Explain the stages of a Research Hypothesis	Books on Research writing Journals Past Project etc.			Explain the procedure for Hypothesis testing
General Objectives 2.0 Appreciate methods applied in transport research						
3-4	2.1 Define Sampling 2.2 Explain the types of sampling: 2.3 Explain the uses of sampling in transport planning and management	i. Explain Sampling ii. Explain Probability Sampling (e.g. random, systematic, stratified and clustered) and Non-probability Sampling (e.g.	Books, Journals Relevant Publication			Explain the advantages and disadvantages of probability and Non probability sampling

		accidental, quota and purposive) iii. Explain the uses of sampling in transport planning iv. State the advantages and disadvantages of sampling				
General Objectives 3.0 : Comprehend the various methods of data collection						
5-7	3.1 Define data 3.2 State the types of data: 3.3 Explain methods of data collection 3.4 Describe how to design questionnaire 3.5 State procedures for questionnaires administration 3.6 Design sample questionnaires for research in transport planning	i. Explain transport data ii. State the types of data: iii. Explain methods of data collection iv. Describe how to design questionnaire v. Explain procedures for questionnaires administration	Books on Research Methods Internet and other Materials			Design sample questionnaires for research in transport planning
General Objectives 4.0 Recognize the various methods of data processing						
8-9	4.1 Explain Organization of data 4.2 Explain the grouping of data 4.3 Explain presentation	i. Explain data processing techniques	Books on data processing methods			Explain methods of data processing

	of data 4.4 Describe analysis of data 4.5 Interpret the result of data analysis					
General Objectives 5.0 Present research report						
10	5.1 Describe the general format of a research report: 5.2 Referencing and Bibliography	i. Explain components of a research report ii. Explain types or format of referencing and bibliography	Text books student Project			Explain components of a research report

Course Title: INTRODUCTION TO TRANSPORT TECHNOLOGY	Code: TPM 122	Credit Hour: 2 Credit Unit: 2
	Pre-requisite:	Theoretical: hours/week
Year:1 Semester: 2		Practical : hours/week

Goal: This course is designed to expose students to the basic principles of transport technology

General Objectives:

On completion of the course, students should be able to:

- 1.0 Appreciate development in transport technology to date
- 2.0 Recognize the influence of transport technology on settlement development
- 3.0 Comprehend the classification of transit
- 4.0 Appreciate the roles of government in transport safety
- 5.0 Appreciate emerging technologies in transport

Programme: NATIONAL DIPLOMA IN TRANSPORT PLANNING AND MANAGEMENT						
Course Title: INTRODUCTION TO TRANSPORT TECHNOLOGY			Code: TPM 122		CH:2	CU:2
Theoretical Content			Practical Content			
General Objective 1.0 : Appreciate development in transport technology to date						
Week	Specific Learning Outcomes	Teacher’s Activities	Resources	Specific Learning Outcomes	Teacher’s Activities	Evaluation
1 - 2	1.1 Highlight the technological development of modes of transport overtime	i. Explain the technological development of modes of transport overtime	Books, Journals and other relevant materials			Explain the technological development of modes of transport

General Objectives 2.0 Recognize the influence of transport technology on settlement development						
3- 5	2.1 Appraise the role of transport in development of early cities 2.2 Explain the role of transport technology during industrial revolution 2.3 State the effects of transport on urbanization	i. Explain the role of transport in development of early cities ii. Explain the role of transport technology during industrial revolution iii. Explain the effects of transport on urbanization	Books, Journal and other relevant materials			Explain the effects of transport on urbanization
General Objectives 3.0 Comprehend the classification of transit						
6-7	3.1 Define transit 3.2 State classification of transit 3.3 Enumerate transit system components 3.4 Define transit services 3.5 State vehicles characteristics and motion 3.6 Explain highway transit mode	i. Explain the meaning of transit ii. State classification of transit iii. Explain transit system components iv. Explain the nature of transit services v. State vehicles characteristics and motion vi. Explain highway transit mode	Books, Journals and other relevant materials			Explain the nature of transit services
General Objectives 4.0 Appreciate the roles of government in transport safety						
8-9	4.1 Define transport safety 4.2 State stakeholders in	i. Explain transport safety ii. Discuss role of Stakeholders in	Books, Journals and other	i. Explain the role of government in: transport		

	<p>transport safety</p> <p>4.3 Outline role of government in transport safety</p> <p>4.4 Explain transport in relations to government and international organizations and NGOS</p>	<p>transport safety (individuals, voluntary organizations, regulatory agencies, international organizations, community etc.</p> <p>iii. Explain role of government in transport safety (licensing, enforcement, policy, finance and infrastructure etc.)</p>	<p>relevant materials</p>	<p>safety and passenger security; licensing and environmental</p> <p>ii. Explain transport in relation to local government, international organizations and NGOS</p>		
General Objectives 5.0 Appreciate emerging technologies in transport						
10-11	<p>5.1 Outline the need for emerging technologies in transport</p> <p>5.2 State emerging technologies in transport</p>	<p>i. Explain the need for emerging technologies in transport (safety and environmental issues, global best practices</p> <p>ii. Discuss emerging technologies in transport (GPS device, Collapsible steering, ABS braking system, electric vehicles etc.</p>	<p>Test books</p> <p>Journals</p> <p>Magazines</p> <p>Monography</p> <p>Multi-Media</p>			<p>Explain the need for emerging technologies in transport (safety and environmental issues, global best practices</p>

Programme: National Diploma in Transport Planning and Management		
Course Title: Introduction To Air and Water Transport	Code: TPM 123	Credit Hour: 2 Credit Unit: 2
	Pre-requisite:	Theoretical: hours/week
Year:2 Semester: 1		Practical : hours/week

Goal: The course is designed to expose students to the basic concepts of air and water transport system and operations

General Objectives:

On completion of the course, students should be able to:

- 1.0 Appreciate the concept of air transport.
- 2.0 Recognize air transport facilities and infrastructure
- 3.0 Appreciate air transport operation and Management
- 4.0 Appreciate the concept of water transport.
- 5.0 Recognize water transport facilities and infrastructure
- 6.0 Appreciate water transport operation and Management
- 7.0 Appreciate the roles of air and water transport in development of nations.

	2.3. Outline laws that regulate the siting of airport. 2.4. State laws that regulate operations of air transport.	iii. Discuss laws that regulate the siting of airport. iv. Explain laws that regulate operations of air transport.				of airport
General Objectives 3.0: Appreciate air transport operation and Management.						
	3.1 Define air transport operation and management 3.2 List air transport services 3.3 Trace the development of civil aviation in Nigeria	i. Explain air transport operation and management ii. Discuss air transport services iii. Explain the development of civil aviation in Nigeria	Relevant books Journals, and other learning materials			Explain air transport operation and management
General Objectives 4.0: Appreciate the concept of water transport						
8	4.1 Define water transport. 4.2 Appreciate the relevance of water transport in national development 4.3. Outline the limitations of water transport 4.4 Appreciate the basic Principles of international law on waterways 4.5 Outline types of commercial water	i. Explain water transport. ii. Explain the relevance of water transport in national development iii. Explain the limitations of water transport. iv. Explain the basic Principles of international law on waterways v. Explain types of commercial air transport and	Relevant books Journals, IMO publications and other learning materials			Explain the relevance of water transport in national development Explain the basic Principles of international law on waterways

	transport and regulations	regulation				
General Objectives 5.0 Recognize water transport facilities and infrastructure						
11	5.1 List the components of seaport. 5.2.Highlight ownership of seaport 5.3. Outline laws that regulate the siting of seaport. 5.4. State laws that regulate operations of seaport	i. Explain the components of a seaport. ii. Discuss the ownership of seaport iii. Discuss laws that regulate the siting of seaport. iv. Explain laws that regulate operations of seaport	Relevant books Journals, IMO publications and other learning materials			Explain the components and functions of seaport
General Objectives 6.0 Appreciate water transport operation and Management						
	6.1 Define seaport operation and management 6.2 List seaport services 6.3 Give the development of civil maritime and coastal transport in Nigeria	i. Explain seaport operation and management ii. Discuss seaport services iii. Explain the development of maritime and coastal transport in Nigeria	Relevant books Journals, IMO publications and other learning materials			Explain the development of maritime and coastal transport in Nigeria
General Objectives 8.0: Appreciate the roles of air and water transport in development of nations.						
12	7.1 Outline the role of air transport in national and international development. 7.2 Outline the role of water transport in	i. Explain the role of air transport in national and international development. ii. Explain the role of water transport in national and	Relevant books Journals, IMO, IATA, ICAO etc. publications and other learning			Explain the functions of regulatory and safety agencies in air and water transport - ICAO, IMO,

	national and international development. 7.3 Appreciate institutional framework for operation and safety in air and water transport	international development. iii. Appreciate institutional framework in air and water transport – ICAO, IMO, NCAA, IATA, NIMASA, FAAN, NAMA etc.	materials			NCAA, IATA, NIMASA, FAAN, NAMA etc.
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Programme: National Diploma in Transport Planning and Management		
Course Title: Introduction To Transport Economics	Code: TPM 124	Credit Hour: 2 Credit Unit:2
	Pre-requisite:	Theoretical: hours/week
Year:1 Semester: 1		Practical : hours/week

Goal: This course is designed to enable students understand the basic principles of transport economics

General Objectives:

On completion of the course, students should be able to:

- 1.0 Appreciate the basic concept of transport economics
- 2.0 Explore transport resources
- 3.0 Determine transport costing and pricing.
- 4.0 Outline the role of transport in National economic development.
- 5.0 Appreciate the concept of regulation and deregulation in transport
- 6.0 Explore investment opportunities and management of small-scale enterprise in transport

	resources. 2.3 Explain the importance of transport resources. 2.4. Appraise the role of transport on natural resources exploration	ii. Explain different types of resources. iii. Explain the importance of transport resources. iv. Discuss the role of transport in natural resources exploration	materials			resources exploration
General Objectives 3.0 Determine transport costing and pricing						
5-6	3.1. Define demand and supply 3.2 Outline the types of transport costing 3.3 Outline the principle of pricing	i. Explain demand and supply ii. Explain types transport costing -- types of cost, marginal cost, etc. iii. Explain the principles of pricing -- monopoly, competition, pricing, price discrimination etc.	Books, Journals and other relevant materials			Explain factors influencing transport demand and supply
General Objectives 4.0 Outline the role of transport in National economic development						
7-8	4.1 List out the components of National Development 4.2. Explain the	i. Explain the components of National Development -- Gross National	Books, Journals and other learning materials			Explain the contribution of transport to national development

	<p>contribution of transport to national development</p> <p>4.3 State the role of transport in local economic development.</p> <p>4.4. Define Cost-Benefit Analysis</p>	<p>Product, Gross Domestic Product</p> <p>ii. Discuss the contribution of transport to national development</p> <p>iii. Explain the role of transport in local economic development</p> <p>iv. Discuss Cost Benefit Analysis of transport project</p>				
General Objectives 5.0 Appreciate the concept of regulation and deregulation in transport						
9-10	<p>5.1 Define regulation and deregulation</p> <p>5.2 State the nature of regulation and deregulation in transport</p> <p>5.3 Enumerate the benefits of regulation and deregulation to transport</p> <p>5.4 Identify government instruments in transport regulation and deregulation.</p>	<p>i. Explain the concept of regulation and deregulation in the transport industry.</p> <p>ii. Discuss regulation and deregulation in transport</p> <p>iii. Explain benefits of regulation and deregulation to transport</p> <p>iv. Discuss government instruments in transport regulation</p>	Books, Journals and other relevant materials			Explain benefits of regulation and deregulation in transport

		and deregulation.				
General Objective 6.0 Explore investment opportunities and management of small-scale enterprise in transport						
11-12	6.1 Define investment 6.2 Identify investment opportunities in transport. 6.3 Define transport enterprise 6.4 State procedure for establishing transport enterprise 6.5 Identify source of finance in transport investment 6.6 State principles for managing transport enterprise	i. Explain investment ii. Discuss investment opportunities in transport. iii. Explain the nature of transport enterprise iv. Discuss procedure for establishing transport enterprise v. Explain available sources of finance for transport enterprise vi. Discuss principles for managing transport enterprise	Text Books Journals Magazines CILT/CIoTA Bulletins			Explain investment opportunities in transport

Programme: National Diploma in Transport Planning and Management		
Course Title: Urban Transport Planning	Code: TPM 125	Credit Hour: 2 Credit Unit: 2
	Pre-requisite:	Theoretical: hours/week
Year:1 Semester: 1		Practical : hours/week

Goal: This course is designed to enable students understand the basic principles and techniques of urban transport planning

General Objectives:

On completion of the course, students should be able to:

- 1.0 Appreciate urban transport planning
- 2.0 Appreciate the concept of transport system
- 3.0 Differentiate between mass and para-transit transport system
- 4.0 Apply traffic forecasting and coordination
- 5.0 Recognize various hierarchy of urban settlement.
- 6.0 Carry out reconnaissance survey for urban transport planning

Programme: NATIONAL DIPLOMA IN TRANSPORT PLANNING AND MANAGEMENT						
Course Title: Urban Transport Planning			Code: TPM 125		CH: 2	CU: 2
Theoretical Content			Practical Content			
General Objective 1.0: Appreciate urban transport planning.						
Week	Specific Learning Outcomes	Teacher’s Activities	Resources	Specific Learning Outcomes	Teacher’s Activities	Evaluation
1	1.1 Define urban transport planning 1.2 Outline stakeholders involved in transport planning 1.3 State the roles of	i. Discuss urban transport planning ii. Discuss stakeholders involved in transport planning iii. Explain the role of	Books, journals projectors etc. Audio visual aids			Explain the demand for urban transport

	private and public sector on urban transport 1.4 Explain the demand for urban transport 1.5 Outline transport needs of the urban population	private and public sector on urban transport iv. Explain the demand for urban transport v. Explain transport needs of the urban population.				Discuss the role of private and public sector on urban transport
General Objectives 2.0 Appreciate the concept of transport system						
2	2.1 Outline the concept of transport system 2.2 Outline the component of urban transport system 2.3 Explain the modes of urban transport system 2.4 Explain the operation of urban transport system 2.5 Define transport corridor	i. Explain the concept of transport system ii. Explain the component of urban transport system iii. Explain the modes of urban transport system iv. Explain the operation of urban transport system v. Discuss transport corridor	Books, Journals, Audio Visual			Explain the concept of transport system
General Objectives 3.0 Differentiate between mass and para-transit transport system						
4	3.1 Define mass and paratransit system 3.2 Distinguish between mass and para-transit 3.3 Outline the components of each(mass and para-transit)	i. Explain mass and para-transit operation system ii. Distinguish between mass and para-transit iii. Explain the components of each(mass and	Books, Journals White Board and Audio visual aids.			Distinguish between mass transit and para-transit

	3.4 Explain the role of each in urban transport development.	paratransit) iv Explain the role of each in urban transport development.				
General Objectives 4.0 Apply traffic forecasting and coordination						
5	4.1 Outline procedure for traffic forecasting 4.2 Outline traffic demand models 4.3 Explain traffic demand analysis	i. Explain traffic forecasting and coordination ii. Explain traffic demand models iii. Explain traffic demand analysis	Books Journals			Explain traffic demand models for urban transport planning
General Objectives 5.0: Recognize the hierarchy of urban settlement						
6	5.1 Define urban settlement 5.2 Outline the hierarchy of urban settlement 5.3 Highlight the elements of urban settlement. 5.4 Outline the role of transport in urban settlement	i. Explain urban settlement ii. Discuss the hierarchy of urban settlement iii. Explain the elements of urban settlement. iv. Discuss the role of transport in urban settlement	Books Journals			Discuss the hierarchy of urban settlement
General Objectives 6.0: Carry out reconnaissance survey for urban transport planning						

	6.1 Define reconnaissance survey 6.2 Conduct reconnaissance survey for urban transport planning 6.3 Analyze the result of reconnaissance survey 6.4 Outline the importance of reconnaissance survey to urban transport planning	i. Explain reconnaissance survey ii. Discuss the procedure for conducting reconnaissance survey iii. Analyze and interpret result of reconnaissance survey iv. Explain the importance of reconnaissance survey to urban transport planning	Books, Journals and other relevant documents	Take students to a field work to conduct reconnaissance survey	Guide the students to conduct reconnaissance survey	Discuss the procedure for conducting reconnaissance survey
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Programme: NATIONAL DIPLOMA IN TRANSPORT PLANNING AND MANAGEMENT		
Course Title: Transport Planning Design II (Road Facility Plan II)	Code: TPM 126	Credit Hour: 4 Credit Unit: 3
	Pre-requisite:	Theoretical: hours/week
Year:1 Semester: 2		Practical : hours/week

Goal: This course is designed to equip students with the skill of conducting field survey and prepare transport plan

General Objectives:

On completion of the course, students should be able to:

- 1.0 Recognize road/highway terminology and facility plan
- 2.0 Analyze road geometry and cross section elements
- 3.0 Carryout analysis of the traffic survey
- 4.0 Apply planning standards for the preparation of road facility plan
- 5.0 Prepare road facility plan

Programme: NATIONAL DIPLOMA IN TRANSPORT PLANNING AND MANAGEMENT						
Course Title: Transport Planning Design II (Road Facility Plan II)			Code: TPM 126		CH: 4	CU: 3
Theoretical Content			Practical Content			
General Objective 1.0 : Recognize highway terminology and facility plan						
Week	Specific Learning Outcomes	Teacher’s Activities	Resources	Specific Learning Outcomes	Teacher’s Activities	Evaluation
1 - 2	1.1 Define highway terminology and facility plan 1.2 Explain the elements of road facility plan 1.3 State the procedures, requirement and standard for road facility 1.4 State the stakeholders in the preparation of road facility plan	i. Explain highway terminology and facility plan ii. Discuss the elements of road facility plan iii. Explain procedures, requirement and standard for road facility iv. Explain the involvement of stakeholders in the preparation of road facility plan	Books, journals and relevant publications.			Explain highway terminology and facility plan Explain procedures, requirement and standard for road facility
General Objectives 2.0 Analyze road geometry and cross section elements						
3– 5	2.1 Outline road profile 2.2 Explain road cross section and intersection 2.3 Explain sight distance, vertical	i. Explain road profile ii. Explain road cross section and intersection iii. Explain sight distance, vertical and horizontal	Relevant book, journals	Take a field work to a road intersection	Guide the students to field work on road cross section and intersection	Explain road cross section and intersection

	and horizontal curves	curves				
General Objectives 3.0 Carryout analysis of the traffic survey						
6 – 7	3.1 Define traffic survey 3.2 Outline traffic zones in the study area 3.3 Conduct traffic survey and cordon counts	i. Explain traffic survey ii. Delineate study area into traffic zones and cordon line iii. Conduct traffic survey and analysis	Relevant books, journal traffic count equipment vehicles camera interview guide	Take a field work to a given study area	Guide the students to field work to conduct traffic survey	Delineate study area into traffic zones and cordon line
General Objectives 4.0 Apply planning standards for the preparation of road facility plan						
8 – 9	4.1 Outline planning standards for the preparation of road facility plan 4.2 Explain existing transport facility and plan	i. Explain planning standards for the preparation of road facility plan ii. Evaluate existing transport facility and plan	Relevant books, journals			Appraise existing transport facility and plan of a given area.
General Objectives 5.0 Prepare road facility plan						
10- 11	5.1 Prepare road facility plan of a given area	i. Explain the preparation of road facility plan ii. Prepare road facility plan- street map/plan, parking plan, road plan, intersection plan, junction improvement plan	Relevant books, transport master plan, journals pedestrian facility plan, National infrastructure plan, Nigeria		Guide the students in the preparation of road facility plan	Prepare road facility plan and write a report

		etc.	master plan for integrated transport infrastructure.			
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Programme: NATIONAL DIPLOMA IN TRANSPORT PLANNING AND MANAGEMENT		
Course Title: Road Freight and Passenger Transport Management	Code: TPM 211	Credit Hour: 2 Credit Unit: 2
	Pre-requisite:	Theoretical: hours/week
Year:2 Semester: 1		Practical : hours/week

Goal: This course is designed to enable students have basic knowledge on freight and passenger movement.

General Objectives:

On completion of the course, students should be able to:

- 1.0 Narrate the evolution of freight and passenger transport
- 2.0 Outline freight characteristics and modal choice
- 3.0 Appreciate containerization in freight transport
- 4.0 Recognize flow pattern of goods and types of haulage vehicles
- 5.0 Outline passenger characteristics and modal choice

Programme: NATIONAL DIPLOMA IN TRANSPORT PLANNING AND MANAGEMENT						
Course Title: Road Freight and Passenger Transport Management			Code: TPM 211		CH:2	CU:2
Theoretical Content			Practical Content			
General Objective 1.0 : Narrate the evolution of freight and passenger transport						
Week	Specific Learning Outcomes	Teacher’s Activities	Resources	Specific Learning Outcomes	Teacher’s Activities	Evaluation
1	1.1 Give the evolution of freight transport. 1.2 Give the evolution of passenger transport 1.3 Give the evolution of freight and passenger transport in Nigeria	i. Explain the evolution of freight transport. ii. Narrate the evolution of passenger transport and evolution of freight transport in Nigeria	Books Journals and other relevant materials			Give the evolution of freight and passenger transport in Nigeria
General Objectives 2.0 Outline freight characteristics and modal choice						
2-4	2.1 List characteristics of freight. 2.2 Outline unit of measurement of freight 2.3 Explain international laws governing transport of dangerous goods.	i. Explain characteristic s of freight. ii. Explain unit and scale of measurement of freight iii. Explain international laws governing transport of	Textbooks Journals and other relevant materials			Explain unit and scale of measurement of freight

		dangerous goods				
General Objectives 3.0 Appreciate containerization in freight transport.						
5	3.1 Define containerization 3.2 Describe types of containers. 3.3 Explain the merits and demerits of containerization.	i. Explain containerization ii. Explain various types of containers used in freight transport	Textbook Journals and other relevant materials			Give a sketch of well labeled container
General Objectives 4.0 Recognize flow pattern of goods and types of haulage vehicles.						
6	4.1 Define the location of factories. 4.2 Explain the location of warehouse 4.3 Explain packaging and unitization 4.4 Describe various haulage vehicles and selection procedure	i. Explain location of industries where goods are produced for haulage. ii. Explain the need for warehouse. iii. Describe different ways of packaging. iv. Explain the selection of haulage vehicles	Textbook Journals and other relevant materials			Explain the location of factories and warehouse
General Objectives 5.0 Outline passenger characteristics and modal choice by commuters						
7	5.1 List socio-economic	i. Discuss the	Textbook			Explain factors

	<p>and trip characteristics of passengers</p> <p>5.2 Explain factors influencing choice of mode by commuters</p> <p>5.3 List constraint of modal choice by commuters</p>	<p>socio-economic and trip characteristics of passengers</p> <p>ii. Explain factors influencing choice of mode by commuters</p> <p>iii. Discuss constraint of modal choice by commuters</p>	<p>Journals and other relevant materials</p>			<p>influencing choice of mode by commuters</p>
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Programme: NATIONAL DIPLOMA IN TRANSPORT PLANNING AND MANAGEMENT		
Course Title: Rural Transport Planning	Code: TPM 212	Credit Hour: 2 Credit Unit: 2
	Pre-requisite:	Theoretical: hours/week
Year:2 Semester: 1		Practical : hours/week

Goal: This course is designed to enable students acquire techniques in Rural Transport Planning

General Objectives:

On completion of the course, students should be able to:

- 1.0 Appreciate rural transport.
- 2.0 Outline rural transport characteristics
- 3.0 Recognize issues on demand and supply of rural transport.
- 4.0 Comprehend rural transport planning
- 5.0 Appreciate the rural transport needs.
- 6.0 Recognize rural transport facilities.

Programme: NATIONAL DIPLOMA IN TRANSPORT PLANNING AND MANAGEMENT						
Course Title: Rural Transport Planning			Code: TPM 212		CH: 2	CU: 2
Theoretical Content			Practical Content			
General Objective 1.0 : Appreciate rural transport planning						
Week	Specific Learning Outcomes	Teacher’s Activities	Resources	Specific Learning Outcomes	Teacher’s Activities	Evaluation
1	1.1 Define rural settlement and rural transport. 1.2 Explain the scope of rural transport. 1.3 Describe rural transport development over the years.	i. Explain rural transport. ii. Explain the evolution of rural transport.	Book, Journals			Explain the scope of rural transport
General Objectives 2.0 Outline rural transport characteristics						
2	2.1 Explain the characteristics of rural transport 2.2 Describe the state of development of rural transport. 2.3 Describe rural accessibility. 2.4 Describe the mobility aspect of rural transport.	i. Explain the state of rural transport development. iii. Explain rural transport accessibility and mobility	Book, Journals			Explain the characteristics of rural transport
General Objectives 3.0 Recognize issues on demand and supply of rural transport						
3	3.1 Identify rural transport modes	i. Explain rural transport	Book, Journals			Explain the development

	3.2 Explain the development process of the various modes of transport. 3.3 Explain rural transport demand and supply. 3.4 Describe rural transport pattern.	modes. ii. Explain rural transport demand and supply. iii. Explain rural transport pattern.				process of the various modes of transport
General Objectives 4.0 Comprehend rural transport planning.						
4	4.1 Define rural transport planning. 4.2 Explain rural transport operations and management 4.3 Explain rural transport problems 4.4 Explain the preparation of rural transport plan .	i. Explain rural transport planning. ii. Explain rural transport problems. iii. Explain operations and management or rural transport	Book, Journals Vehicle Maps Camera Video recorder	Identify study area Carry out a study of transport problems in the selected rural area Write and present report	Demonstrate how to prepare a rural transport plan. Select study area- Guide student to conduct study area Write present report Evaluate	Prepare rural transport plan
General Objectives 5.0 Appreciate the rural transport needs						
5	5.1 Identify rural transport needs. 5.2 Explain the reasons for these needs	i. Discuss rural transport needs. i. Explain rural transport needs.	Book, Journals			Explain rural transport needs of a given area
General Objectives 6.0: Recognize rural transport facilities.						
6	6.1 Define rural transport facilities.	i. Explain rural transport facilities.	Book, Journals			Explain government

	6.2 List the types of rural transport facilities. 6.3 Explain government intervention in rural transport facilities	ii. List types of rural transport facilities. iii. Explain government intervention in rural transport facilities	Vehicle Camera Video			intervention in rural transport facilities
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Programme: NATIONAL DIPLOMA IN TRANSPORT PLANNING AND MANAGEMENT		
Course Title: Population and Urbanization	Code: TPM 213	Credit Hour: 2 Credit Unit: 2
	Pre-requisite:	Theoretical: hours/week
Year:2 Semester: 1		Practical : hours/week

Goal: The course is designed to enable students know the relationship between population growth, urbanization and transport planning and management

General Objectives:

On completion of the course, students should be able to:

- 1.0 Appreciate population and urbanization in transport planning and management
- 2.0 Recognize population data sources and collection methods
- 3.0 Appreciate population projection methods
- 4.0 Appreciate relationship between population growth, urbanization and transport
- 5.0 Appreciate urban dynamics and its implication on transport planning and management

Programme: National Diploma in Transport Planning and Management						
Course Title: Population and Urbanization			Code: TPM 213		CH: 2	CU: 2
Theoretical Content			Practical Content			
General Objective 1.0: Appreciate population and urbanization in transport planning and management						
Week	Specific Learning Outcomes	Teacher’s Activities	Resources	Specific Learning Outcomes	Teacher’s Activities	Evaluation
1 - 2	1.1Define Population 1.2Define Urbanization 1.3Outline the characteristics of population and urbanization	i. Explain Population and population parameters ii. Discuss urbanization iii. Explain the relationship between population and urbanization	Books Journals and relevant materials			Explain population parameters and urbanization
General Objectives 2.0 Recognize population data sources and collection methods						
	2.1 Define population data 2.2 Outline sources of population data for transport planning and management 2.3Outline methods of population data collection and collation 2.4 Outline population dynamics 2.5 Highlight the	i. Explain the meaning of population and demography ii. Discuss sources of population data for transport, iii.Explain methods of population data collection,	Books, Journals Statistical Tables, Census Report, Bulletins			Explain the importance of population and urbanization to transport planning and management

	relevance of population and urbanization to transport planning and management	iv. Discuss population dynamics				
General Objectives 3.0 Understand population projection methods						
7 – 10	3.1 Explain population projection 3.2 Differentiate between population projection and forecasting 3.3 State the importance of population projection and forecasting in transport planning and management	i) Explain population projection and forecasting ii) Differentiate between population projection and forecasting iii) State the importance of population projection and forecasting in transport planning and management	Books, Journals, Calculator Statistical Table			
General Objective 5.0 Appreciate urban dynamics and its implication on transport planning and management						
	5.1 Define urban dynamics 5.2 Define urban spatial imprints of transport 5.3 Highlight urban activity pattern	i. Explain the components of urban dynamics ii. Discuss urban spatial	Books, Journals, journals and magazines			Explain the influence of urban activity pattern on

	5.4 Outline the importance of population and urbanization on transport	<p>imprints of transport</p> <p>iii. Explain urban activity pattern</p> <p>iv. Explain the importance of population and urbanization to transport planning and management</p>				transport system
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Programme: NATIONAL DIPLOMA IN TRANSPORT PLANNING AND MANAGEMENT		
Course Title: INTRODUCTION TO TRANSPORT AND SOCIETY	Code: TPM 214	Credit Hour: 2 Credit Unit: 2
	Pre-requisite:	Theoretical: hours/week
Year: 2 Semester: 1		Practical : hours/week

Goal: This course is designed to enable students understand the relationship between transport and societal development

General Objectives:

On completion of the course, students should be able to:

- 1.0 Appreciate the concept of society
- 2.0 Determine factors that affect societal growth and development
- 3.0 Recognize the need for transport planning in societal development
- 4.0 Outline the effect of population on transport development
- 5.0 Explore the employment opportunities in transport sector
- 6.0 Recognize the influence of culture and politics on transport development
- 7.0 Comprehend Government Policies on Transport Development

Programme: NATIONAL DIPLOMA IN TRANSPORT PLANNING AND MANAGEMENT						
Course Title: Introduction to Transport and Society			Code: TPM 214		CH: 2	CU: 2
Theoretical Content			Practical Content			
General Objective 1.0 : Appreciate the concept of society						
Week	Specific Learning Outcomes	Teacher’s Activities	Resources	Specific Learning Outcomes	Teacher’s Activities	Evaluation
1	1.1 Define society 1.2 Identify societal needs 1.3 Explain the need for transport in the society	i. Define society ii. Highlight societal needs iii.Outline the function of transport in society	Books Articles in Journal			Explain the need for transport in the society
General Objectives 2.0 Determine factors that affect societal growth and development						
2	2.1 Different between growth and development 2.2 Identify the factors that determine societal development 2.3 Explain the significance of each factor towards societal growth 2.4 Describe the socio-economic effects of transport system on society	i. Define the concept of growth and development ii. Identify the indicators of societal development iii.Outline the importance of each factor in societal development iv. State the problem of poor	Journal Published Articles in Journals			Identify the factors that determine societal development Discuss the socio-economic effects of transport system in your environment

	population dynamics and community transport cost 4.4 Outline the nature of transport problem in a given community	iv. Explain transport problem and solution				
General Objectives 5.0 Explore the employment opportunities in transport sector						
6	5.1 Define employment 5.2 Explain employment opportunities in transport sector 5.3 State advantages of globalization on transport sector employment	i. Define employment ii. Outline formal and informal sectors of employment iii. Identify employment opportunities in transport sector iv. Highlight the implication of globalization on transport sector	Books Journals and Other Relevant Materials			Explain globalization Discuss employment opportunities in transport sector
GENERAL OBJECTIVE 6.0: Recognize the influence of culture and politics on transport development						
7-8	6.1 Define culture 6.2 Explain components of culture 6.3 Identify cultural indices that influence transport decisions	i. Define culture ii. Explain mutual and non-mutual components of culture iii. Explain how cultural tendencies can influence transport decision	Books Journals and Other Relevant Materials			Discuss the components of culture Explain how cultural tendencies

	6.4 Explain political influence on transport development	iv. Outline government policies on transport development iii. Outline the role of transport labour union in transport development				influence transport decision
GENERAL OBJECTIVE 7.0: Comprehend Government Policies on Transport Development						
9-10	7.1 Examine provision for transport sector in the past national development plans 7.2 Examine the present effort of government in transport policy formulation	i. Trace the history of national transport policy ii. Explain the effect of transport policy on the quality of life	Books Journals Government Publication Internet			Trace the history of national transport policy in Nigeria

Programme: NATIONAL DIPLOMA IN TRANSPORT PLANNING AND MANAGEMENT		
Course Title: TRANSPORT PLANNING DESIGN III	Code: TPM 215	Credit Hour: 4 Credit Unit: 3
	Pre-requisite:	Theoretical: hours/week
Year 2: Semester: 1	2	Practical : hours/week

Goal: The course is designed to expose students to the basic knowledge of land transport facility design

General Objectives:

On completion of the course, students should be able to:

- 1.0 Comprehend the concept of land transport facility plan.
- 2.0 Recognize various types of land transport facility and plan
- 3.0 Conduct traffic survey for land transport facility plan
- 4.0 Apply planning standards for the preparation of land transport facility plan
- 5.0** Prepare land transport facility plan

Programme: NATIONAL DIPLOMA IN TRANSPORT PLANNING AND MANAGEMENT						
Course Title: Land Transport Facilities Design III (Rail and Pipeline Facility Plan)				Code: TPM 215	CH:4	CU:3
Theoretical Content				Practical Content		
General Objective 1.0: Comprehend the concept of land transport facility plan						
Week	Specific Learning Outcomes	Teacher’s Activities	Resources	Specific Learning Outcomes	Teacher’s Activities	Evaluation
1-2	1.1 Define land transport facility plan 1.2 List types of land transport facility plan 1.3 Outline the components of land transport facility plan	i. Explain land transport facility plan (rail and pipeline) ii. Discuss various types of land transport facility plan in rail and pipeline transport iii. Explain components of land transport facility plan	Textbooks, Journals, design criteria or books on transport planning			Discuss rail and pipeline transport facility plan
General Objectives 2.0 Recognize various types of land transport facility and plan						
3-8 6-7	2.1 List various types of land transport facility 2.2 Outline the procedures for the preparation of land	i. Explain various types of land transport facility ii. Discuss the procedures for the	Textbooks, Journal, Resign Criteria or books on transport			Explain various types of land transport facility and plan

	transport facility plan 2.3 List the requirements for the preparation of land transport facility plan	preparation of land transport facility plan iii. Explain the requirements for land transport facility plan	planning and traffic engineering			
General Objectives 3.0 Conduct traffic survey for land transport facility plan						
8-9	3.1 Highlight the necessary traffic survey for land transport facility plan 3.2 Outline the procedures and process to conduct traffic survey for land transport facility plan 3.3 Conduct traffic survey and interpret data for land transport facility plan	i. Explain the necessary traffic survey for land transport facility plan ii. Discuss the procedure and process to conduct traffic survey for land transport facility plan iii. Conduct traffic survey and interpret data for land transport facility plan	Textbooks, Journals Design standards Tracing Paper Pen sets Computers and graphic software AO plotter A3 printers	Conduct traffic survey for the preparation of land transport facility plan	Guide students to conduct traffic survey for the preparation of land transport facility plan	Explain the necessary traffic survey for the preparation of rail and pipeline transport facility plan.
General Objectives 4.0 Apply planning standards for the preparation of land transport facility plan						
	4.1 Outline planning standards for the preparation of rail and pipeline facility plan 4.2 Appraise existing	i. Explain planning standards for the preparation of rail and pipeline facility plan	Relevant books, journals			Appraise existing rail and pipeline transport facility plan

	rail and pipeline transport facility plan	ii. Discuss existing rail and pipeline transport facility plan				
General Objective 5.0 Prepare land transport facility plan						
4.1	5.1 Prepare land transport facility plan	i. Explain the preparation of rail and pipeline transport facility plan ii. Prepare rail and pipeline transport facility plan.	Relevant books, transport master plan, National infrastructure plan, Nigeria master plan for integrated transport infrastructure		Guide the students in the preparation of rail and pipeline transport facility plan	Prepare rail and pipeline transport facility plan and write a report

Programme: NATIONAL DIPLOMA IN TRANSPORT PLANNING AND MANAGEMENT		
Course Title: Transport Operations and Management	Code: TPM 216	Credit Hour: 2 Credit Unit: 2
	Pre-requisite:	Theoretical: hours/week
Year:2 Semester: 2		Practical : hours/week

Goal: This course is designed to enable students understand the transport operations and management

General Objectives:

On completion of the course, the student should be able to:

- 1.0 Appreciate the elements of marketing in transport operations and management
- 2.0 Outline Transport Business policy and objectives
- 3.0 Appreciate scope of transport operations and management
- 4.0 Recognize tasks and philosophies of marketing management in transport operations
- 5.0 Apply transport marketing in Nigeria
- 6.0 Interpret Transport Regulations and Practice
- 7.0 Appreciate vehicle routing and scheduling in transport operations

Programme: NATIONAL DIPLOMA IN TRANSPORT PLANNING AND MANAGEMENT						
Course Title: Transport Operations And Management			Code: TPM 216		CH:2	CU:2
Theoretical Content			Practical Content			
General Objective 1.0 Appreciate the elements of marketing						
Week	Specific Learning Outcomes	Teacher’s Activities	Resources	Specific Learning Outcomes	Teacher’s Activities	Evaluation
1	1.1Define marketing in relation to transport 1.2List the elements of marketing in relation to transport 1.3Explain the role of each element of marketing.	Explain the concept of marketing in relation to transport. Explain the elements of marketing in relation to transport. State the role of each element of marketing.	Books, journals projectors etc. Audio visual aids			Explain the concept of marketing in relation to transport.
General Objectives 2.0 Appreciate Transport Business Policy and Objectives						
2	2.1 Explain the Transport business policy 2.2 List and explain the policy of transport objectives 2.3 Describe Transport Policy	i. Explain Marketing and business policy in relation to transport development. ii. Define the objectives of Transport	Books, Journals, Audio Visual			Define the objectives of Transport Policy

		Policy iii. Explain the transport policy				
General Objectives 3.0 Outline Transport Operations and Management						
3	3.1 Define Transport Operations 3.2 Explain transport management	i. Define transport management ii. Explain the operation and management of different modes of transport iii. Highlight the management role in transport organization				Explain the operation and management of different modes of transport
General Objectives 4.0 Recognize tasks and philosophies of Marketing Management						
4	4.1 Explain the tasks and philosophies of marketing management 4.2 Explain the role of each task in 4.1 4.3 Explain the underlying philosophy of marketing	i. Explain tasks and philosophy of marketing ii. State the role of each task as listed iii. Explain how to market and distribute different products and services.	Books, Journals White Board and Audio visual aids.			Explain the tasks and philosophies of marketing management

General Objectives 5.0 Apply transport marketing in Nigeria						
5	5.1 Explain the application of transport marketing in Nigeria 5.2 Examine the level of marketing in transport operations 5.3 Explain the best marketing strategy in transport operations	i. Discuss the application of transport marketing in Nigeria ii. Explain the level of marketing in transport operations iii. Explain the best marketing strategy in transport operations	Books, Journals White Board and Audio visual aids.			Explain the level of marketing in transport operation
General Objectives 6.0: Interpret Transport Regulations and Practice						
6	6.1 Explain regulations guiding transport operations. 6.2 Examine the existence of the National Regulators and their functions. 6.3 State the provision of the laws. 6.4 Describe the transport practice in terms of safety	i. Explain regulations guiding transport operations. ii. Examine the existence of the National Regulators and their functions. iii. Discuss the provision of	Books, journals, Audio visual Power point presentation			Discuss the existence of the National Regulators and their functions

		the laws. iv. Explain the transport practice in terms of safety.				
General Objectives 7.0: Appreciate vehicle routing and scheduling in transport operations						
7	7.1 Define routing and scheduling 7.2 Explain the procedures of routing and scheduling of vehicle	i. Define routing and scheduling ii. Explain the procedures of routing and scheduling of vehicle				Explain the procedures of routing and scheduling of vehicle

Programme: NATIONAL DIPLOMA IN TRANSPORT PLANNING AND MANAGEMENT		
Course Title: Transport Finance	Code: TPM 221	Credit Hour: 2 Credit Unit: 2
	Pre-requisite:	Theoretical: hours/week
Year:2 Semester: 2		Practical : hours/week

Goal: This course is designed to equip students with basic knowledge of principles of Finance in Transport Planning and Management

General Objectives:

On completion of the course, students should be able to:

- 1.0 Comprehend the basic accounting procedure
- 2.0 Explore sources of Transport Finance
- 3.0 Appreciate investment decisions in transport enterprise
- 4.0 Examine profit planning and budget control
- 5.0 Appreciate basic principles of Insurance in transport investments
- 6.0 Comprehend insurance policy and documentation in transport
- 7.0 Appreciate basic risk analysis and decision making in transport business.

Programme: NATIONAL DIPLOMA IN TRANSPORT PLANNING AND MANAGEMENT						
Course Title: Transport Finance			Code: TPM 221		CH:2	CU:2
Theoretical Content			Practical Content			
General Objective 1.0: Comprehend the basic accounting procedure						
Week	Specific Learning Outcomes	Teacher’s Activities	Resources	Specific Learning Outcomes	Teacher’s Activities	Evaluation
1	1.1 Define accounting 1.2 Outline terms used in accounting and finance 1.3 Outline complete	i. Explain accounting ii. Discuss terms used in accounting and finance iii. Explain complete cycle	Textbooks Journals and other relevant materials Computer Calculator Account ledger or note book		Explain basic types and classifications of accounts Illustrate the	Examine the application of types and classification of accounts

	<p>cycle of Accounting</p> <p>1.4 List the basis and classification of account</p> <p>1.5 Demonstrate the application of the above</p>	<p>of accounting</p> <p>iv. Discuss basis and classification of account</p> <p>iv. Demonstrate the application of the above</p>			<p>application of the rules of debit and credit</p>	
General Objectives 2.0 Explore sources of Transport Finance						
2-3	<p>2.1 List various sources of Transport Finance.</p> <p>2.2 Outline the conditions and terms in sourcing finance</p> <p>2.3 Outline the consequences of violation of the above terms and conditions</p>	<p>i. Explain various sources of Transport Finance.</p> <p>ii. Discuss the terms and conditions in sourcing finance for transport</p> <p>iii. Explain the consequences and impacts of violation of the above terms and conditions</p>	<p>Textbooks</p> <p>Journals and other relevant materials</p>			<p>Explain various sources of Transport Finance.</p>
General Objectives 3.0 Appreciate investment decisions in transport enterprise						
4-5	<p>3.1 Define Investment</p> <p>3.2 Outline types of investments</p> <p>3.3 List the procedures for making</p>	<p>i. Explain the meaning of investment</p> <p>ii. Explain various types of investments</p> <p>Explain the procedures for</p>	<p>- Textbooks</p> <p>- Journals and other relevant materials</p>		<p>Illustrate the application of investment appraisal techniques</p>	<p>Illustrate investment appraisal techniques</p>

	investment decision. 3.4 Explain investment appraisal Technique.	making Investment Decision iv. Explain investment appraisal technique.				
General Objectives 4.0 Examine profit planning and budget control						
6-7	4.1 Define profit planning. 4.2 Define capital budget 4.3 Define budget control 4.4 Explain profit planning and budget control in transport investment	i. Explain profit planning ii. Discuss capital budget iii. Explain budget control iv. Explain profit planning and budget control in transport investment	Textbook Journals and other relevant materials			Explain profit planning and budget control in transport investment
General Objectives 5.0 Appreciate basic Risk Analysis and Decision making in Transport Business						
8-9	5.1 Define Risk and uncertainty 5.2 Outline sources of risk in transport business 5.3 Explain basis for decision making in transport business.	i. Explain risk and uncertainty ii. Discuss sources and nature of risk in transport business iii. Explain basis for decision making in transport business	Textbook Journals and other relevant materials			Explain risk and uncertainty in transport business
General Objective 6.0 Appreciate basic principles of Insurance in transport investments						

10-11	6.1 Define insurance 6.2 List terms and documents used in insurance. 6.3 Outline claim procedures 6.4 Outline the importance of insurance in transport enterprise and investment	i. Explain insurance ii. Discuss terms and documents used in insurance iii. Discuss claim procedures iv. Explain the importance of insurance in transport enterprise and investment	Textbooks, Journals and other relevant materials			Explain the importance of insurance in transport enterprise and investment
General Objective 7.0 Comprehend insurance policy and documentation in transport						
12	7.1 Outline types of insurance policy 7.2 List insurance documents 7.3 State legal requirements for insurance	i. Explain types of insurance policy ii. Discuss insurance documents and documentation iii. Explain legal requirements for insurance	Textbooks, Journals and other relevant materials			Explain types of insurance policy

Programme: NATIONAL DIPLOMA IN TRANSPORT PLANNING AND MANAGEMENT		
Course Title: Transport System Management	Code: TPM 222	Credit Hour: 2 Credit Unit: 2
	Pre-requisite:	Theoretical: hours/week
Year:2 Semester: 2		Practical : hours/week

Goal: The course is designed to enable students know the basic principles of transport system management

General Objectives:

On completion of the course, students should be able to:

- 1.0 Comprehend the concept of Transport System Management
- 2.0 Appreciate strategies of Transport System Management
- 3.0 Comprehend Transport System Management Action Plan
- 4.0 Recognize the organization involved in Transport System Management
- 5.0 Recognize Transport System Management Projects.
- 6.0 Comprehend standards, procedures and applications of Transport System Management

Programme: NATIONAL DIPLOMA IN TRANSPORT PLANNING AND MANAGEMENT						
Course Title: Transport System Management			Code: TPM 222		CH:	CU:
Theoretical Content			Practical Content			
General Objective 1.0: Comprehend the concept of Transport System Management						
Week	Specific Learning Outcomes	Teacher’s Activities	Resources	Specific Learning Outcomes	Teacher’s Activities	Evaluation
1-2	1.1 Define transport system management 1.2 Outline the features and indicators of transport system management 1.3 Outline forms and components of transport system management 1.4 List the functions of Transport System Management	i. Explain Transport System Management ii. Discuss the features and indicators of transport system management iii. Explain the forms and components of transport system management iv.Explain the functions of Transport System Management	Books, Journals and other Relevant Materials			Explain the forms and components of transport system management
General Objectives 2.0 Appreciate strategies of Transport System Management						
3-4	2.1 List strategies of transport System Management 2.2 Outline the advantages and disadvantages of the strategies	i. Explain strategies of Transport System Management ii. Discuss the advantages and disadvantages of	Books, Journals and other relevant Materials			Explain strategies of Transport System Management

		the strategies				
General Objectives 3.0 Comprehend Transport System Management Action Plan						
5-6	3.1 Define Transport System Management Action Plan 3.2 Determine the elements of Transport System Management Action Plan	i. Explain Transport System Management Action Plan ii. Discuss types/elements of Transport System Management Action Plan	Books, Journals and other relevant Materials			Discuss types/elements of Transport System Management Action Plan
General Objectives 4.0 Recognize Transport System Management Projects						
7-8	4.1 Define Transport System Management project 4.2 Outline sources of Transport System Management Projects 4.3 List various types Transport System Management Projects	i. Explain Transport System Management Action Plan ii. Discuss types/elements of Transport System Management Action Plan iii. Explain various types Transport System Management Projects	Text books Journals Magazines Bulletin			Explain various types Transport System Management Projects in an area
General Objectives 5.0 Recognize the organisation involved in Transport System Management						

9-10	<p>5.1 List organizations involved in TSM</p> <p>5.2 Outline the nature of involvement of the Organisation in TSM plan and projects</p> <p>5.3 Highlight the challenges of TSM in Nigeria cities</p>	<p>i. Explain organizations involved in TSM</p> <p>ii. Discuss the nature of involvement and roles of the organisation in TSM plan and projects</p> <p>iii. Explain the challenges of TSM in Nigeria cities</p>	Books or Transport Planning			Discuss various types of transport terminals
General Objectives 6.0 Comprehend standards, procedures and applications of Transport System Management						
11-12	<p>6.1 Define standard</p> <p>6.2 Outline procedure for application of Transport System management</p> <p>6.3 Highlight tools, materials and devices for Transport System Management</p>	<p>i. Explain standard</p> <p>ii. Discuss the procedure for the application of Transport System Management</p> <p>iii. Explain tools, materials and devices for Transport System Management</p>	Books or Transport Planning			Discuss the procedure for the application of Transport System Management

Programme: NATIONAL DIPLOMA IN TRANSPORT PLANNING AND MANAGEMENT		
Course Title: Professional Ethics	Code: TPM 223	Credit Hour: 2 Credit Unit: 2
	Pre-requisite:	Theoretical: hours/week
Year:2 Semester: 2		Practical : hours/week

Goal: This course is designed to equip students with basic knowledge of professional ethics and practice in transport

General Objectives:

On completion of the course, the student should be able to:

- 1.0 Appreciate the nature and scope of profession
- 2.0 Recognize the categories of professional organizations
- 3.0 Comprehend the provisions for transport cadre in public and private sectors
- 4.0 Interpret basic laws relevant to transport professional organizational practice
- 5.0 Comprehend basic ethical practice and conduct in transport profession
- 6.0 Appreciate consultancy services and engagement in transportation

Programme: NATIONAL DIPLOMA IN TRANSPORT MANAGEMENT AND PLANNING						
Course Title: Professional Ethics			Code: TPM 223	CH:2	CU:2	
Theoretical Content			Practical Content			
General Objective 1.0 : Appreciate the nature and scope of profession						
Week	Specific Learning Outcomes	Teacher’s Activities	Resources	Specific Learnin Outcomes	Teacher’s Activitie s	Evaluation
1-2	1.1 Define profession, 1.2 Trace the evolution of profession 1.3 Outline the features of profession	i. Explain profession, professionalism and professional. ii. Discuss the evolution of profession. iii. Explain the distinct features of profession.	Books, journals, and internet			Explain profession, professionalism and professional.
General Objectives 2.0 Recognize the categories of professional organizations						
	2.1 Define professional organization 2.2 List categories of professional organizations 2.3 Trace the evolution of professional organization in transport. 2.4 Explain function, membership classes and arms of professional organizations in transport. 2.5 Outline nature of synergy among professional organizations 2.6 List challenges of professional organizations in	i. Explain professional organization. ii. Discuss the categories and features of professional organization- statutory and non-statutory iii. Explain historical development of professional organizations in transport- The Chartered Institute of Logistics and transport (CILT) and The Chartered Institute of Transport Administration of Nigeria (CIoTA) etc. iv. Explain the functions, membership classes and arms	Books, Journals and Internet, Newsletter Bulletin			Explain the functions, membership classes and arms of the CILT and CIoTA

	Transport	in iii above CILT, CIoTA etc. v. Discuss nature of synergy among professional organizations-APBN vi. Explain challenges of professional organization in transport				
General Objectives 3.0 Comprehend the provisions for transport cadre in public and private sectors						
	3.1 List composition of National Council on Transport 3.2 Outline transport cadre in public and private practice 3.3 Outline the requirement(s) for cadre migration	i. Discuss the composition and responsibilities of the National Council on Transport ii. Explain the establish cadre for transport in public and private practice iv. Explain the requirements for cadre migration	Books, Journals and Internet, Newsletter Bulletin			Explain the established cadre for transport in public and private sector.
General Objectives 4.0 Comprehend basic laws relevant to transport professional organizational practice						
	4.1 Define law 4.2 State sources of law 4.3 Describe the provisions of law establishing professional bodies	i. Explain the meaning and concept of law ii. Discuss sources of law iii. Explain the provisions of law establishing professional bodies (CIoTA and CILT)	Text Books, Journals Magazine Bulletin			Explain the provisions of law establishing professional CIoTA and CILT
General Objectives 5.0 Comprehend basic ethical practice and conducts in transport profession						
8-9	5.1 Cite the code of professional conduct and practice in transport 5.2 Apply the ethical practices in transport profession	i. Explain code of conducts in transport profession ii. Discuss the ethical practices in transport iii. Explain various types of	Professional code of conduct and practice in Nigeria and			Discuss the ethical practices in transport Explain various

	<p>5.3 Outline the conducts of members that can bring the name of professional bodies into disrepute</p> <p>5.4 Outline disciplinary measures for the violation of the ethics of the profession.</p>	<p>misconducts of members that bring the name of the profession into disrepute</p> <p>iv. Discuss disciplinary measures for the violation of the ethics of the profession by members and nonmembers.</p>	the UK CILT handbook			types of misconducts of members that bring the name of the profession into disrepute
General Objective 6.0 Appreciate consultancy services and engagement in transportation						
	<p>6.1 Define consultancy</p> <p>6.2 List scope of consultancy services in Transport</p> <p>6.3 Highlight procedures for registration of business</p> <p>6.3 Outline procedures of becoming a consultant</p> <p>6.4 List challenges of consultancy services in transport</p>	<p>i. Explain the meaning of consultancy and consultant</p> <p>ii. Discuss the scope of consultancy services in Transport</p> <p>iii. Explain the procedures for registration of business</p> <p>iv. Explain the procedures of becoming a consultant in transport profession</p> <p>iv. Discuss the challenges of consultancy services in transport</p>	Professional code of conduct and practice in Nigeria and the UK CILT handbook			<p>Discuss the scope of consultancy services in Transport</p> <p>Explain the procedures of becoming a consultant in transport profession</p>

Programme: NATIONAL DIPLOMA IN TRANSPORT PLANNING AND MANAGEMENT		
Course Title: TRANSPORT PLANNING DESIGN IV	Code: TPM 224	Credit Hour: 4 Credit Unit: 3
	Pre-requisite:	Theoretical: hours/week
Year: 2 Semester: 2		Practical : hours/week

Goal: The course is designed to expose students to the basic knowledge of water transport facility design

General Objectives:

On completion of the course, students should be able to:

- 1.0 Comprehend the concept of water transport facility plan.
- 2.0 Recognize various types of water transport facility and plan
- 3.0 Conduct traffic survey for water transport facility plan
- 4.0 Apply planning standards for the preparation of water transport facility plan
- 5.0 Prepare water transport facility plan

Programme: NATIONAL DIPLOMA IN TRANSPORT PLANNING AND MANAGEMENT						
COURSE TITLE: TRANSPORT PLANNING DESIGN IV (Water Transport Facilities Design)			Code: TPM 224		CH:4	CU:3
Theoretical Content			Practical Content			
General Objective 1.0: Comprehend the concept of water transport facility plan						
Week	Specific Learning Outcomes	Teacher’s Activities	Resources	Specific Learning Outcomes	Teacher’s Activities	Evaluation
1-2	1.1 Define water transport facility plan 1.2 List types of water transport facilities 1.3 Outline the components of water transport facility plan	i. Explain water transport facility plan ii. Discuss various types of water transport facilities iii. Explain components of water transport facility plan	i. Textbooks, Journals, design criteria or books on transport planning			Discuss water transport facility plan
General Objectives 2.0 Recognize various types of water transport facility and plan						
3-8 6-7	2.1 List various types of water transport facility 2.2 Outline the procedures for the preparation of water transport facility plan 2.3 List the	i. Explain various types of water transport facility ii. Discuss the procedures for the preparation of water transport	Textbooks, Journal, Resign Criteria or books on transport planning and traffic engineering			Explain various types of water transport facility and plan

	requirements for the preparation of water transport facility plan	facility plan iii. Explain the requirements for water transport facility plan				
General Objectives 3.0 Conduct traffic survey for water transport facility plan						
8-9	3.1 Highlight the required survey for water transport facility plan 3.2 Outline the procedures and process to conduct survey for water transport facility plan 3.3 Collect data for water transport facility plan 3.3 Interpret data for water transport facility plan	i. Explain the required survey for water transport facility plan ii. Discuss the procedure and process to conduct survey for water transport facility plan iii. Conduct survey and interpret data for water transport facility plan	Textbooks, Journals Design standards Tracing Paper Pen sets Computers and graphic software AO plotter A3 printers	Conduct traffic survey for the preparation of water transport facility plan	Guide students to conduct traffic survey for the preparation of water transport facility plan	Explain the required survey for the preparation of water transport facility plan.
General Objectives 4.0 Apply planning standards for the preparation of water transport facility plan						
	4.1 Outline planning standards for the preparation of water transport facility plan 4.2 Appraise existing water transport facility plan	i. Explain planning standards for the preparation of water transport facility plan ii. Discuss existing water	Relevant books, journals			Appraise water transport facility plan

		transport facility plan				
General Objective 5.0 Prepare water transport facility plan						
4.1	5.1 Prepare water transport facility plan	i. Explain the preparation of water transport facility plan ii. Prepare water transport facility plan.	Relevant books, transport master plan, National infrastructure plan, Nigeria master plan for integrated transport infrastructure Computer system and CAD software		Guide the students in the preparation of water transport facility plan	Prepare water transport facility plan and write a report

Programme: NATIONAL DIPLOMA IN TRANSPORT PLANNING AND MANAGEMENT		
Course Title: Mass Transit Operations and Management	Code: TPM 226	Credit Hour: 2 Credit Unit: 2
	Pre-requisite:	Theoretical: hours/week
Year:2 Semester: 2		Practical : hours/week

Goal: The course is designed to enable students know the basic principles of mass transit operations and management

General Objectives:

On completion of the course, students should be able to:

- 1.0 Appreciate the concept of Mass Transit
- 2.0 Recognize the types of Mass Transit
- 3.0 Appreciate the administration of Mass Transit
- 4.0 Comprehend transport Operation Management, Marketing and Commercial Policy
- 5.0 Outline Challenges of Urban Mass Transit and its solution in Nigeria

Programme: NATIONAL DIPLOMA IN TRANSPORT PLANNING AND MANAGEMENT						
Course Title: Mass Transit Operation and Management			Code: TPM225		CH: 2	CU: 2
Theoretical Content			Practical Content			
General Objective 1.0 : Appreciate the concept of Mass Transit						
Week	Specific Learning Outcomes	Teacher’s Activities	Resources	Specific Learning Outcomes	Teacher’s Activities	Evaluation
1-2	1.1 Define Mass Transit 1.2 Trace the development of Mass Transit 1.3 Determine the need for Mass Transit	i. Explain the meaning of Mass Transit ii. Discuss the development of Mass Transit iii. Explain the need for Mass Transit iv. Identify the types of Mass Transit	Textbooks, Journals and other relevant materials			Discuss the development of Mass Transit in Nigeria
General Objectives 2.0 Recognize the types of Mass Transit						
3-4	2.1 Identify types of Mass Transit 2.2 Outline the features of road mass transit 2.3 Highlight the features of rail mass transit 2.4 Outline the features of water mass transit	i. Explain types of Mass Transit ii. Discuss the features of road mass transit iii. Explain the features of rail mass transit iv. Discuss the features of	Textbooks Rail and relevant operation guides			Explain the types of Mass Transit in Nigeria

		water mass transit				
General Objectives 3.0 Appreciate the administration of Mass Transit						
5-6	3.1 Highlight the role of government in Mass Transit 3.2 Outline the role of Private Sector in Mass Transit 3.3 Appreciate the operational procedure in Mass Transit	i. Explain the role of government in Mass Transit ii. Explain the role of Private Sector in Mass Transit iii. Explain the operational procedure in Mass Transit	Textbooks, Journals and Other Relevant Materials			Explain the role of government and Private Sector in Mass Transit
General Objectives 4.0 Comprehend mass transit Operation Management, Marketing and Policy						
7-9	4.1 Define mass transit operation management 4.2 Define marketing 4.3 Highlight the relevant of marketing mix to mass transit operations 4.4 Outline the provisions of Federal Urban Mass Transit Act.	i. Explain mass transit operation management ii. Discuss marketing iii. Explain the relevant of marketing mix to mass transit operations iv. Discuss the provisions of Federal Urban Mass Transit Act.	Textbooks, Journals and other relevant materials			Explain Urban Mass Transit in Nigeria

General Objectives 5.0: Outline Challenges of Urban Mass Transit and its solution in Nigeria						
10-12	5.1 Highlight the challenges of urban mass transit in Nigeria 5.2 Outline Strategies for improved mass transit	i. Explain challenges facing Road, Rail and water mass transit ii. Explain strategies for addressing the challenges	Textbooks, Journals and other relevant materials			Explain challenges facing Road, Rail and water mass transit

Programme: NATIONAL DIPLOMA IN TRANSPORT PLANNING AND MANAGEMENT		
Course Title: Project	Code: TPM 226	Credit Hour: 2 Credit Unit: 2
	Pre-requisite:	Theoretical: hours/week
Year: 2 Semester: 2		Practical : hours/week

Goal: This course is designed to equip students with knowledge to undertake a detailed study on transport planning and management

General Objectives:

On completion of the course, students should be able to:

- 1.0 comprehend the purpose of research project
- 2.0 Appreciate the common problems associated with project
- 3.0 Comprehend the collection, analysis, interpretation and presentation of research data
- 4.0 Recognize stages involved in terminal project

Programme: NATIONAL DIPLOMA IN TRANSPORT PLANNING AND MANAGEMENT						
Course Title: Project			Code: TPM 226		CH: 2	CU: 2
Theoretical Content			Practical Content			
General Objective 1.0 : Comprehend the purpose of research project						
Week	Specific Learning Outcomes	Teacher’s Activities	Resources	Specific Learning Outcomes	Teacher’s Activities	Evaluation
1	1.1 Define research project 1.3 Explain purposes of research project 1.3 List factors to consider in selecting research	i. Explain research project in Explain the purposes of research	Books, Journals and other relevant materials.			Explain the purposes of research project

	topics	project 1.3 Discuss factors to consider in selecting research topics				
General Objectives 2.0 Appreciate the common problems associated with project						
2	2.1. Explain choice of project topic. 2.2. Differentiate between researchable and non-researchable topics. 2.3. Lists resources required to conduct successful research project 2.4 Enumerate problems expected in the field 2.5 List measures to solve identified problems.	i. Explain selection of research topic ii. Discuss researchable and non-researchable topics iii. Explain resources required to conduct successful research project. iv. Explain research problems and problems of research v. Discuss measures to	Libraries, conference papers, previous projects etc.		Guide the students in selecting research topics	Submit three topics to project coordinator

		solve research problems.				
General Objectives 3.0 Comprehend the collection, analysis, interpretation and presentation of research data						
3	3.1 List methods of data collection 3.2 State sampling techniques 3.3 List research instruments to be used for the project 3.4 List types of questionnaire 3.5 Describe methods of data collation, analysis and presentation	i. Explain methods of data collection ii. Discuss sampling techniques iii. Explain research instruments iv. Explain questionnaire preparation v. Discuss methods of data collation, analysis and presentation	Libraries, conference papers, previous projects etc		Guide students to design questionnaire	Design questionnaire for the research project
General Objectives 4.0 Recognize stages involved in terminal project						
4	4.1 List project outlines 4.2 Prepare project work 4.3 Submit the project appropriately	i. Explain project outlines ii. Guide student to produce the completed work	Libraries, conference papers, previous projects etc.			Assess the submitted project

		iii. Submit complete project				
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PHYSICAL FACILITIES FOR TRANSPORT PLANNING & MANAGEMENT (ND & HND):

- a) CLASSROOMS/DRAWING STUDIOS**
- b) DRIVING/TRAFFIC SIMULATOR LABORATORY**
- c) TRAFFIC INFORMATION/GIS LABORATORY**
- d) AUTOMOBILE WORKSHOP**
- e) EXHIBITION ROOM**
- f) DRIVING RANGE**
- g) MECHANICAL/SOIL MECHANICS LABORATORY (Shared Facility)**
- h) RESOURCE CENTRE**

[A] List of Minimum Resources in the Classrooms/Drawing Studios.

- a) 2Nos. Standard Classrooms/Drawing Studios each for ND & HND Levels to accommodate at least 40 students at a time.**

S/N	Tool/Equipment	No Required
1.	Standard Drawing Boards with Drafting Machine	40
2.	Light Table	2
3.	Standard Stools	40
4.	Set of White Board Drawing Instruments	2
5.	Overhead Projector	1
6.	Projector Screen	1
7.	Slide Projector	1
8.	Drawing Cabinets	4
9.	Set of Drawing Pen	2 sets
10.	Lettering Set	2 sets
11.	Adjustable Square	2
12.	Exhibition Board Fitted with Stands	2
13.	Large Table of Enlargement and Reduction	1
14.	Scientific Calculator	1
15.	Circle Template	2

16. French Curve	2
17. Ellipse Template	2
18. Fixture Template	2
19. Flexible Curve	3
20. Standard T-Square	40
21. Pencil Sharpeners	2
22. Pocket Stereoscope	5
23. Scale Rules	2

[B] List of Minimum Resources in the Driving/Traffic Simulator Laboratory (ND & HND)

S/N	Tool/Equipment	No Required
1.	Auto Counter (Metro Count Classifier	1
2.	Car Driving Simulator	2
3.	Traffic Cone	5
4.	Traffic Bar	5
5.	Road Survey Sign Post	5
6.	Wireless Mobile Traffic Monitoring and DATA Collection System	1
7.	Traffic Analyzer (On-Pavement Sensor) for Count and Speed Measurement	1
8.	Automatic Traffic Recorders	1
9.	Radar Speed Guns	1
10.	Functional Computer System	1
11.	RS-600 Driving Simulator Model Designed for use in Ground Vehicle Training and Assessment Applications	1
12.	Vehicle for Driving Training Car 2 (Pooled)	

[C] List of Minimum Resources in the Traffic Information/GIS Laboratory (ND & HND)

S/N	Tools/Equipment	NO.Required
1.	Functional Desktop computer systems, accessories and software	40

2. Transport Planning Software such as TransCAD for Microscopic, PTV VISSIM, ARCGIS, AutoCAD, TransModeler for Microscopic, City Traffic Simulator for Micro Simulation 1 each
3. Computer Printers 2
4. Local Maps(Road Maps, Settlement Maps, Land Use Maps, Transport Facility Plan, Airport and Railway Terminals 1 each per student
5. A0 Plotter 1
6. A3 Printer 1
7. Photostatting Machine 1
8. Mobile Traffic and Wireless Communication System 1
9. GPS Vehicle Tracking Equipment 1
10. Traffic Analyzer 1
11. Vehicle for Field Trip and Survey 1 (Pooled)

[D] List of Minimum Resources in the Automobile Workshop (ND & HND)

S/N Tools/Equipment No Required

1. Digital Camera 5
2. Video Camera 5
3. Traffic Counter (Manual) 40
4. Digital Counter 5
5. Auto Counter (Metro Count Classifier) 1
6. Volume Counter 2
7. Hat 40
8. Rain Coat 40
9. Trimming Machine 1
10. Steel Cabinets 1
11. Traffic Signs and Signal Postals Varieties
12. Traffic Cone 5
13. Traffic Bar 5
14. Wireless Mobile Traffic Monitoring and DATA Collection System 1

[E] List of Minimum Resources in the Driving Range (ND & HND)

S/N Tools/Equipment No Required

- | | |
|--------------------------|---|
| 1. First-Aid Kit | 1 |
| 2. Flare or Hazard Cones | 1 |
| 3. Spare Tire | 1 |
| 4. Jack and Lug | 1 |
| 5. Wrench | 1 |
| 6. Tire Pressure Gauge | 1 |
| 7. Fire Extinguisher | 1 |
| 8. Sand Buckets | 2 |
| 9. Flash Light | 1 |

[F] List of Minimum Resources in the Exhibition Room (ND & HND)

S/N	Tools/Equipment	No Required
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|-----------|---|----------------------|
| 1. | Local Maps (Road Maps, Settlement Maps, Land Use Maps, Transport Facility Plan, Airport and Railway Terminals
1 each per student | |
| 2. | Steel Cabinets | 1 |
| 3. | Models of Vehicle in all Roads | 1 each model vehicle |

LIST OF PARTICIPANTS FOR ND TRANSPORT PLANNING MANAGEMENT