Bachelor of Technology – Civil Engineering

FLEXILEARN

-Freedom to design your degree

Programme Structure

Curriculum & Scheme of Examination

2014

AMITY UNIVERSITY CHHATTISGARH

RAIPUR

B.Tech-Civil Engineering

Programme Structure

THIRD SEMESTER

Course Code	Course Title	Lecture (L) Hours Per week	Tutorial (T) Hours Per week	Practical (P) Hours Per week	Total Credits
CIV2301	Applied Mathematics – III	3	1	-	4
CIV2302	Mechanics of Solids	2	1	-	3
CIV2303	Mechanics of Fluids	2	1	-	3
CIV2304	Building Technology	3	-	-	3
CIV2305	Surveying	2	-	-	2
CIV2306	Mechanics of Solids Lab	-	-	2	1
CIV2307	Civil Engineering Drawing Lab	-	-	2	1
CIV2308	Surveying Practical – I	-	-	2	1
CIV2309	Mechanics of Fluids Lab	-	-	2	1
Concentration Electives					**2**
CIV2310	Independent Study	-	-	-	1
CIV2331	Term Paper (Evaluation)	-	-	-	2
CIV2332	Project (With Presentation & Evaluation)	-	-	-	2
CIV2333	Workshop/ Certificate (Discipline Specific) **(1 Credit per workshop)**	-	-	-	1
CIV2334	Study Abroad (8 Days)	-	-	-	2
Open Electives					**4*+3**
CSS2151	Effective Listening*	1	-	-	1
BEH2351	Group Dynamics and Team Building*	1	-	-	1
	Foreign Language – III*	2	-	-	2
LAN2351	French-III				
LAN2352	German-III				
LAN2353	Spanish-III				
LAN2354	Russian-III				
LAN2355	Chinese-III				
LAN2356	Portuguese-III				
LAN2357	Korean-III				
LAN2358	Japanese-III				
	TOTAL				**28**

Syllabus – Third Semester

APPLIED MATHEMATICS – III

Course Code: CIV2301 **Credit Units: 04**

Course Objective:
The knowledge of Mathematics is necessary for a better understanding of almost all the Engineering and Science subjects. Here our intention is to make the students acquainted with the concept of basic topics from Mathematics, which they need to pursue their Engineering degree in different disciplines.

Course Contents:

Module I: Partial Differential Equations
Formation of PDE, Equations solvable by direct integration, Linear equations of the first order, Non-linear equations of the first order, Charpit‟s method, Homogeneous linear equations with constant coefficients, Non homogeneous linear equations.

Module II: Fourier Series
Periodic Functions, Fourier Series, Functions having points of discontinuity, Even or Odd Functions, Change of Interval, Half-range series, Parseval‟s Formula, Complex form of Fourier series, Practical Harmonic Analysis, Fourier Transforms, Sine and Cosine Transforms.

Module III: Laplace Transformation
Definition, Transforms of elementary functions, Properties of Laplace transforms, Existence conditions, Transforms of derivatives, Transforms of integrals, Evaluation of integrals by Laplace transform, Inverse transforms, Other methods of finding inverse transforms, Convolution theorem, Application to differential equations, Simultaneous linear equations with constant coefficients, Unit step functions, Periodic functions.

Module IV: Linear Programming
Formulation of the problem, Graphical method, Canonical and Standard forms of L.P.P. Simplex Method, Artificial variable Techniques-M-method, Two phase method, Degeneracy, Dual simplex method.

Examination Scheme:

Components	A	CT	S/V/Q	HA	EE
Weightage (%)	5	10	8	7	70

CT: Class Test, HA: Home Assignment, S/V/Q: Seminar/Viva/Quiz, EE: End Semester Examination; Att: Attendance

Text & References:

Text:
- Differential Calculus by Shanti Narain
- Integral Calculus by Shanti Narain
- Higher Engineering Mathematics by B.S. Grewal

References:
- Differential Equations by A.R. Forsyth
- Higher Engineering Mathematics by H.K. Dass
- Partial Differential Equations by I.N. Snedon

MECHANICS OF SOLIDS

Course Code: CIV2302 **Credit Units: 03**

Course Objective:
The objective of this course is to make the students understand the concept of stress and strain in different types of structure/machine under different loading conditions. The course also covers the simple and compound stresses due to forces, stresses and deflection in beams due to bending, torsion in circular section, strain energy, different theories of failure, stress in thin cylinder thick cylinder and spheres due to external and internal pressure.

Course Contents:

Module I: Simple stresses and strains
Concept of stress and strain; Hooke‟s law, Young‟s modulus, Poisson ratio, stress at a point, stress and strains in bars subjected to axial loading. Modulus of elasticity, stress produced in compound bars subject to axial loading. Temperature stress and strain calculations due to applications of axial loads and variation of temperature in single and compound walls. Impact loading.

Module II: Compound stress and strains
The two dimensional system; stress at a point on a plane, principal stresses and principal planes; Mohr‟s circle of stress. Graphical and Analytical methods for stresses on oblique section of body. Shear force and bending moment diagrams for cantilever, simply supported and overhanging beams.

Module III
Theory of bending stresses in beams due to bending, assumptions in the simple bending theory, derivation of formula: its application to beams of rectangular, circular and channel sections, composite / flitched beams, bending and shear stresses in composite beams.

Module IV: Torsion
Derivation of torsion equation and its assumptions. Applications of the equation of the hollow and solid circular shafts torsional rigidity, combined torsion and bending of circular shafts principal stress and maximum shear stresses under combined loading of bending and torsion, analysis of close-coiled-helical springs.

Module V: Thin cylinders and spheres
Derivation of formulae and calculation of hoop stress, longitudinal stress in a cylinder and sphere subjected to internal pressure.

Module VI: Columns and struts
Columns and failure of columns, Euler's formulas; Rankine-Gordon's formula, Johnson's empirical formula for axially loaded columns and their applications.

Module VII: Slope and deflection
Relationship between moment, slope and deflection, Mohr‟s theorem; Moment area method; method of integration; Macaulay‟s method: Use of all these methods to calculate slope and deflection for the following:
a) Cantilevers
b) Simply supported beams with or without overhang
c) Under concentrated loads, uniformly distributed loads or combination of concentrated and uniformly distributed loads

Examination Scheme:

Components	A	CT	S/V/Q	HA	EE
Weightage (%)	5	10	8	7	70

CT: Class Test, HA: Home Assignment, S/V/Q: Seminar/Viva/Quiz, EE: End Semester Examination; Att: Attendance

Text & References:

Text:

- Jindal U.C., "Strength of Materials", Galgotia Publication, New Delhi, 1998.
- Ryder G.H., "Strength of Materials", Macmillan, Delhi, 2003.
- R.K. Bansal, "Strength of Materials", Laxmi Publication, New Delhi, 2001.

References:

- Sadhu Singh, "Strength of Materials", Khanna Publishers, New Delhi, 2000.
- Timoshenko S.P., "Elements of Strength of Materials", East-West affiliated, New Delhi, 2000.
- Hibbler R.C., "Mechanics of Materials", Prentice Hall, New Delhi, 1994.
- Popov Eger P., "Engg. Mechanics of solids", Prentice Hall, New Delhi, 1998.
- Fenner, Roger. T, "Mechanics of Solids", U.K. B.C. Publication, New Delhi, 1990.
- Srinath L.S. et.al., "Strength of Materials", McMillan, New Delhi,2001

MECHANICS OF FLUIDS

Course Code: CIV2303 **Credit Units: 03**

Course Objective:
The objective of Fluid Mechanics subject is that students should understand the, properties of fluids, pressure measurement devices, hydraulic forces on surfaces, bouncy and flotation in fluids, kinematics and static behavior of fluids, dimension and model analysis, laminar and turbulent flow, flow through pipes and orifices, boundary layer theory.

Course Contents:

Module I: Fluid Properties and Fluid Statics
Newtonian and Non-Newtonian Fluids; Viscosity; Incompressible and compressible fluids, compressibility. Forces on plane surfaces, forces on curved surfaces, buoyant forces, and stability of floating bodies, metacentre and metacentre height.

Module II: Kinematics of Fluid Motion
Steady and unsteady flow; uniform and non-uniform flow; Laminar and turbulent flow; streamline, path line and streak line; continuity equation, irrotational and rotational flow, velocity potential and stream function, vortex flow, free and forced vortex.

Module III: Dynamics of Fluid Flow
Euler‟s equation of motion and its integration to yield Bernoulli‟s equation, its practical applications – Pilot tube, Venturi meter; steady flow momentum equation, force exerted on a pipe bend.

Module IV: Dimensional Analysis and Principles of Similarity
Buckingham π-Theorem and its applications, Geometric, Kinematics and Dynamic similarity; Dimensionless numbers-Reynolds, Froude, Euler, Mach, Weber Number and their significance.

Module V: Laminar and Turbulent Flow
Reynold‟s experiment, critical velocity, steady laminar flow through a circular tube, flow between parallel plates, measurement of viscosity. Transition from laminar to turbulent flow, courses of turbulence, velocity distribution law near a solid boundary, velocity distribution in rough pipes, Hazen – Williams‟s formula.

Module VI: Analysis of Pipe Flow
Energy losses, minor losses in pipe lines, concept of equivalent length, flow between two reservoirs, and multiple pipe systems – in series and parallel, siphon.

Module VII: Flow Measurements
Measurement of flow using Venturi meter, orifice meter, Pitot tube, measurement of flow in open channels – rectangular, triangular, trapezoidal weir, Cipoeletti weir.

Examination Scheme:

Components	A	CT	S/V/Q	HA	EE
Weightage (%)	5	10	8	7	70

CT: Class Test, HA: Home Assignment, S/V/Q: Seminar/Viva/Quiz, EE: End Semester Examination; Att: Attendance

Text & References:

Text:

- R.K. Bansal, “Fluid Mechanics & Hydraulic Machines”, Laxmi Publications (P) Ltd., 2002.
- Gupta, S. C., Fluid Mechanics and Hydraulic Machines, Pearson Education, 2007
- D.S. Kumar, “Fluid Mechanics and Fluid Power Engineering”, S.K. Kataria & Sons, 2000.

References:

- F. M. White, Introduction to Fluid Mechanics, McGraw Hill
- I.H. Shames, “Mechanics of Fluids”, Tata McGraw Hill
- Douglas, J. F., Gasiorek, J.M. and Swaffield, J., Fluid Mechanics, Pearson Education, 4/e, 2006
- V.L. Streeter and E.B. Wylie, “Fluid Mechanics”, Tata McGraw Hill Massey B S, Mechanics of Fluids, Van Nostrand Reinhold Co

BUILDING TECHNOLOGY

Course Code: CIV2304 **Credit Units: 03**

Course Objective:
The course covers building materials and their testing, cement and its applications foundation and structural members of building. Different areas and utilities of building like floors, doors etc.

Course Contents:

Module I
Building stones - Classification of rocks - Quarrying - Dressing - Properties and uses of common type of stones; Timber - Defects - Seasoning - Decay - Preservation - Plywood, fibre board, particle board; Clay products - Bricks - Manufacture - IS classifications - Properties and testing - Types of bricks - Tiles - Manufacture, properties and uses - Types of tiles; Ceramic products - Lime - Classification - Manufacture, properties and uses.

Module II
Cement - Ingredients - Manufacture - Types of cement - Properties and testing - Uses; Mortar - Sand - Properties - Types of mortar and uses; Concrete - Properties of fresh concrete and tests - Proportioning of concrete mixes - Properties of hardened concrete and tests – Recent developments in concrete; Iron and steel - Structural sections - Properties and uses of structural steel - Recent developments; Miscellaneous materials - Glass - Plastics -A.C.sheets – Thermocole.

Module III
Foundation - Timbering of foundation trenches - Bearing capacity of soils - Improvement of bearing capacity - Settlement of foundation - Description of spread, grillage, raft and pile foundations; Brick and stone masonry - Bonds in brick work - Types of stone masonry -Cavity walls - Lintels and arches; concrete construction - Batching, mixing, placing, compacting and curing of concrete - form work - Precast concrete - Prestressed concrete - Recent developments in concreting; Partition walls - Types and features.

Module IV
Floors and flooring – Different types and applications; Doors, windows and ventilators - Different types; Finishing works; Building Failures - Concrete failure - Steel failure -Foundation failure - Other types of failures – Causes and Remedial measures – Building repairs - Shoring - Underpinning – Scaffolding; Tall buildings - Framed structures - Steel and concrete frames – Joints in steel and concrete frames - Introduction to prefabrication – Slip form and lift slab constructions; Fire proof construction - Fire load - Fire resisting properties of building materials – Fire extinguishing methods – Fire proof construction methods.

Examination Scheme:

Components	A	CT	S/V/Q	HA	EE
Weightage (%)	5	10	8	7	70

CT: Class Test, HA: Home Assignment, S/V/Q: Seminar/Viva/Quiz, EE: End Semester Examination; Att: Attendance

Text & References:

- Punmia B. C, Ashok Kr. Jain, Arun Kr. Jain, Building Construction, Laxmi Publications, New Delhi. (2008).
- Shetty M. S, Concrete Technology, S. Chand & Co., New Delhi (2008).

SURVEYING

Course Code: CIV2305 **Credit Units: 02**

Course Objective:
Surveying is the basic element of mapping areas for civil engineering construction. Methods of surveying including leveling, and leveling methods, contours, estimation of volumes etc are covered.

Course Contents:

Module I
Introduction - classification of surveys - plane surveying - geodetic surveying – topographic surveying - reconnaissance - principle of working from whole to part - provision of control -conventional signs - chain survey - instruments - principles of chain survey - field book - plotting - tie line and check line - chaining and ranging - obstacles - chaining on sloping ground - errors in chain survey - uses of cross staff and optical square

Module II
Compass survey - prismatic compass - surveyor‟s compass - whole circle and reduced bearing- true and magnetic bearing - dip and declination - local attraction - traversing - plotting - error of closure - graphical and analytical adjustments - plane table survey - instruments and accessories - different methods - orientation - advantages and disadvantages of plane tabling -two point problem - three point problem - errors in plane tabling - minor instruments – hand levels - clinometer - Ceylon ghat tracer - hypsometer - pantagraph -ediograph - box sextant -telescopic alidade

Module III
Levelling - definition of level surfaces - mean sea level - reduced level - bench marks - levelling instruments - temporary and permanent adjustments - fly leveling - booking - reduction of levels - corrections for refraction and curvature - reciprocal leveling - longitudinal levelling and cross sectioning - contour survey - definition - characteristics of contour - uses of contour - methods of contouring - direct and indirect interpolation – plotting - areas and volumes - trapezoidal rule - Simpson‟s rule - area from latitude and departure - uses of planimeter - volumes - trapezoidal and prismoidal formula

Module IV
Total Station – introduction – EDM- measurement of horizontal & vertical angles – traversing – trigonometric leveling. Theodolite surveying - study of theodolite - temporary and permanent adjustments -measurement of horizontal angles - method of repetition and reiteration - measurement of vertical angles - theodolite traverse - calculation of co ordinates - corrections - traverse table - omitted measurements - tacheometric surveying - stadia system - fixed and movable hair methods - staff held vertical and normal - instrument constants - analytic lens – tangential system - direct reading tacheometer - subtense bar – trigonometric leveling

Examination Scheme:

Components	A	CT	S/V/Q	HA	EE
Weightage (%)	5	10	8	7	70

CT: Class Test, HA: Home Assignment, S/V/Q: Seminar/Viva/Quiz, EE: End Semester Examination; Att: Attendance

Text & References:

- S.K Duggal, Surveying Vol 1 and II, 2nd ed., Tata - McGraw Hill, New Delhi (2004).
- Arora K.R., Surveying Vol I &II, Standard Book House, New Delhi (2008)
- Punmia, B.C., Ashok Kr. Jain, Arun Kr. Jain, Surveying Vol I & II, Laxmi Publications, New Delhi (2008).

MECHANICS OF SOLIDS LAB

Course Code: CIV2306 **Credit Units: 01**

Course Contents:

Experimental work will be based on the following papers:
Mechanics of Solids

MECHANICS OF SOLIDS LAB

List of Experiments

- Universal Testing Machine
- Tensile Test (MS)
- Double Shear Test (MS)
- Compression Test (CI)
- Brinell Hardness No.
- Izod Impact
- Testing Machine
- Rockwell Hardness Tester
- Spring Stiffness (Spring Compression Testing machine)
- Torsion testing machine

Examination Scheme:

IA				EE	
A	**PR**	**LR**	**V**	**PR**	**V**
5	10	10	5	35	35

Note: IA –Internal Assessment, EE- External Exam, PR- Performance, LR – Lab Record, V – Viva.

CIVIL ENGINEERING DRAWING LAB

Course Code: CIV2307 **Credit Units: 01**

Course Contents:

1. Paneled doors, glazed windows and ventilators in wood.
2. Steel and aluminum windows.
3. Steel roof trusses.
4. Reinforced concrete staircase.
5. Residential buildings with flat and pitched roof – RC and tiled.
6. Public buildings like office, dispensary, post office, bank etc.
7. Industrial buildings.

Examination Scheme:

IA				EE	
A	**PR**	**LR**	**V**	**PR**	**V**
5	10	10	5	35	35

Note: IA –Internal Assessment, EE- External Exam, PR- Performance, LR – Lab Record, V – Viva.

Text & References:

- National Building Code of India
- Local Building Bye-laws
- Callender, John Hancock, Time Saver Standards for Architectural design Data, Tata McGraw Hill.
- Chiara, Callender, John Hancock, Time Saver Standards for Building Type, McGraw Hill
- Chiara, Joseph De, Time Saver Standards for Site Planning, McGraw Hill
- Ching, Francis D K, Architectural Graphics. .John Wiley

SURVEYING PRACTICAL - I

Course Code: CIV2308 **Credit Units: 01**

List of Exercices:

1. **Ranging-** using ranging rods to extend a straight line.

2. **Chain Surveying** – using tapes for proper measurements of linear distances; recording measurements (chain age & different types of offsets) in field book and plotting the details.

3. **Compass Survey** – Traversing.

4. **Plane Table Survey** – Method of Radiation and Intersection.

5. **Plane Table Survey** – Traversing.

6. **Leveling Using Auto-Level (Height of Instrument Method)** – Height of Instrument Method (including exercise for change in instrument position).

7. **Leveling Using Auto-Level** (Rise & Fall Method) – Rise & Fall Method (including exercise for change in instrument position).

8. **Profile Leveling –** taking levels & plotting the profile.

9. **Contour Surveying** - Method of Squares including plotting of contours.

Examination Scheme:

IA				EE	
A	**PR**	**LR**	**V**	**PR**	**V**
5	10	10	5	35	35

Note: IA –Internal Assessment, EE- External Exam, PR- Performance, LR – Lab Record, V – Viva

MECHANICS OF FLUIDS LAB

Course Code: CIV2309 **Credit Units: 01**

Course Contents:

Experimental work will be based on the following papers:
Fluid Mechanics

FLUID MECHANICS LAB

List of Experiments

- Verification of Bernoulli‟s Theorem
- Experiment using Venturimeter
- Determination of coefficient of Discharge C_d, C_c, $C_!$ Using
- Circular/triangular/rectangular orifice
- To find major head losses in a pipe line
- To find minor head losses in a pipe line (sudden expansion/contraction/bend)

Examination Scheme:

IA				EE	
A	**PR**	**LR**	**V**	**PR**	**V**
5	10	10	5	35	35

Note: IA –Internal Assessment, EE- External Exam, PR- Performance, LR – Lab Record, V – Viva.

TERM PAPER (EVALUATION)

Course Code: CIV2331 **Credit Units: 02**

A term (or research) paper is primarily a record of intelligent reading in several sources on a particular subject.
The students will choose the topic at the beginning of the session in consultation with the faculty assigned. The progress of the paper will be monitored regularly by the faculty. At the end of the semester the detailed paper on the topic will be submitted to the faculty assigned. The evaluation will be done by Board of examiners comprising of the faculties.

GUIDELINES FOR TERM PAPER
The procedure for writing a term paper may consist of the following steps:
1. Choosing a subject
2. Finding sources of materials
3. Collecting the notes
4. Outlining the paper
5. Writing the first draft
6. Editing & preparing the final paper

1. Choosing a Subject
The subject chosen should not be too general.

2. *Finding Sources of materials*
a) The material sources should be not more than 10 years old unless the nature of the paper is such that it involves examining older writings from a historical point of view.
b) Begin by making a list of subject-headings under which you might expect the subject to be listed.
c) The sources could be books and magazine articles, news stories, periodicals, scientific journals etc.

3. *Collecting the notes*
Skim through sources, locating the useful material, then make good notes of it, including quotes and information for footnotes.
a) Get facts, not just opinions. Compare the facts with author's conclusion.
b) In research studies, notice the methods and procedures, results & conclusions.
c) Check cross references.

4. *Outlining the paper*
a) Review notes to find main sub-divisions of the subject.
b) Sort the collected material again under each main division to find sub-sections for outline so that it begins to look more coherent and takes on a definite structure. If it does not, try going back and sorting again for main divisions, to see if another general pattern is possible.

5. *Writing the first draft*
Write the paper around the outline, being sure that you indicate in the first part of the paper what its purpose is. You may follow the following:
a) statement of purpose
b) main body of the paper
c) statement of summary and conclusion
Avoid short, bumpy sentences and long straggling sentences with more than one main idea.

6. *Editing & Preparing the final Paper*
a) Before writing a term paper, you should ensure you have a question which you attempt to answer in your paper. This question should be kept in mind throughout the paper. Include only information/ details/ analyses of relevance to the question at hand. Sometimes, the relevance of a particular section may be clear to you but not to your readers. To avoid this, ensure you briefly explain the relevance of every section.
b) Read the paper to ensure that the language is not awkward, and that it "flows" properly.
c) Check for proper spelling, phrasing and sentence construction.

d) Check for proper form on footnotes, quotes, and punctuation.
e) Check to see that quotations serve one of the following purposes:
   (i) Show evidence of what an author has said.
   (ii) Avoid misrepresentation through restatement.
   (iii) Save unnecessary writing when ideas have been well expressed by the original author.
f) Check for proper form on tables and graphs. Be certain that any table or graph is self-explanatory.

Term papers should be composed of the following sections:

1) Title page
2) Table of contents
3) Introduction
4) Review
5) Discussion & Conclusion
6) References
7) Appendix

Generally, the introduction, discussion, conclusion and bibliography part should account for a third of the paper and the review part should be two thirds of the paper.

Discussion

The discussion section either follows the results or may alternatively be integrated in the results section. The section should consist of a discussion of the results of the study focusing on the question posed in the research paper.

Conclusion

The conclusion is often thought of as the easiest part of the paper but should by no means be disregarded. There are a number of key components which should not be omitted. These include:

a) summary of question posed
b) summary of findings
c) summary of main limitations of the study at hand
d) details of possibilities for related future research

Reference

From the very beginning of a research project, you should be careful to note all details of articles gathered.
The bibliography should contain ALL references included in the paper. References not included in the text in any form should NOT be included in the bibliography.
The key to a good bibliography is consistency. Choose a particular convention and stick to this.

Conventions

Monographs
Crystal, D. (2001), Language and the internet. Cambridge: Cambridge University Press.

Edited volumes

Gass, S./Neu, J. (eds.) (1996), Speech acts across cultures. Challenges to communication in a second language. Berlin/ NY: Mouton de Gruyter.
[(eds.) is used when there is more than one editor; and (ed.) where there is only one editor. In German the abbreviation used is (Hrsg.) for Herausgeber].

Edited articles

Schmidt, R./Shimura, A./Wang, Z./Jeong, H. (1996), Suggestions to buy: Television commercials from the U.S., Japan, China, and Korea. In: Gass, S./Neu, J. (eds.) (1996), Speech acts across cultures. Challenges to communication in a second language. Berlin/ NY: Mouton de Gruyter: 285-316.

Journal articles

McQuarrie, E.F./Mick, D.G. (1992), on resonance: A critical pluralistic inquiry into advertising rhetoric. Journal of consumer research 19, 180-197.

Electronic book

Chandler, D. (1994), Semiotics for beginners [HTML document]. Retrieved [5.10.'01] from the World

Wide Web, http://www.aber.ac.uk/media/Documents/S4B/.

Electronic journal articles
Watts, S. (2000) Teaching talk: Should students learn 'real German'? [HTML document]. German as a Foreign Language Journal [online] 1. Retrieved [12.09.'00] from the World Wide Web, http://www.gfl-journal.com/.

Other websites
Verterhus, S.A. (n.y.), Anglicisms in German car advertising. The problem of gender assignment [HTML document]. Retrieved [13.10.'01] from the World Wide Web, http://olaf.hiof.no/~sverrev/eng.html.

Unpublished papers
Takahashi, S./DuFon, M.A. (1989), Cross-linguistic influence in indirectness: The case of English directives performed by native Japanese speakers. Unpublished paper, Department of English as a Second Language, University of Hawai'i at Manoa, Honolulu.

Unpublished theses/ dissertations
Möhl, S. (1996), Alltagssituationen im interkulturellen Vergleich: Realisierung von Kritik und Ablehnung im Deutschen und Englischen. Unpublished MA thesis, University of Hamburg.
Walsh, R. (1995), Language development and the year abroad: A study of oral grammatical accuracy amongst adult learners of German as a foreign language. Unpublished PhD dissertation, University College Dublin.

Appendix
The appendix should be used for data collected (e.g. questionnaires, transcripts, ...) and for tables and graphs not included in the main text due to their subsidiary nature or to space constraints in the main text.

Assessment Scheme:

Continuous Evaluation: (Based on abstract writing, interim draft, general approach, research orientation, readings undertaken etc.)	40%
Final Evaluation: (Based on the organization of the paper, objectives/ problem profile/ issue outlining, comprehensiveness of the research, flow of the idea/ ideas, relevance of material used/ presented, outcomes vs. objectives, presentation/ viva etc.)	60%

PROJECT (WITH PRESENTATION AND EVALUATION)

Course Code: CIV2332 **Credit Units: 02**

Methodology:
Practical training is based on the theoretical subjects studied by students. An industry visit will be planned for each student and on-site practical training will be imparted with the help of the industry guide. The students are to learn various industrial, technical and administrative processes followed in the industry. On completion of the practical training the students are to present a report covering various aspects learnt by them and give a presentation on same.

Examination Scheme:

Feedback from industry/work place	20
Training Report	40
Viva	15
Presentation	25
Total	**100**

WORKSHOP / CERTIFICATION (DISCIPLINE SPECIFIC)

Course Code: CIV2333 **Credit Units: 01**

Objectives

A workshop is a series of educational and practical sessions. In the workshop, simulation exercise take place related to the topic which is conducted by speaker, which essentially means learning while practicing. This often involves students practicing their new skills during the event under the watchful eye of the instructor. The student will choose the option of workshop from amongst their concentration electives. The evaluation will be made by Board of examiners comprising of the faculties.

Workshop Outputs:

- Experience in **planning and preparing** a technical idea and concept
- Techniques and skills for a lively and **positive atmosphere** during the workshop
- Hands on experience in the processes of providing a training session (e.g. **lecturing and facilitating**)
- Development of self-critical awareness about an underlying engineering concept/ fundamental and applied research science
- Techniques for **monitoring and evaluating** the goals in conjunction to the engineering program the student is enrolled in.

Guidelines for Workshop

The procedure for earning credits from workshop consists of the following steps:

- There will be one credit per workshop attended.
- The student has to submit a certificate of participation for each workshop.
- The student has to submit a report of at least 500 words about the learning outcome from the workshop.

Evaluation Scheme:

Workshop attendance and certificate	Performance during training	Report of learning outcomes
50	25	25