30.09.2022

III Semester

ARCHITECTURAL DESIGN - III			
Course Code	**21ARC31**	CIE Marks	100
Teaching Hours/Week (L:T:P: S)	0:0:0:7	SEE Marks (VIVA)	100
Total Hours of Pedagogy	85	Total Marks	200
Credits	07	Exam Hours	-

Course objectives:
Sense of Place: Towards understanding the transformation of architectural space into ***a Place***.

OUTLINE:

> *"Everything about this kitchen was typical of a traditional kitchen. There was nothing special about it. But, perhaps it was just the fact that it was so very much; so naturally, a kitchen that had imprinted its memory indelibly on my mind. [...] memories like these contain the deepest architectural experience that I know. They are the reservoirs of the architectural atmosphere and images I explore in my work as an architect."*
>
> — Peter Zumthor, *Thinking Architecture* (1998, p.7-8)

When we as humans create a ***'place'***, we define it in multiple ways. We attribute it with an importance and an identity. We select the siting of the ***'place'*** in a geographical location, its activities, boundaries, and social neighborhoods, we give it meaning, infuse it with memories, and give it significance.

While ***space*** is created by physical and notional boundaries, ***place*** is characterized by the forces that signify it with an "architectural atmosphere". We could attempt to describe ***place*** as the complete human spatial experience - the spectrum of how one studies a ***place*** ranges from the abstract, physical/formal ***place***, to the one that lives in one's mind and memories.

A ***place*** may be indoors or outdoors, permanent or temporary, private or layered until it becomes very public, imbued with history, meaning, values and memories or new, radical, rebellious and looking into the future.

However, it is through the eyes of architecture that ***place*** is viewed at this semester.

Teaching-Learning Process (General Instructions)
These are sample Strategies, which teacher can use to accelerate the attainment of the various course outcomes.

1) The contents of the courses shall be taught in an application-oriented manner on a scientific and design basis. The course contents shall be taught and learned in lectures, seminars, labs or workshops, studio exercises and design projects, etc.
2) In-studio exercises the teachers shall take the lead to provide tasks and offer guidance for solutions finding. The students shall work either individually or in groups.
3) In design studios, the students contribute to the processing, analysis and solving of problems of direct professional practice, attended by faculty(s) entitled to conduct the studio and examine. The results shall be defended through drawings; models and reports and evaluated through periodic assessment and finally by a jury or panel, and finally, evaluated through periodic assessment and an end semester examination or viva voce.

COURSE OF STUDY – The primary architectural goal is going from **spaces** to **places.** Hence contextual elements and factors influencing the built environment should be identified and studied in detail.

KEYWORDS – site/situation, neighbourhood, memory, identity, belonging, defining characteristics/particularity of place (activity, need, function, scale, hierarchy, perception).

MODE OF STUDY

A. EXPERIENCE

1. Visits to different ***places***, sacred places and the mundane, bridging places, edges of various places, entrance places, transitional places, dwelling places, semi-public and public places, neighbourhood built-open social spaces, informal space architecture, informal settlements, informal public architecture - to name just a few. The attempt here is to understand the *experience of a space* that can enable a person to define its particularities as *a place.* An understanding of being "inside" that particular place, versus "outside" it, needs to be explored. The interrelation and interface of formally designed spaces and informal spaces must also be included since both in tandem make up our built environment. [Space making to be portrayed for both formal and informal spaces (along with respective field studies) through different typologies of spaces - markets, settlements, worship places, eateries, etc. The idea is to explicitly make students understand that the built environment consists of formal architecture, built by architects with legal rights to land but a major part of it consists of informal spaces which crop up due to societal and spatial circumstances. Since both cannot be observed in singularity, they should be studied parallelly to have a holistic understanding of the world.]
2. Students need to experience and study at least 3 different types (including an informal space) of *places*, and what differentiates these from others.

B. EXPLORATION

1. Sketches, models, drawings, photographs, collages, short films, that can illustrate the specificity of that particular place. Architectural representation through various media that evoke the ***essence of a place***.
2. Studies of how scale, proportions, physicality (including exposure of walls, roofs, windows to the sun), direction of winds and breeze, local ecology (animal and plant life), relationships with local water bodies and groundwater, materiality and situation, affect a ***place*** and how it is perceived.

3. Studies of less tangible aspects of a ***place***, like identity, belonging, memory, and stories, through discussions, documentation, and other media. **Their architectural representation is an important conclusion of this exploration.**

This period could include book readings, seminars, and field trips.

C. DESIGN TASKS

2 design projects (minor & major) that address the study, exploration and expression of the ***Sense of Place*** in all its aspects (suggested projects include but not limited to temporary shelters, pavilions, informal social open spaces, context specific community driven built forms like health centres) .

Example: Place: The front entrance of dwellings. Visit to a traditional neighbourhood, and a contemporary neighbourhood. What is the nature of this place? What are the moments of transience? What is the character of space before and after the front? Rangolis/kollams, thresholds, gateways, doors, verandahs/jaglis, toranas, porches.
Example: The social spaces within an informal settlement and planned residential neighbourhood, The organic space utility at a roadside tea stall and a cafe. What is the character and spirit of the place? What are the elements and forces that create the space. How does the community/people self organize themselves?

After careful study, a design task based on the sense of place in the same context can be formulated.
An emphasis on the translating of one's observations well - primarily in architectural drawing as well as in other methods that support it.

12 Weeks for all A, B, & C, including Design Tasks. These need to be scheduled in order A, B and then C.

NOTES:

1. Discussions, book reading as well as writing, seminars, field trips, and group as well as individual study are important for the development of the architecture student's understanding of essential concepts such as that of a ***Sense of Place.***

The **DESIGN TASKS *should be interspersed*** with the experience and exploration of the idea of ***Sense of Place***, and not necessarily attempted separately.

Course outcome (Course Skill Set)

To understand how architectural space becomes more than just a physical entity because of the way it has been located, sited, edged, layered, and imbued with values and meaning to transform it into its own entity or ***'place'*** through both informal and formal spaces.

SHAPE OF THINGS TO COME

The inquiry through exploration and creation of a place from its bare spatial existence leads the architecture student to the next phase where he/she studies the particularity of **the dwelling**.

All spaces "house" activities, whereas a dwelling has a deeper, and more specific character. As one progresses through the course, we move from a wider, more general study of architecture, to a more complex, specific, and nuanced understanding of different areas of architectural design.

Assessment Details (both CIE and SEE)

(methods of CIE need to be defined topic wise i.e.- Studio discussions, Reviews, Time problems, test, Seminar or micro project)

The weightage of Continuous Internal Evaluation (CIE) is 50% and for Semester End Exam (SEE) is 50%. The student has to obtain a minimum of 50% marks individually both in CIE and 40 % marks in SEE to pass. Semester End Exam (SEE) is conducted for 100 marks (Viva-voce) and a minimum of 50% (50 marks out of 100) in the sum total of the CIE (Continuous Internal Evaluation) and SEE (Semester End Examination) taken together. Based on this grading will be awarded.

Continuous Internal Evaluation:

Methods suggested:

1. Studio discussions, Reviews, Time problems, CIE tests, Seminar or micro project,Quiz, report writing etc.
2. The class teacher has to decide the topic for the Design and Seminars if any, in the beginning only. The teacher has to announce the methods of CIE for the subject in advance in writing.

Semester End Examination:

1. The student needs to submit his/her works done throughout the semester, including rough sheets for the Viva examination, at least one day prior to the Viva work examination to the course teacher/coordinator.
2. The Viva-voce will be evaluated by an external teacher appointed by the University along with Course teacher or an internal examiner.
3. The SEE marks list generated is to be signed by both internal and external examiners and submitted to VTU in the sealed cover through the Principal of the institution.

Suggested Learning Resources:

Books

1. Steen Eiler Rasmussen, "Experiencing Architecture", MIT Press, 2nd Edition, 1962
2. Edward Relph , "Place and Placelessness", Sage Publications, 2008
3. David Seamon , "Life Takes Place", Routledge , 2018

4. Yi Fu Tuan , "Space And Place: The Perspective of Experience", Univ Of Minnesota Press , 2001
5. Gaston Bachelard , "The Poetics of Space", French university publishing , 1958
6. D'Arcy Wentworth Thompson ,"On Growth and Form", Cambridge University Press, 1917.
7. Martin Heidegger, "Building, Dwelling, Thinking, (Poetry, Language, Thought), 1951
8. Tim Cresswell , "Place: An Introduction", John Wiley & Sons, 2014
9. Marc Auge , "Non-Places: An Introduction to Supermodernity" , Verso, 1995
10. Peter Zumthor, Brigitte Labs-Ehlert "Atmospheres: Architectural Environments. Surrounding Objects", Birkhauser, 2006
11. Christian Norberg Schulz, "Genius Loci: Towards a Phenomenology of Architecture", New York : Rizzoli , 1979
12. Christopher Alexander, "The Timeless Way of Building", Oxford University Press , 1979
13. Doreen Massey, "For Space", Sage Publications , 2005
14. Christian Norberg Schulz, "Architecture: Presence, Language, Place", 1996
15. Peter Zumthor , "Thinking Architecture", Lars Müller, 1998

Web links and Video Lectures (e-Resources):

- https://ndl.iitkgp.ac.in
- https://www.youtube.com/watch?v=zJJEpLCOa24
- https://www.completecommunitiesde.org/planning/inclusive-and-active/placemaking-intro/
- https://www.youtube.com/watch?v=IBOChA1LJMc
- https://www.youtube.com/watch?v=sw9zpH717ts
- https://www.youtube.com/watch?v=pBJprhsBUrg
- https://www.youtube.com/watch?v=4VxDoVuURNE
- https://www.youtube.com/watch?v=GvWOaKZPtWs
- https://www.youtube.com/watch?v=uLXNzhGDVr8

Activity Based Learning (Suggested Activities in Class)/ Practical Based learning

Activity 1- Understanding of how people organize themselves and create a place for them from a space. Sense of place and space is true for a formal and informal space. There is a good scope here to demarcate and study both kinds leading to a holistic understanding of the built environment.

A field study of one formal and one informal space, accompanied by a report of elements of an informal settlement / koliwadi / informal public place (including any kind of informal architecture like dhaba, chowk under a tree etc.) to understand the sense, essence (both tangible and intangible) . In addition to this, doing a comparison of both formal and informal public places (one that was designed and one that was informally accepted) and highlighting the distinctions. Study and document space planning , materials, circulation, forces, how people get attracted to the places(organic), what led to the growth and development of these informal entities and examining for any kind of interdependency between formal and the nearby informal spaces. In addition, ponder upon the health impacts of formal and informal spaces.

Example: roadside eatery/tea stall vs cafe/ tea shop, formal (mall) vs informal market

III Semester

Materials and Methods in Building Construction -III			
Course Code	**21ARC32**	CIE Marks	50
Teaching Hours/Week (L:T:P: S)	1:0:0:3	SEE Marks(VIVA)	50
Total Hours of Pedagogy	50	Total Marks	100
Credits	04	Exam Hours	-

Course objectives:

1. *To acquaint the students with construction practices pertaining to RCC, floors, roofs and flooring alternatives, masonry plastering and paint finishes.*
2. *To acquaint the students with the materials used in such construction practices, their properties, and effect on climate and life cycle of the building.*

Teaching-Learning Process (General Instructions)

These are sample Strategies, which teacher can use to accelerate the attainment of the various course outcomes.

1. The subject teacher to link the studio work with on site work by arranging site visits in the nearby areas.
2. The Subject teacher to highlight the techniques of reinforcement used in R C C works.

Module-1

Introduction to RCC Slabs: one way, two-way slabs, cantilever slabs, sloping RCC roof, one way continuous, and two ways continuous.

1. **RCC one way slab and one-way continuous slabs: Principles** and methods of construction.
2. **RCC two way slab and two-way continuous slabs:** Principles and methods of construction.
3. **RCC cantilever slabs and sloping slab**: Principles and methods of construction.
4. RCC: Qualitative understanding of basic thermal properties such as conduction, insulation, thermal mass and the material's appropriateness and/or demerits for hot climates.

Teaching-Learning Process	Minimum one plate on each construction topic. Site visits to be arranged by studio teachers. Study of material applications in the form of a portfolio. This is for progressive marks.

Module-2

5. **Vaults & domes I**: Principles and methods of construction including techniques and details of form-work. Construction of Masonry Vaults and Domes – Concepts of Reinforced Concrete Domes and Vaults.
6. **Vaults & domes II:** Concepts and construction of Reinforced concrete domes and vaults with formwork design.
7. Vaults & domes III: Qualitative influence of domes and vaults on building's interaction with solar heat and ventilation.

Teaching-Learning Process	Minimum one plate on each construction topic. Site visits to be arranged by studio teachers. Study of material applications in the form of a portfolio. This is for progressive marks.

Module-3

8. Introduction to Floor finishes including Toilet flooring: Mud flooring, Murrum flooring, and Stone flooring in marble, granite, tandur/kota stone, other flooring in mosaic, terrazzo, ceramic tiles, wooden flooring and polished concrete, low embodied (grey) energy and sustainable flooring: Laying, Fixing and Finishes.
9. Introduction to Paving: Cast in situ concrete including vacuum dewatered flooring, concrete tiles, interlocking blocks, clay tiles, brick and stone.

Teaching-Learning Process	Minimum one plate on each construction topic. Site visits to be arranged by studio teachers. Study of material applications in the form of a portfolio. This is for progressive marks.

Module-4	
10. **Introduction to internal and external masonry plastering and paint finishes:** Materials – Paints, varnishes and distempers, emulsions, cement based paints, external reflective paints, and natural paints (Activity 1). Constituents of oil paints, characteristics of good paints, types of paints and process of painting different surfaces. Types of varnish, methods of applying varnish and French polish and melamine finish.	
Teaching-Learning Process	Minimum one plate on each construction topic. Site visits to be arranged by studio teachers. Study of material applications in the form of a portfolio. This is for progressive marks.
Module-5	
11. **Method of plastering (Internal and External):** smooth, rough, textured, grit plaster etc. Use of various finishes viz., lime, cement, plaster of Paris, buffing etc. 12. **Introduction to wet Cladding:** wet cladding in stone, marble, etc. including toilet cladding. 13. **Alternative roofing:** Jack Arch, Madras terrace, stone slab roof, inverted earthen-pot roof, 'Guna' roof (burnt clay vaulted roof), GI/tin sheet roofing, cement corrugated sheets, etc.(low cost roofs and materials in Informal households and health issues) (Activity 2) (Activity 3)	
Teaching-Learning Process	Minimum one plate on each construction topic. Site visits to be arranged by studio teachers. Study of material applications in the form of a portfolio. This is for progressive marks.

Course outcome (Course Skill Set)

1. The students will be able to understand the structural drawings of structural consultants.
2. The students will be able to check the structural works on site.

Assessment Details (both CIE and SEE)

(methods of CIE need to be define topic wise i.e.- Submission of construction drawing sheets, Journal of materials, Multiple Choice Question, Quizzes, Open book test, Seminar or micro project)

The weightage of Continuous Internal Evaluation (CIE) is 50% and for Semester End Exam (SEE) is 50%. The student has to obtain a minimum of 50% marks individually both in CIE and 40% marks in SEE to pass. Semester End Exam (SEE) is conducted for 50 marks (Viva-voce). Based on this grading will be awarded.

Continuous Internal Evaluation:

1. Methods suggested: Submission of Construction sheets, Journal of Materials, Test, Written Quiz, Seminar, report writing etc.
2. The class teacher has to decide the topics for the test, Written Quiz, and Seminar. In the beginning, only the teacher has to announce the methods of CIE for the subject.

Semester End Examination:

1. The student need to submit his/her works done throughout the semester, including rough sheets for Viva-voce examination, atleast one day prior to Viva-voce examination to the course teacher/coordinator.
2. The work will be evaluated by an external teacher appointed by the University along with Course teacher or an internal examiner.
3. The SEE mark list generated is to be signed by both internal and external examiners and submitted to VTU in sealed cover through the Principal of the institution.

Suggested Learning Resources:

1) **Books**Chudley , Construction Technology, ELBS, 1993
2) Barry, Construction of Buildings, East West Press, 1999

Web links and Video Lectures (e-Resources):

- https://ndl.iitkgp.ac.in
- https://www.youtube.com/watch?v=qH9Gjd23u6E
- https://www.youtube.com/watch?v=vT6JJGlrZyU
- https://www.youtube.com/watch?v=APc0EXTw2KQ&t=1112s
- https://www.youtube.com/watch?v=2NChfTslOG4
- https://www.youtube.com/watch?v=z7K99RUlfVk&t=5s
- https://www.youtube.com/watch?v=LyngzAYIuZs
- https://www.youtube.com/watch?v=VFuw5Q5Innk
- https://www.youtube.com/watch?v=13RxjXvaVKU

Activity Based Learning (Suggested Activities in Class)/ Practical Based learning

Activity 1- Map and study vernacular as well as contemporary use of natural paints made out of natural extracts.

Activity 2- Observe and understand technical construction methods and materials (as studied in this module) in formal and informal settlements and document the same in a report.

Activity 3 - Retrofit section of the college building roof with clay pots or empty/hollow recycled plastic containers and cover with temporary tiling and qualitatively assess its influence on room temperatures experienced in the floor immediately below.

III Semester

Climatology			
Course Code	**21ARC33**	CIE Marks	50
Teaching Hours/Week (L:T:P: S)	3:0:0:0	SEE Marks	50
Total Hours of Pedagogy	40	Total Marks	100
Credits	03	Exam Hours	03

Course objectives:

To develop the knowledge required for understanding the influence of Climate on architecture including the environmental processes which affect buildings, such as thermal, lighting, etc. Similarly, to develop the understanding of how construction activities influence and impact the micro-macro climate.

Teaching-Learning Process (General Instructions)

These are sample Strategies, which teacher can use to accelerate the attainment of the various course outcomes.

1. Use of theory, activities, practicals. Numericals, assignment and tutorial for teaching.
2. Evaluation by quiz, tests, classroom activities.

Module-1

1. **Introduction to Climate-1:** The Climate-built form interaction; some examples. Elements of climate, measurement and representations of climatic data. Classifications and Characteristics of tropical climates.
2. **Introduction to Climate-2:** Major climatic zones of India. Site Climate: Effect of landscape elements on site/micro climate.
3. **Interrelation between the human built environment and the natural environment:** Historical trajectory of environmental degradation and climate change as a function of humankind's architectural and industrial interventions.
4. **Introduction to the current Climate crisis and targets-** Documentation of changes in climate, environmental conditions over time and their ramifications on the built environment and the roles and responsibilities of the profession of architecture. Develop a climate change timeline.
5. **Thermal comfort-1:** Thermal balance of the human body, basic understanding of psychrometric chart and related parameters (dry-bulb temperature, wet-bulb temperature, absolute humidity, relative humidity, enthalpy, specific volume), psychrometric basis of human thermal comfort, thermal comfort factors (including mean radiant temperature and air speed),Thermal Comfort Indices (Effective temperature, corrected effective temperature, bioclimatic chart, tropical summer index by CBRI Roorkee), Indian Model of Adaptive Comfort (IMAC) and comparison with global thermal comfort models, Measuring indoor air movement: Kata-thermometer, and measuring indoor radiation: Globe thermometer.

Teaching-Learning Process	Theory accompanied with classroom activities, quizzes and practicals demonstrating usage of different instruments.

Module-2

6. **Thermal comfort-2:** Uses of psychrometric chart for climate analysis, Calculation of Overheated and under heated period (based on air temperature only) for locations in Climatic zones and their optimization in terms of solar heating and Passive cooling desired.
7. **Sun-path diagram:** Solar geometry & design for orientation and use of solar charts in climatic design.
8. **Thermal performance of building elements:** Effect of thermo-physical properties of building materials and elements on indoor thermal environment. Convection, Radiation, concept of Sol-air temperature and Solar Gain factor. Thermal properties and performance of different materials used in construction such as Mud, Wood, Bamboo, RCC, Steel, Glass, GI, Tin, etc and relating it to Thermal Stress. Assessment of passive cooling possibilities and natural night-sky radiation of roofing materials and retrofitted radiant-barrier materials.

Teaching-Learning Process	Theory accompanied with classroom activities, periodic tests and numericals.

Module-3

9. **Thermal Heat gain or loss**: Steady state and periodic heat flow concepts (conduction, convection and radiation), conductivity, resistivity, diffusivity, emissivity, thermal capacity, time lag and 'U' value. Calculation of U value for multi-layered walls and Roof, Temperature Gradient, Inference of time lags from Graphs for walls and Roof. Construction techniques for improving thermal performance of walls and roofs. (Effect of density, Insulation, and Cavity)

Teaching-Learning Process	Theory accompanied with classroom activities, periodic tests and numericals.

Module-4

10. **Shading devices**: Optimizing Design of Shading devices effective for overheated periods while allowing solar radiation for under heated periods for different wall orientations.
11. **Natural ventilation:** Functions of natural ventilation, Stack effect due to thermal force and wind velocity. Air movements around buildings, Design considerations and effects of openings and external features on internal air flow and Wind shadows.
12. Natural/passive cooling: Introduction to passive techniques of cooling such as evaporative cooling (including basic assessment of its cooling potential using the psychrometric chart for various climatic zones), earth tubing, wind scoops, roof ponds, shaded courtyards etc.

Teaching-Learning Process	Theory accompanied with applicative classroom activities like shading device design, periodic tests and quizzes.

Module-5

13. **Day Lighting:** Nature of natural light, its transmission, reflection, diffusion, glare. Advantages and limitations in different climatic zones, North light, Daylight factor, components of Daylight devices.
14. **Climatic Design considerations 1**: Literature study of relevant traditional and contemporary building examples.
15. **Climatic Design considerations 2**: Two or more Indian case studies, including an informal settlement, example Dharavi or more local instances and one international for each climatic zone.
16. Climatic Design considerations 3: Keeping in mind the current climatic scenario and how it is changing rapidly. Understanding how design tools can help in the making of climate-friendly and resilient designs.

Teaching-Learning Process	Theory accompanied with classroom activities, case studies and numericals.

Course outcome (Course Skill Set)

At the end of the course the student will be able to :

1. Understand the elements of weather and climate, phenomena of heat flow, thermal comfort, solar shading and day lighting in an applicative manner
2. Analyse and interpret the relationships between atmospheric processes and regional-local climates.

Use climatology and its understanding of thermal comfort indices to assist them in climate-responsive building design.

Assessment Details (both CIE and SEE)

The weightage of Continuous Internal Evaluation (CIE) is 50% and for Semester End Exam (SEE) is 50%. The minimum passing mark for the CIE is 50% of the maximum marks (25 marks). A student shall be deemed to have satisfied the academic requirements and earned the credits allotted to each subject/ course if the student secures not less than 40% (20 Marks out of 50)in the semester-end examination(SEE), and a minimum of 50% (50 marks out of 100) in the CIE (Continuous Internal Evaluation) and a minimum of 50% (50 marks out of 100) in the sum total of the CIE (Continuous Internal Evaluation) and SEE (Semester End Examination) taken together. Based on this grading will be awarded.

Continuous Internal Evaluation:

Three Unit Tests each of **20 Marks (duration 01 hour**)

1. First test at the end of 5th week of the semester
2. Second test at the end of the 10th week of the semester
3. Third test at the end of the 15th week of the semester

Two assignments each of **10 Marks**

4. First assignment at the end of 4th week of the semester
5. Second assignment at the end of 9th week of the semester

Group discussion/Seminar/quiz any one of three suitably planned to attain the COs and POs for **20 Marks** (**duration 01 hours**)

6. At the end of the 13th week of the semester

The sum of three tests, two assignments, and quiz/seminar/group discussion will be out of 100 marks and will be **scaled down to 50 marks**

(to have less stressed CIE, the portion of the syllabus should not be common /repeated for any of the methods of the CIE. Each method of CIE should have a different syllabus portion of the course).

CIE methods /question paper is designed to attain the different levels of Bloom's taxonomy as per the outcome defined for the course.

Semester End Examination:

Theory SEE will be conducted by University as per the scheduled timetable, with common question papers for the subject (**duration 03 hours)**

1. The question paper will have ten questions. Each question is set for 20 marks.
2. There will be 2 questions from each module. Each of the two questions under a module (with a maximum of 3 sub-questions), **should have a mix of topics** under that module.

The students have to answer 5 full questions, selecting one full question from each module.

Theory paper will be out of 100 marks and will be **scaled down to 50 marks.**

Suggested Learning Resources:

Books

1. Koenigsberger, Manual of Tropical Housing & Buildings (Part-II), Orient Longman, Bombay, 1996.
2. Arvind Krishan, Baker & Szokolay, Climate Responsive Architecture, Tata McGraw Hill, 2002.

3. Martin Evans; Housing, Climate, and Comfort; Architectural Press (1 March 1980)
4. Donald Watson and Kenneth Labs; Climatic Building Design - Energy-Efficient Building Principles and Practice; McGraw-Hill Book Company, 1983.
5. Mili Majumdar (Editor); Energy Efficient Buildings in India; The Energy and Resources Institute, TERI (28 February 2009)
6. Baruch Givoni; Passive and Low Energy Cooling of Buildings; John Wiley & Sons (1 July 1994).
7. Energy Conservation Building Code (ECBC) 2007; Bureau of Energy Efficiency, Ministry of Power, Government of India.

Web links and Video Lectures (e-Resources):

- https://ndl.iitkgp.ac.in
- https://youtube.com/watch?v=6D4ow2WulVA
- https://www.youtube.com/watch?v=8wweKGJDoG0
- https://www.youtube.com/watch?v=yEWT_XmqCtQ
- https://www.youtube.com/watch?v=SwZ1FEgangE
- https://www.youtube.com/watch?v=Ouvk9t5T9X4
- https://www.youtube.com/watch?v=BgOy3U34muY
- https://www.youtube.com/watch?v=pCrZEJATeKQ
- https://www.youtube.com/watch?v=fnhhj4vTzPQ
- https://www.youtube.com/watch?v=YbigQjL6oKo
- https://www.youtube.com/watch?v=fhXJ_1Qiou4
- https://www.youtube.com/watch?v=hRYuUqYI3nM

- web sites of
- MNRE
- GRIHA
- IGBC
- LEED
- ISHRAE
- BEE

Activity Based Learning (Suggested Activities in Class)/ Practical Based learning

Activity 1 - Heat Waves & Modern Buildings
Activity 2 - Air Conditioners' Other side '
Activity 3 - Thermal performance in Informal settlements
Activity 4 - Thermal Comfort Conditions'
Activity 5 - Thermal Comfort Inequity
Activity 6 - Thermal Comfort Mapping
Activity 7 - Thermal Comfort Variation Over Time
Activity 8 - Thermal Comfort Zone Representation
Activity 9 - Understanding the thermal comfort gap in formal housing and informal housing.
Activity 10 - Heat Flow Analysis
Activity 11 - Conduction and a cool floor, Convection and a cot Details found in Fairconditioning's Pedagogy Manual for Architecture Teachers - Building Heat Transfer Module: http://fairconditioning.org/knowledge-resources/#204-heat-transfer
Activity 12 - Convection Inside A Room Details found in Fairconditioning's Pedagogy Manual for Architecture Teachers - Building Heat Transfer Module: http://fairconditioning.org/knowledge-resources/#204-heat-transfer
Activity 13 - Evaporative Cooling Effect from a Wet Cloth Details found in Fairconditioning's Pedagogy Manual for Architecture Teachers - Sustainable Cooling Technology Module: http://fairconditioning.org/knowledge-resources/#210-sust-cooling-technologies-1553498467
Activity 14 - Details found in Fairconditioning's Pedagogy Manual for Architecture Teachers - Sustainable Cooling Technology Module: http://fairconditioning.org/knowledge-resources/#210-sust-cooling-technologies-1553498467
Activity 15 - Details found in Fairconditioning's Pedagogy Manual for Architecture Teachers - Passive Design Module: http://fairconditioning.org/knowledge-resources/#230-passive-design-1552544785
Numerical based learning- Sol-air temperature and Solar Gain factor, Heat Gain and U-value

III Semester

History of Architecture -III			
Course Code	**21ARC34**	CIE Marks	50
Teaching Hours/Week (L:T:P: S)	3:0:0:0	SEE Marks	50
Total Hours of Pedagogy	40	Total Marks	100
Credits	03	Exam Hours	03

Course objectives:

To provide an introduction to the culture and architecture of Islamic and Colonial periods in India and to provide an understanding of their evolution in various stylistic modes, characterized by technology, ornamentation, and planning practices.

Teaching-Learning Process (General Instructions)

These are sample Strategies, which teacher can use to accelerate the attainment of the various course outcomes.

1. Use of theory, activities, sketches, drawings, assignment and tutorial for teaching.
2. Evaluation by quiz, tests, classroom activities.

Module-1

1. **Islamic Architecture –** Early phase; It's emergence in 11th century AD in India. General characteristics of Indian Islamic Style.

2. **Early Phase –I: –** Slave and Khilji phase – a) Monumental: Quawat Ul Islam, mosque and tomb of Iltumish , Qutub Minar , Alai Minar. b) Civic space: Enlargement of Quwaat Ul Islam Complex and Alai Darwaza.

3. **Early Phase –II: -** Tugluq , Sayyid & Lodi dynasties. – Architectural character- a) Monumental arch : Tomb of Ghia–Suddin Tugluq, Tomb of Firoz shah Tugluq, Shish Gumbad & Mubarak shah Sayyid's tomb. b) Civic Space : Khirkhi masjid Delhi, Firoz Shah kotla – public and private space, madrassa design with Firoz shah's tomb.

Teaching-Learning Process	1) The teacher can use PPTs, Videos to discuss the buildings, style of architecture. 2) The students need to sketch the buildings for its unique qualities. 3) Quizzes, models, seminars from students can be encouraged.

Module-2

4. **Provincial style – I –** Jaunpur and Bengal – Architectural character
   a) Monumental arch : Atala and Jami masjid Bengal – Adina masjid Pandua, Ek Lakhi Tomb
   b) Civic Space : Elements like entrance pylon : Jaunpur, Dakhil – Darwaza at Gaur, space within & outside of examples like Gunmount or Badasona Masjid.

5. **Provincial style – II –** Ahmedabad and Bijapur – Architectural characteristics-a) Monumental arch:Ahmedabad, Vavs of Gujarat: Bijapur- Golgumbaz, Ibrahim Rauza, Jami masjid. B) Civic space: Ahmedabad-Sarkhej complex, Teen darwaza. Bijapur-Ibrahim Rauza, Bauli (Water tank). c) Domestic architecture.

Teaching-Learning Process	1) The teacher can use PPTs, Videos to discuss the buildings, style of architecture. 2) The students need to sketch the buildings for its unique qualities. 3) Quizzes, models, seminars from students can be encouraged.

Module-3

6. **Provincial style – III-** Bidar and Gulbarga-General Character. a)Monumental: Bidar-Jami masjid. Gulbarga-Jami masjid. B) Civic space: Treatment of space within mosque and enclosed space for gathering at both places. c) Domestic: Bidar-Madrassa of Mond, Gawan.

7. **Moghul Architecture-I** –Architectural Character. a)Monumental arch: Humayun's tomb, Fatehpursikri layout, Jami masjid, Diwan-I-khas, Tomb of Salim chisti. B)Civic space- Buland darwaza, Garden(Humayun's tomb). c) Domestic- Fatehpursikri, Birbal's house, Jodhabai's palace.

Teaching-Learning Process	1) The teacher can use PPTs, Videos to discuss the buildings, style of architecture. 2) The students need to sketch the buildings for its unique qualities. 3) Quizzes, models, seminars from students can be encouraged.

Module-4

8. **Mughal Architecture-II** –a) Monumental arch: Akbar's tomb, Taj mahal, Itmaud Daula b) Civic space: Mughal Gardens, Diwan-I-am, Red Fort, Meena bazaar, Red Fort, Guesthouse (Taj mahal complex) c) Domestic: Public elements like 'Serai'-traveler's shelters, Nobles' houses etc.

9. **Colonial Architecture-I** – Early phase-Establishment of forts, warehouses etc-Building typologies and general architectural character of Colonial Indian Architecture.

Teaching-Learning Process	1) The teacher can use PPTs, Videos to discuss the buildings, style of architecture. 2) The students need to sketch the buildings for its unique qualities. 3) Quizzes, models, seminars from students can be encouraged.

Module-5

Colonial Architecture-II – Study of Examples a) Monumental- Governor's house, Calcutta, Town hall, Victoria Terminus (Chhatrapati Shivaji Station) Mumbai, Madras Club, Pacchiappa College Chennai, Mayo Hall, Museum, and Central College Bangalore.

Deputy Commissioner's Office, Palace, Mysore, Examples from Hubli and Dharwad, Karnataka. b)Civic spaces: Parade Ground ,MG Road, Bangalore, Civic spaces around Mysore Palace c) Domestic Bungalows from Calcutta, Chennai, Bangalore and Mysore Railway Stations, Administrative Buildings etc

11. **Colonial Architecture-III** – a) Design of New Capital of Delhi- Contributions of Edward Lutyens, Herbert Baker(Rashtrapati Bhavan), Layout of New Delhi, Parliament House, North Block and South Block at Rashtrapathi Bhavan. B) Monumental: Civic space-Rajpath, Janpath, India Gate etc.

12. **Colonial Architecture-IV** – Examples from Goa-Se Cathedral, Cathedral of Bom Jesus (Monumental Architecture). Architecture from Pondicherry-Indian and French Quarters(Domestic Architecture). Brief summary of Dutch and Danish settlements.

NOTE: *The following may be made a part of progressive marks:*

1) A Portfolio containing analysis of spaces, functions, and forms (Individual submission).
2) Group studies through Photographic documentation of local/ regional examples or study models of the examples.

Teaching-Learning Process	1) The teacher can use PPTs, Videos to discuss the buildings, style of architecture. 2) The students need to sketch the buildings for its unique qualities. 3) Quizzes, models, seminars from students can be encouraged.

Course outcome;

1) The students will be able to learn and compare various styles of Architecture.
2) The students will be able to appreciate the scale of buildings.

Assessment Details (both CIE and SEE)

The weightage of Continuous Internal Evaluation (CIE) is 50% and for Semester End Exam (SEE) is 50%. The minimum passing mark for the CIE is 50% of the maximum marks (25 marks). A student shall be deemed to have satisfied the academic requirements and earned the credits allotted to each subject/ course if the student secures not less than 40% (20 Marks out of 50)in the semester-end examination(SEE), and a minimum of 50% (50 marks out of 100) in the CIE (Continuous Internal Evaluation) and a minimum of 50% (50 marks out of 100) in the sum total of the CIE (Continuous Internal Evaluation) and SEE (Semester End Examination) taken together. Based on this grading will be awarded.

Continuous Internal Evaluation:

Three Unit Tests each of **20 Marks (duration 01 hour**)

- First test at the end of 5th week of the semester
- Second test at the end of the 10th week of the semester
- Third test at the end of the 15th week of the semester

Two assignments each of **10 Marks**

- First assignment at the end of 4th week of the semester
- Second assignment at the end of 9th week of the semester

Group discussion/Seminar/quiz any one of three suitably planned to attain the COs and POs for **20 Marks** (**duration 01 hours**)

- At the end of the 13th week of the semester

The sum of three tests, two assignments, and quiz/seminar/group discussion will be out of 100 marks and will be **scaled down to 50 marks**

(to have less stressed CIE, the portion of the syllabus should not be common /repeated for any of the methods of the CIE. Each method of CIE should have a different syllabus portion of the course).

CIE methods /question paper is designed to attain the different levels of Bloom's taxonomy as per the outcome defined for the course.

Semester End Examination:

Theory SEE will be conducted by University as per the scheduled timetable, with common question papers for the subject (**duration 03 hours)**

- The question paper will have ten questions. Each question is set for 20 marks.
- There will be 2 questions from each module. Each of the two questions under a module (with a maximum of 3 sub-questions), **should have a mix of topics** under that module.

The students have to answer 5 full questions, selecting one full question from each module..

Theory paper will be out of 100 marks and will be **scaled down to 50 marks.**

Suggested Learning Resources:

Books

1) Tadgel, C. History of Architecture in India, Phaidon Press, 1990
2) Brown, Percy. Indian Architecture, Islamic Period, Taraporavala and sons, 1987.
3) Indian Architecture (Islamic Period)- Satish Grover

Web links and Video Lectures (e-Resources):

- https://ndl.iitkgp.ac.in
- https://www.youtube.com/watch?v=OkyhYqLEFm8
- https://www.youtube.com/watch?v=Nr1LAUg5M64
- https://www.youtube.com/watch?v=9gqxLZ-vC6s

Activity Based Learning (Suggested Activities in Class)/ Practical Based learning

1) Sketching of the historical buildings
2) Measured drawing of a monument in the nearby area.

30.09.2022

III Semester

Building Services –I(Water Supply and Sanitation)			
Course Code	**21ARC35**	CIE Marks	50
Teaching Hours/Week (L:T:P: S)	3:0:0:0	SEE Marks	50
Total Hours of Pedagogy	40	Total Marks	100
Credits	03	Exam Hours	3

Course objectives:

1. *To impart the knowledge and skills required for understanding the role of essential services of water supply and sanitation and their integration with architectural design.*
2. *To understand sustainability issues of water supply and sanitation systems.*

Teaching-Learning Process (General Instructions)

These are sample Strategies, which teacher can use to accelerate the attainment of the various course outcomes.

Site Visits to:

1. Water Treatment Plants, Sewage Treatment Plants, LPG & HSD Yards.
2. High Rise Residential Building – Plumbing (water supply, drainage)
3. Commercial Buildings like IT Campus, Hotel & Hospital for acquaintance of installation & space requirements.
4. Informal settlements

Assignment Submissions for Progressive Marks:

a) *Layout of Water supply and Sanitation with all fixtures in Kitchen, Bath and Utility for a small Residence i.e. Plan and Section, Terrace plan with Rainwater down take pipes, Sump and OHT calculation design.*

b) *Schematic diagram of similar study for a Basement floor.*

c) *Portfolio on*

I. *Solid waste management and*

II. *Fire fighting schematic plans*

Module-1

2) Introduction to Environment and Health Aspects: History of Sanitation with respect to human civilization, Importance of Health, Hygiene Cleanliness, Waterborne, Water-related, Water based, Epidemic diseases, Conservancy to water carriage system, Urban and Rural sanitation

Water Supply: Source of Water supply – Municipal, bore well, river, etc, Quantity of water for different usages like Domestic, Hot water, Flushing, Gardening, Commercial, Industrial Applications, Assessment of requirement for different uses, Quality of supply for different uses as per national and international standards, Treatment of water for different uses, filtration, softening, disinfection, Storage and pumping – gravity system, hydro-pneumatic system, Distribution of water to fixture and fittings, schematic diagrams, Swimming pool, water bodies, Efficient usage of water

Teaching-Learning Process	1) Visit to a water treatment plant 2) Quizzes on the various issues of water supply.

Module-2

3) **Sewerage System:** Assessment of sewage generated, Collection of sewage / wastewater from all sources, schematic diagram, Conveyance of sewage – gully trap, chamber, manhole, intercepting trap, grease traps, backflow preventer, Materials of construction of sewerage network – PVC, uPVC, HDPE, corrugated PP pipes, Objective of Sewage treatment, type of treatment, aerobic, anaerobic, Ventilation of STP, Space requirements.

4) **Storm water Management:** Assessment, quantification of rainfall, flood control measures, Drainage system – piped drains, open drains, Recharging of storm water, Harvesting of roof top water, first flush, pre treatment, Drainage of basements, podium, paved areas, Collection, Reuse of water within the project, reduction of the load on municipal system, landscape drainages and Rainwater harvesting.

Teaching-Learning Process	1) Visit to a sewage treatment plant at a city level 2) Quizzes on the various issues of sewage and storm water management.

Module-3

5) **Plumbing:** Water supply piping – hot, cold, flushing water, Piping in sunken areas, false ceiling areas, shaft sizes, Drainage – floor traps, drains, P-trap, bottle traps, Single stack, two stack, cross venting, fixture venting, Material of construction like GI, PPR, PB, CPVC, Composite pipes, Copper, Flow control Valves – Gate valve, Globe valves, butterfly valves, Pressure Reducing valves & station, Pipe supports, hangers, fixing, plumbing of small houses.

Teaching-Learning Process	1) Visit to a construction site for various works of plumbing installations. 2) Sketches, Drawings and measurements on site for various fixtures and installations.

Module-4

6) **Sanitary Fixtures, Fittings & Wellness:** Soil appliances – Water closets, Bidet, urinals, Cisterns, Flush valve, Waste appliances – wash basin, sink, dishwasher, washing machine, Hot water system – Geysers, boilers, heat pump, Bath & water fixtures – Taps, mixers, single lever, quarter turn, bathtub, multi-jet bath, rain showers, health faucets, Wellness products : Sauna bath, steam bath, Jacuzzi, single and double stack system.

7) **Solid Waste Management:** Assessment of waste, Waste to wealth concept, Municipal waste, garden waste, organic & inorganic, Commercial waste, Medical waste & Industrial waste, Collection, segregation, treatment, disposal, Organic waste – Biomethanation, Vermicomposting, Organic waste converter.

Teaching-Learning Process	1) Visit to a construction site for various works of drainage. 2) Sketches, Drawings and measurements on site for various fixtures.

Module-5

8) **Introduction to Fire and Life safety:** Causes of fire, reasons for loss of life due to fire, development of fire, fire classification of buildings, Fire water storage requirements, Fire control room, Code of practices, Idea of smoke detectors, Fire

alarms, Wet risers, Fire escape stair case, equipment used eg: snorkel ladder, materials used to fight fire, Fire rating and Hydrants. **9) Special requirements:** Solar Hot Water Generation, Central LPG Supply System, Medical Gases Supply, Storage of High Speed Diesel, Central Vacuum and Waste Collection.	
Teaching-Learning Process	1) Visit to a construction site for various works of fire safety applications 2) Sketches, Drawings and measurements on site for various service and space requirements for an architect.

Course outcome (Course Skill Set)

1) The students will be able to understand the importance of the services of water supply, sanitary and other necessities in a building.
2) The students will be able to analyse the space requirements and other technical aspects of various services in a building.

Assessment Details (both CIE and SEE)

The weightage of Continuous Internal Evaluation (CIE) is 50% and for Semester End Exam (SEE) is 50%. The minimum passing mark for the CIE is 50% of the maximum marks (25 marks). A student shall be deemed to have satisfied the academic requirements and earned the credits allotted to each subject/ course if the student secures not less than 40% (20 Marks out of 50)in the semester-end examination(SEE), and a minimum of 50% (50 marks out of 100) in the CIE (Continuous Internal Evaluation) and a minimum of 50% (50 marks out of 100) in the sum total of the CIE (Continuous Internal Evaluation) and SEE (Semester End Examination) taken together. Based on this grading will be awarded.

Continuous Internal Evaluation:

Three Unit Tests each of **20 Marks (duration 01 hour**)

7. First test at the end of 5th week of the semester
8. Second test at the end of the 10th week of the semester
9. Third test at the end of the 15th week of the semester

Two assignments each of **10 Marks**

10. First assignment at the end of 4th week of the semester
11. Second assignment at the end of 9th week of the semester

Group discussion/Seminar/quiz any one of three suitably planned to attain the COs and POs for **20 Marks** (**duration 01 hours**)

12. At the end of the 13th week of the semester

The sum of three tests, two assignments, and quiz/seminar/group discussion will be out of 100 marks and will be **scaled down to 50 marks**

(to have less stressed CIE, the portion of the syllabus should not be common /repeated for any of the methods of the CIE. Each method of CIE should have a different syllabus portion of the course).

CIE methods /question paper is designed to attain the different levels of Bloom's taxonomy as per the outcome defined for the course.

Semester End Examination:

Theory SEE will be conducted by University as per the scheduled timetable, with common question papers for the subject (**duration 03 hours)**

3. The question paper will have ten questions. Each question is set for 20 marks.
4. There will be 2 questions from each module. Each of the two questions under a module (with a maximum of 3 sub-questions), **should have a mix of topics** under that module.

The students have to answer 5 full questions, selecting one full question from each module.

Theory paper will be out of 100 marks and will be **scaled down to 50 marks.**

.

Suggested Learning Resources:

Books

1) Deshpande, RS. A Text Book of Sanitary Engineering, Vol:1, United Books, Pune, 1959.

2) Birdie, G. S. and Birdie J. S. Water Supply and Sanitary Engineering, DhanpatRai Publications, 2010

Web links and Video Lectures (e-Resources):

- https://ndl.iitkgp.ac.in
- https://www.youtube.com/watch?v=KMP9-49I1U4
- https://www.youtube.com/watch?v=0_ZcCqqpS2o
- https://www.youtube.com/watch?v=FvPakzqM3h8
- https://www.youtube.com/watch?v=CdnZXvE4SKc
- https://www.youtube.com/watch?v=LBy9OuIayjc

Activity Based Learning (Suggested Activities in Class)/ Practical Based learning

Activity 1:

Identify a metropolitan city, a Tier-2 city and a village. Study the following designs - Waste management, water supply, sewerage, fire infrastructure and life safety systems, storm water, other developmental infrastructures. Document the similarities and differences. Study the network of lakes, rivers in the same city and their condition now. Document the impact of development on the well being of lakes, rivers and human health aspects. Create a photo collage also to support the documentation.
Incorporate sustainable service systems in the design project.

III Semester

Building Structure -II			
Course Code	**21ENG36**	CIE Marks	50
Teaching Hours/Week (L:T:P: S)	3:0:0:0	SEE Marks	50
Total Hours of Pedagogy	40	Total Marks	100
Credits	03	Exam Hours	03

Course objectives:
Introduction to Mechanics & Materials in building construction.

Teaching-Learning Process (General Instructions)
These are sample Strategies, which teacher can use to accelerate the attainment of the various course outcomes.
1) The teacher can use PPTs, Videos to discuss forces acting on a building component.
2) The students need to sketch the forces acting on building elements for its unique qualities.
3) Quizzes, models, seminars from students can be encouraged.

Module-1

Simple Stresses & Strains: Basic concept of simple stress and compound stress , deformation Definition and discussion on Simple stress, deformation, strain ,elasticity, ductility, brittleness , Hooke's law ,fatigue and factor of safety
Numerical problems on calculation of simple stress and deformation in bars of uniform and varying c/s subjected to tensile and compressive loads.

Teaching-Learning Process	1) The teacher can use PPTs, Videos to discuss stresses acting on a building component. 2) The students need to sketch the stresses acting on building elements for its unique qualities. 3) Quizzes, models, seminars from students can be encouraged.

Module-2

Modulus of Elasticity (E), Modulus of Rigidity (C), and Bulk modulus (K), Poisson's ratio, relationship between elastic constants , Temperature effects on Structures Numerical problems on calculation of elastic constants, deformation of composite bars subjected to compressive and tensile loads

Teaching-Learning Process	1) The teacher can use PPTs, Videos to discuss topics and load acting on various building components 2) The students need to sketch the forces acting on building components and typical solutions in a simple building. 3) Quizzes, models, seminars from students can be encouraged.

Module-3

Elastic Stability of Columns
Column- Strut -length of column-Effective length of column-slenderness ratio-short column and long column-failure of short column - failure of long column-Critical load or Crippling load on long column- Euler's theory of Long columns with assumptions and formula for Critical load- concept of safe load.
Numerical problems on calculation of critical load and safe load using Euler's-Formula for long columns of solid and hollow circular and rectangular c/s.

Teaching-Learning Process	1) The teacher can use PPTs, Videos to discuss stability of columns. 2) The students need to sketch the stresses acting on building components and typical solutions in a simple building. 3) Quizzes, models, seminars from students can be encouraged.

Module-4

Shear Force diagram SFD and Bending moment diagram BMD

Concept of shear force and bending moment in a beam subjected to external loads- sign convention-pure bending-point of contra flexure - point of zero shear

Numerical problems on drawing SFD and BMD for Cantilever , Simply supported and overhanging beams subjected to concentrated load and uniformly distributed load (u d l) , location of point of contra flexure.

Teaching-Learning Process	1) The teacher can use PPTs, Videos to discuss SFD and BMD 2) The students need to sketch columns to understand slenderness ratio. 3) Quizzes, models, seminars from students can be encouraged.

Module-5

Stresses in Beams

Concept of bending stress and Shear stress developed in beams subjected to bending - Simple bending equation with assumptions -Neutral Axis-Section modulus, Equation for calculation of shear stress.

Numerical problems on Calculation and sketching of variation of bending stress and shear stress across the c/s of beam. (Rectangular, T , I sections)

Teaching-Learning Process	1) The teacher can use PPTs, Videos to discuss stresses in Beams. 2) The students need to sketch various types of beams to understand stresses and deflection. 3) Quizzes, models, seminars from students can be encouraged.

Course outcome (Course Skill Set)

At the end of the course the students will have the ability to understand the effect of various forces on R C C Structure.

Assessment Details (both CIE and SEE)

The weightage of Continuous Internal Evaluation (CIE) is 50% and for Semester End Exam (SEE) is 50%. The minimum passing mark for the CIE is 50% of the maximum marks (25 marks). A student shall be deemed to have satisfied the academic requirements and earned the credits allotted to each subject/ course if the student secures not less than 40% (20 Marks out of 50)in the semester-end examination(SEE), and a minimum of 50% (50 marks out of 100) in the CIE (Continuous Internal Evaluation) and a minimum of 50% (50 marks out of 100) in the sum total of the CIE (Continuous Internal Evaluation) and SEE (Semester End Examination) taken together. Based on this grading will be awarded.

Continuous Internal Evaluation:

Three Unit Tests each of **20 Marks (duration 01 hour**)

- First test at the end of 5th week of the semester
- Second test at the end of the 10th week of the semester
- Third test at the end of the 15th week of the semester

Two assignments each of **10 Marks**

- First assignment at the end of 4th week of the semester
- Second assignment at the end of 9th week of the semester

Group discussion/Seminar/quiz any one of three suitably planned to attain the COs and POs for **20 Marks** (**duration 01 hours**)

- At the end of the 13th week of the semester

The sum of three tests, two assignments, and quiz/seminar/group discussion will be out of 100 marks and will be **scaled down to 50 marks**

(to have less stressed CIE, the portion of the syllabus should not be common /repeated for any of the methods of the CIE. Each method of CIE should have a different syllabus portion of the course).

CIE methods /question paper is designed to attain the different levels of Bloom's taxonomy as per the outcome defined for the course.

Semester End Examination:

Theory SEE will be conducted by University as per the scheduled timetable, with common question papers for the subject (**duration 03 hours)**

- The question paper will have ten questions. Each question is set for 20 marks.
- There will be 2 questions from each module. Each of the two questions under a module (with a maximum of 3 sub-questions), **should have a mix of topics** under that module.

The students have to answer 5 full questions, selecting one full question from each module..

Theory paper will be out of 100 marks and will be **scaled down to 50 marks.**

Suggested Learning Resources: Books

1) B.S.Basavarajaih& P. Mahadevappa, "Strength of Materials", Universities Press, 3rd editn. 2010.
2) Dr. S. Ramamrutham& R. Narayan "Strength of Materials", DhanpatRai Publ., 8th edi. 2014.
3) William A. Nash, "Strength of Materials", McGraw-Hill Education; 6th edition, 2013.
4) R.K.Bansal, "Strength of Materials", Laxmi Publications; 6th edition (2017).
5) R.S.Khurmi& N. Khurmi, " Strength of Materials", S Chand Pub., revised edition 2006

Web links and Video Lectures (e-Resources):

- https://ndl.iitkgp.ac.in
- https://www.youtube.com/watch?v=arr_xwk-JsM
- https://www.youtube.com/watch?v=WWkv4D2LHtk

Activity Based Learning (Suggested Activities in Class)/ Practical Based learning

1) Visit to a construction site to analyse various forces acting on different components of a building.
2) Seminar by students in groups on their learnings.

30.09.2022

BE - **III/IV Semester – Common to all**

ಸಾಂಸ್ಕೃತಿಕ ಕನ್ನಡ

ವಿಷಯ ಸಂಕೇತ (Course Code)	21KSK39/49	ನಿರಂತರ ಆಂತರಿಕ ಮೌಲ್ಯಮಾಪನದ ಅಂಕಗಳು	50
ಒಂದು ವಾರಕ್ಕೆ ಬೋಧನಾ ಅವಧಿ (Teaching Hours / Week (L:T:P: S)	0:2:0:1	ಸೆಮಿಸ್ಟರ್ ಅಂತ್ಯದ ಪರೀಕ್ಷೆಯ ಅಂಕಗಳು	50
ಒಟ್ಟು ಬೋಧನಾ ಅವಧಿ Total Hours of Pedagogy	25 ಗಂಟೆಗಳು	ಒಟ್ಟು ಅಂಕಗಳು	100
ಕ್ರೆಡಿಟ್ಸ್ (Credits)	01	ಪರೀಕ್ಷೆಯ ಅವಧಿ	01 ಗಂಟೆ

ಸಾಂಸ್ಕೃತಿಕ ಕನ್ನಡ ಪಠ್ಯದ ಕಲಿಕೆಯ ಉದ್ದೇಶಗಳು:

1. ವೃತ್ತಿಪರ ಪದವಿ ವಿದ್ಯಾರ್ಥಿಗಳಾಗಿರುವುದರಿಂದ ಕನ್ನಡ ಭಾಷೆ, ಸಾಹಿತ್ಯ ಮತ್ತು ಕನ್ನಡದ ಸಂಸ್ಕೃತಿಯ ಪರಿಚಯ ಮಾಡಿಕೊಡುವುದು.
2. ಕನ್ನಡ ಸಾಹಿತ್ಯದ ಪ್ರಧಾನ ಭಾಗವಾದ ಆಧುನಿಕ ಪೂರ್ವ ಮತ್ತು ಆಧುನಿಕ ಕಾವ್ಯಗಳನ್ನು ಸಾಂಕೇತಿಕವಾಗಿ ಪರಿಚಯಿಸಿ ವಿದ್ಯಾರ್ಥಿಗಳಲ್ಲಿ ಸಾಹಿತ್ಯ ಮತ್ತು ಸಂಸ್ಕೃತಿಯ ಬಗ್ಗೆ ಅರಿವು ಹಾಗೂ ಆಸಕ್ತಿಯನ್ನು ಮೂಡಿಸುವುದು.
3. ತಾಂತ್ರಿಕ ವ್ಯಕ್ತಿಗಳ ಪರಿಚಯವನ್ನು ಹಾಗೂ ಅವರುಗಳ ಸಾಧಿಸಿದ ವಿಷಯಗಳನ್ನು ಪರಿಚಯಿಸುವುದು.
4. ಕನ್ನಡ ಶಬ್ದಸಂಪತ್ತಿನ ಪರಿಚಯ ಮತ್ತು ಕನ್ನಡ ಭಾಷೆಯ ಬಳಕೆ ಹಾಗೂ ಕನ್ನಡದಲ್ಲಿ ಪತ್ರ ವ್ಯವಹಾರವನ್ನು ತಿಳಿಸಿಕೊಡುವುದು.

ಬೋಧನೆ ಮತ್ತು ಕಲಿಕಾ ವ್ಯವಸ್ಥೆ (Teaching-Learning Process – General Instructions) :

These are sample Strategies, which teacher can use to accelerate the attainment of the course outcomes.

1. **ಸಾಂಸ್ಕೃತಿಕ ಕನ್ನಡವನ್ನು ಬೋಧಿಸಲು ತರಗತಿಯಲ್ಲಿ ಶಿಕ್ಷಕರು ಪ್ರಸ್ತುತ ಪುಸ್ತಕ ಆಧಾರಿಸಿ ಬ್ಲಾಕ್ ಬೋರ್ಡ್ ವಿಧಾನವನ್ನು ಅನುಸರಿಸುವುದು. ಪ್ರಮುಖ ಅಂಶಗಳ ಚಾರ್ಟ್ ಗಳನ್ನು ತಯಾರಿಸಲು ವಿದ್ಯಾರ್ಥಿಗಳನ್ನು ಪ್ರೇರೇಪಿಸುವುದು ಮತ್ತು ತರಗತಿಯಲ್ಲಿ ಅವುಗಳನ್ನು ಚರ್ಚಿಸಲು ಅವಕಾಶ ಮಾಡಿಕೊಡುವುದು.**
2. **ಇತ್ತೀಚಿನ ತಂತ್ರಜ್ಞಾನದ ಅನುಕೂಲಗಳನ್ನು ಬಳಸಿಕೊಳ್ಳುವುದು – ಅಂದರೆ ಕವಿ-ಕಾವ್ಯ ಪರಿಚಯದಲ್ಲಿ ಕವಿಗಳ ಚಿತ್ರಣ ಮತ್ತು ಲೇಖನಗಳು ಮತ್ತು ಕಥೆ ಕಾವ್ಯಗಳ ಮೂಲ ಅಂಶಗಳಿಗೆ ಸಂಬಂಧಪಟ್ಟ ಧ್ವನಿ ಚಿತ್ರಗಳು, ಸಂಭಾಷಣೆಗಳು, ಈಗಾಗಲೇ ಇತರ ವಿಮರ್ಶಕರು ಬರೆದಿರುವ ವಿಮರ್ಶಾತ್ಮಕ ವಿಷಯಗಳನ್ನು ಟಿಪಿಟಿ, ಡಿಜಿಟಲ್ ಮಾಧ್ಯಮಗಳ ಮುಖಾಂತರ ವಿಶ್ಲೇಷಿಸುವುದು.**
3. **ನವೀನ ಮಾದರಿಯ ಸಾಹಿತ್ಯ ಬೋಧನೆಗೆ ಸಂಬಂಧಪಟ್ಟ ವಿಧಾನಗಳನ್ನು ಶಿಕ್ಷಕರು ವಿದ್ಯಾರ್ಥಿಗಳಿಗೆ ಅನುಕೂಲವಾಗುವ ರೀತಿಯಲ್ಲಿ ಅಳವಡಿಸಿಕೊಳ್ಳಬಹುದು.**

ಘಟಕ -1 ಲೇಖನಗಳು

1. ಕರ್ನಾಟಕ ಸಂಸ್ಕೃತಿ - ಹಂಪ ನಾಗರಾಜಯ್ಯ
2. ಕರ್ನಾಟಕದ ಏಕೀಕರಣ : ಒಂದು ಅಪೂರ್ವ ಚರಿತ್ರೆ - ಜಿ. ವೆಂಕಟಸುಬ್ಬಯ್ಯ
3. ಆಡಳಿತ ಭಾಷೆಯಾಗಿ ಕನ್ನಡ - ಡಾ. ಎಲ್. ತಿಮ್ಮೇಶ ಮತ್ತು ಪ್ರೋ. ವಿ. ಕೇಶವಮೂರ್ತಿ

ಬೋಧನೆ ಮತ್ತು ಕಲಿಕಾ ವಿಧಾನ	**ಪುಸ್ತಕ ಆಧಾರಿತ ಬ್ಲಾಕ್ ಬೋರ್ಡ್ ವಿಧಾನ, ಪ್ರಮುಖ ಅಂಶಗಳ ಚಾರ್ಟ್ ಗಳನ್ನು ಬಳಸುವುದು, ಪಿಪಿಟಿ ಮತ್ತು ದೃಶ್ಯ ಮಾಧ್ಯಮದ ವಿಡಿಯೋಗಳನ್ನು ಬಳಸುವುದು, ವಿದ್ಯಾರ್ಥಿಗಳೊಂದಿಗೆ ಚಟುವಟಿಕೆಗಳ ಮುಖಾಂತರ ಚರ್ಚಿಸುವುದು.**

30.09.2022

ಘಟಕ -2 ಆಧುನಿಕ ಪೂರ್ವದ ಕಾವ್ಯ ಭಾಗ	
1. ವಚನಗಳು : ಬಸವಣ್ಣ, ಅಕ್ಕಮಹಾದೇವಿ, ಅಲ್ಲಮಪ್ರಭು, ಆಯ್ದಕ್ಕಿ ಮಾರಯ್ಯ, ಜೇಡರದಾಸಿಮಯ್ಯ, ಆಯ್ದಕ್ಕಿ ಲಕ್ಕಮ್ಮ. 2. ಕೀರ್ತನೆಗಳು : ಅದರಿಂದೇನು ಫಲ ಇದರಿಂದೇನು ಫಲ - ಪುರಂದರದಾಸರು ತಲ್ಲಣಿಸದಿರು ಕಂಡ್ಯ ತಾಳು ಮನವೇ - ಕನಕದಾಸರು 3. ತತ್ವಪದಗಳು : ಸಾವಿರ ಕೊಡಗಳ ಸುಟ್ಟು - ಶಿಶುನಾಳ ಶರೀಫ	
ಬೋಧನೆ ಮತ್ತು ಕಲಿಕಾ ವಿಧಾನ	**ಪುಸ್ತಕ ಆಧಾರಿತ ಬ್ಲಾಕ್ ಬೋರ್ಡ್ ವಿಧಾನ, ಪ್ರಮುಖ ಅಂಶಗಳ ಚಾರ್ಟ್ ಗಳನ್ನು ಬಳಸುವುದು, ಪಿಪಿಟಿ ಮತ್ತು ದೃಶ್ಯ ಮಾಧ್ಯಮದ ವಿಡಿಯೋಗಳನ್ನು ಬಳಸುವುದು, ವಿದ್ಯಾರ್ಥಿಗಳೊಂದಿಗೆ ಚಟುವಟಿಕೆಗಳ ಮುಖಾಂತರ ಚರ್ಚಿಸುವುದು.**
ಘಟಕ -3 ಆಧುನಿಕ ಕಾವ್ಯಭಾಗ	
1. ಡಿವಿಜಿ ರವರ ಮಂಕುತಿಮ್ಮನ ಕಗ್ಗದಿಂದ ಅಯ್ದ ಕೆಲವು ಭಾಗಗಳು 2. ಕುರುಡು ಕಾಂಚಾಣ : ದಾ.ರಾ. ಬೇಂದ್ರೆ 3. ಹೊಸಬಾಳಿನ ಗೀತೆ : ಕುವೆಂಪು	
ಬೋಧನೆ ಮತ್ತು ಕಲಿಕಾ ವಿಧಾನ	**ಪುಸ್ತಕ ಆಧಾರಿತ ಬ್ಲಾಕ್ ಬೋರ್ಡ್ ವಿಧಾನ, ಪ್ರಮುಖ ಅಂಶಗಳ ಚಾರ್ಟ್ ಗಳನ್ನು ಬಳಸುವುದು, ಪಿಪಿಟಿ ಮತ್ತು ದೃಶ್ಯ ಮಾಧ್ಯಮದ ವಿಡಿಯೋಗಳನ್ನು ಬಳಸುವುದು, ವಿದ್ಯಾರ್ಥಿಗಳೊಂದಿಗೆ ಚಟುವಟಿಕೆಗಳ ಮುಖಾಂತರ ಚರ್ಚಿಸುವುದು.**
ಘಟಕ -4 ತಾಂತ್ರಿಕ ವ್ಯಕ್ತಿಗಳ ಪರಿಚಯ	
1. ಡಾ. ಸರ್. ಎಂ. ವಿಶ್ವೇಶ್ವರಯ್ಯ : ವ್ಯಕ್ತಿ ಮತ್ತು ಐತಿಹ್ಯ - ಎ ಎನ್ ಮೂರ್ತಿರಾವ್ 2. ಕರಕುಶಲ ಕಲೆಗಳು ಮತ್ತು ಪರಂಪರೆಯ ವಿಜ್ಞಾನ : ಕರೀಗೌಡ ಬೀಚನಹಳ್ಳಿ	
ಬೋಧನೆ ಮತ್ತು ಕಲಿಕಾ ವಿಧಾನ	**ಪುಸ್ತಕ ಆಧಾರಿತ ಬ್ಲಾಕ್ ಬೋರ್ಡ್ ವಿಧಾನ, ಪ್ರಮುಖ ಅಂಶಗಳ ಚಾರ್ಟ್ ಗಳನ್ನು ಬಳಸುವುದು, ಪಿಪಿಟಿ ಮತ್ತು ದೃಶ್ಯ ಮಾಧ್ಯಮದ ವಿಡಿಯೋಗಳನ್ನು ಬಳಸುವುದು, ವಿದ್ಯಾರ್ಥಿಗಳೊಂದಿಗೆ ಚಟುವಟಿಕೆಗಳ ಮುಖಾಂತರ ಚರ್ಚಿಸುವುದು.**
ಘಟಕ -5 ಕಥೆ ಮತ್ತು ಪ್ರವಾಸ ಕಥನ	
1. ಯುಗಾದಿ : ವಸುಧೇಂದ್ರ 2. ಮೆಗಾನೆ ಎಂಬ ಗಿರಿಜನ ಪರ್ವತ : ಹಿ.ಚಿ. ಬೋರಲಿಂಗಯ್ಯ	
ಬೋಧನೆ ಮತ್ತು ಕಲಿಕಾ ವಿಧಾನ	**ಪುಸ್ತಕ ಆಧಾರಿತ ಬ್ಲಾಕ್ ಬೋರ್ಡ್ ವಿಧಾನ, ಪ್ರಮುಖ ಅಂಶಗಳ ಚಾರ್ಟ್ ಗಳನ್ನು ಬಳಸುವುದು, ಪಿಪಿಟಿ ಮತ್ತು ದೃಶ್ಯ ಮಾಧ್ಯಮದ ವಿಡಿಯೋಗಳನ್ನು ಬಳಸುವುದು, ವಿದ್ಯಾರ್ಥಿಗಳೊಂದಿಗೆ ಚಟುವಟಿಕೆಗಳ ಮುಖಾಂತರ ಚರ್ಚಿಸುವುದು.**

ಸಾಂಸ್ಕೃತಿಕ ಕನ್ನಡ ಕಲಿಕೆಯಿಂದ ವಿದ್ಯಾರ್ಥಿಗಳಿಗೆ ಆಗುವ ಪರಿಣಾಮಗಳು (course Outcomes):

1. ಕನ್ನಡ ಭಾಷೆ, ಸಾಹಿತ್ಯ ಮತ್ತು ಕನ್ನಡದ ಸಂಸ್ಕೃತಿಯ ಪರಿಚಯವಾಗುತ್ತದೆ.
2. ಕನ್ನಡ ಸಾಹಿತ್ಯದ ಆಧುನಿಕ ಪೂರ್ವ ಮತ್ತು ಆಧುನಿಕ ಕಾವ್ಯಗಳು ಮತ್ತು ಸಂಸ್ಕೃತಿಯ ಬಗ್ಗೆ ಆಸಕ್ತಿಯು ಮೂಡುತ್ತದೆ.
3. ತಾಂತ್ರಿಕ ವ್ಯಕ್ತಿಗಳ ಪರಿಚಯವಾಗುತ್ತದೆ.
4. ಕನ್ನಡ ಭಾಷಾಭ್ಯಾಸ, ಸಾಮಾನ್ಯ ಕನ್ನಡ ಹಾಗೂ ಆಡಳಿತ ಕನ್ನಡದ ಪದಗಳ ಪರಿಚಯವಾಗುತ್ತದೆ.

ಮೌಲ್ಯಮಾಪನದ ವಿಧಾನ (Assessment Details- both CIE and SEE) :

(methods of CIE - MCQ, Quizzes, Open book test, Seminar or micro project)
The weightage of Continuous Internal Evaluation (CIE) is 50% and for Semester End Exam (SEE) is 50%. The student has to obtain a minimum of 40% marks individually both in CIE and 35% marks in SEE to pass. Theory Semester End Exam (SEE) is conducted for 50 marks (01 hour duration). The student has to get 40% out of total marks for course (ie. CIE+SEE marks). Based on this grading will be awarded.

Continuous Internal Evaluation:
Three Tests each of **20 Marks (duration 01 hour**)

a. First test at the end of 5th week of the semester
b. Second test at the end of the 10th week of the semester
c. Third test at the end of the 15th week of the semester

Two assignments each of **10 Marks : 1.** First assignment at the end of 4th week of the semester

2. Second assignment at the end of 9th week of the semester

Group discussion/Seminar/quiz any one of three suitably planned to attain the COs and POs for **20 Marks** (**duration 01 hours**)

3. At the end of the 13th week of the semester

The sum of three tests, two assignments, and quiz/seminar/group discussion will be out of 100 marks and will be **scaled down to 50 marks**
CIE methods /question paper is designed to attain the different levels of Bloom's taxonomy as per the outcome defined for the course.

ಸೆಮಿಸ್ಟರ್ ಅಂತ್ಯದ ಪರೀಕ್ಷೆಯು ಈ ಕೆಳಗಿನಂತಿರುತ್ತದೆ – Semester End Exam (SEE):

SEE will be conducted by University as per the scheduled timetable, with common question papers for the subject.

1. The question paper will have 50 questions. Each question is set for 01 mark.
2. SEE Pattern will be in MCQ Model for 50 marks. Duration of the exam is 01 Hour.

ಪಠ್ಯಪುಸ್ತಕ :

ಸಾಂಸ್ಕೃತಿಕ ಕನ್ನಡ

ಡಾ. ಹಿ.ಚಿ.ಬೋರಲಿಂಗಯ್ಯ ಮತ್ತು ಡಾ. ಎಲ್. ತಿಮ್ಮೇಶ,
ಪ್ರಸಾರಾಂಗ, ವಿಶ್ವೇಶ್ವರಯ್ಯ ತಾಂತ್ರಿಕ ವಿಶ್ವವಿದ್ಯಾಲಯ, ಬೆಳಗಾವಿ.

30.09.2022

BE - III / IV Semester – Common to All

ಬಳಕೆ ಕನ್ನಡ - baLake Kannada (Kannada for Usage)

ಕನ್ನಡ ಕಲಿಕೆಗಾಗಿ ನಿಗದಿಪಡಿಸಿದ ಪಠ್ಯಪುಸ್ತಕ - (Prescribed Textbook to Learn Kannada)

ವಿಷಯ ಸಂಕೇತ (Course Code)	21KBK39/49	ನಿರಂತರ ಆಂತರಿಕ ಮೌಲ್ಯಮಾಪನದ ಅಂಕಗಳು (Continuous Internal Evaluation Marks)	50
ಒಂದು ವಾರಕ್ಕೆ ಬೋಧನಾ ಅವಧಿ (Teaching Hours / Week (L:T:P: S)	0:2:0:1	ಸೆಮಿಸ್ಟರ್ ಅಂತ್ಯದ ಪರೀಕ್ಷೆಯ ಅಂಕಗಳು (Semester End Examination Marks)	50
ಒಟ್ಟು ಬೋಧನಾ ಅವಧಿ Total Hours of Pedagogy	25 ಗಂಟೆಗಳು	ಒಟ್ಟು ಅಂಕಗಳು (Total Marks)	100
ಕ್ರೆಡಿಟ್ಸ್ (Credits)	01	ಪರೀಕ್ಷೆಯ ಅವಧಿ (Exam Hours)	01 ಗಂಟೆ

ಬಳಕೆ ಕನ್ನಡ ಪಠ್ಯದ ಕಲಿಕೆಯ ಉದ್ದೇಶಗಳು (Course Learning Objectives):

- To Create the awareness regarding the necessity of learning local language for comfortable and healthy life.
- To enable learners to Listen and understand the Kannada language properly.
- To speak, read and write Kannada language as per requirement.
- To train the learners for correct and polite conservation.

ಬೋಧನೆ ಮತ್ತು ಕಲಿಕಾ ವ್ಯವಸ್ಥೆ (Teaching-Learning Process - General Instructions) :

These are sample Strategies, which teacher can use to accelerate the attainment of the various course outcomes.

1. ಬಳಕೆ ಕನ್ನಡವನ್ನು ತರಗತಿಯಲ್ಲಿ ಶಿಕ್ಷಕರು ಬೋಧಿಸಲು ವಿಟಿಯು ಸೂಚಿಸಿರುವ ಪಠ್ಯಪುಸ್ತಕವನ್ನು ಉಪಯೊಗಿಸಬೇಕು.
2. ಪ್ರಮುಖ ಅಂಶಗಳ ಚಾರ್ಟ್ ಗಳನ್ನು ತಯಾರಿಸಲು ವಿದ್ಯಾರ್ಥಿಗಳನ್ನು ಉತ್ತೇಜಿಸುವುದು ಮತ್ತು ತರಗತಿಯಲ್ಲಿ ಅವುಗಳನ್ನು ಚರ್ಚಿಸಲು ಅವಕಾಶ ಮಾಡಿಕೊಡುವುದು.
3. ಪ್ರತಿ ವಿದ್ಯಾರ್ಥಿ ಪುಸ್ತಕವನ್ನು ತರಗತಿಯಲ್ಲಿ ಬಳಸುವಂತೆ ನೋಡಿಕೊಳ್ಳುವುದು ಮತ್ತು ಪ್ರತಿ ಪಾಠ ಮತ್ತು ಪ್ರವಚನಗಳ ಮೂಲ ಅಂಶಗಳಿಗೆ ಸಂಬಂಧಪಟ್ಟಂತೆ ಪೂರಕ ಚಟುವಟಿಕೆಗಳಿಗೆ ತೊಡಗಿಸತಕ್ಕದ್ದು.
1. ಡಿಜಿಟಲ್ ತಂತ್ರಜ್ಞಾನದ ಮುಖಾಂತರ ಇತ್ತೀಚೆಗೆ ಡಿಜಿಟಲೀಕರಣ ಗೊಂಡಿರುವ ಭಾಷೆ ಕಲಿಕೆಯ ವಿಧಾನಗಳನ್ನು ಪಿಪಿಟಿ ಮತ್ತು ದೃಶ್ಯ ಮಾಧ್ಯಮದ ಮುಖಾಂತರ ಚರ್ಚಿಸಲು ಕ್ರಮಕೈಗೊಳ್ಳುವುದು. ಇದರಿಂದ ವಿದ್ಯಾರ್ಥಿಗಳನ್ನು ತರಗತಿಯಲ್ಲಿ ಹೆಚ್ಚು ಏಕಾಗ್ರತೆಯಿಂದ ಪಾಠ ಕೇಳಲು ಮತ್ತು ಅಧ್ಯಯನದಲ್ಲಿ ತೊಡಗಲು ಅನುಕೂಲವಾಗುತ್ತದೆ.
2. ಭಾಷಾಕಲಿಕೆಯ ಪ್ರಯೋಗಾಲಯದ ಮುಖಾಂತರ ಬಹುಬೇಗ ಕನ್ನಡ ಭಾಷೆಯನ್ನು ಕಲಿಯಲು ಅನುಕೂಲವಾಗುವಂತೆ ಕಾರ್ಯಚಟುವಟಿಕೆಗಳನ್ನು ಮತ್ತು ಕ್ರಿಯಾ ಯೋಜನೆಗಳನ್ನು ರೂಪಿಸುವುದು.

Module-1

1. Introduction, Necessity of learning a local language. Methods to learn the Kannada language.
2. Easy learning of a Kannada Language: A few tips. Hints for correct and polite conservation, Listening and Speaking Activities
3. Key to Transcription.
4. ವೈಯಕ್ತಿಕ, ಸ್ವಾಮ್ಯಸೂಚಕ/ಸಂಬಂಧಿತ ಸಾರ್ವನಾಮಗಳು ಮತ್ತು ಪ್ರಶ್ನಾರ್ಥಕ ಪದಗಳು - **Personal Pronouns, Possessive Forms, Interrogative words**

ಬೋಧನೆ ಮತ್ತು	ಪುಸ್ತಕ ಆಧಾರಿತ ಬ್ಲಾಕ್ ಬೋರ್ಡ್ ವಿಧಾನ, ಪ್ರಮುಖ ಅಂಶಗಳ ಚಾರ್ಟ್ ಗಳನ್ನು ಬಳಸುವುದು, ಪಿಪಿಟಿ ಮತ್ತು ದೃಶ್ಯ

ಕಲಿಕಾ ವಿಧಾನ	ಮಾಧ್ಯಮದ ವಿಡಿಯೋಗಳನ್ನು ಬಳಸುವುದು, ವಿದ್ಯಾರ್ಥಿಗಳೊಂದಿಗೆ ಚಟುವಟಿಕೆಗಳ ಮುಖಾಂತರ ಚರ್ಚಿಸುವುದು.

Module-2

1. ನಾಮಪದಗಳ ಸಂಬಂಧಾರ್ಥಕ ರೂಪಗಳು, ಸಂದೇಹಾಸ್ಪದ ಪ್ರಶ್ನೆಗಳು ಮತ್ತು ಸಂಬಂಧವಾಚಕ ನಾಮಪದಗಳು – Possessive forms of nouns, dubitive question and Relative nouns
2. ಗುಣ, ಪರಿಮಾಣ ಮತ್ತು ವರ್ಣಬಣ್ಣ ವಿಶೇಷಣಗಳು, ಸಂಖ್ಯಾವಾಚಕಗಳು Qualitative, Quantitative and Colour Adjectives, Numerals
3. **PÁgÀPÀ gÀÆ¥ÀUÀ¼ÀÄ ªÀÄvÀÄÛ «¨sÀQÛ ¥ÀævÀåAiÀÄUÀ¼ÀÄ – ¸À¥ÀÛ«Ä «¨sÀQÛ ¥ÀævÀåAiÀÄ – (D, CzÀÄ, CªÀÅ, C°è) Predictive Forms, Locative Case**

ಬೋಧನೆ ಮತ್ತು ಕಲಿಕಾ ವಿಧಾನ	ಪುಸ್ತಕ ಆಧಾರಿತ ಬ್ಲಾಕ್ ಬೋರ್ಡ್ ವಿಧಾನ, ಪ್ರಮುಖ ಅಂಶಗಳ ಚಾರ್ಟ್ ಗಳನ್ನು ಬಳಸುವುದು, ಪಿಪಿಟಿ ಮತ್ತು ದೃಶ್ಯ ಮಾಧ್ಯಮದ ವಿಡಿಯೋಗಳನ್ನು ಬಳಸುವುದು, ವಿದ್ಯಾರ್ಥಿಗಳೊಂದಿಗೆ ಚಟುವಟಿಕೆಗಳ ಮುಖಾಂತರ ಚರ್ಚಿಸುವುದು.

Module-3

1. **ZÀvÀÄyð «¨sÀQÛ ¥ÀævÀåAiÀÄzÀ §¼ÀPÉ ªÀÄvÀÄÛ ¸ÀASÁåªÁZÀPÀUÀ¼ÀÄ** - Dative Cases, and Numerals
4. **¸ÀASÁåUÀÄtªÁZÀPÀUÀ¼ÀÄ ªÀÄvÀÄÛ §ºÀÄªÀZÀ£À £ÁªÀÄgÀÆ¥ÀUÀ¼ÀÄ** - Ordinal numerals and Plural markers
5. **£ÀÆå£À / ¤µÉÃzsÁxÀðPÀ QæAiÀiÁ¥ÀzÀUÀ¼ÀÄ ªÀÄvÀÄÛ ªÀtð UÀÄtªÁZÀPÀUÀ¼ÀÄ**

   Defective / Negative Verbs and Colour Adjectives

ಬೋಧನೆ ಮತ್ತು ಕಲಿಕಾ ವಿಧಾನ	ಪುಸ್ತಕ ಆಧಾರಿತ ಬ್ಲಾಕ್ ಬೋರ್ಡ್ ವಿಧಾನ, ಪ್ರಮುಖ ಅಂಶಗಳ ಚಾರ್ಟ್ ಗಳನ್ನು ಬಳಸುವುದು, ಪಿಪಿಟಿ ಮತ್ತು ದೃಶ್ಯ ಮಾಧ್ಯಮದ ವಿಡಿಯೋಗಳನ್ನು ಬಳಸುವುದು, ವಿದ್ಯಾರ್ಥಿಗಳೊಂದಿಗೆ ಚಟುವಟಿಕೆಗಳ ಮುಖಾಂತರ ಚರ್ಚಿಸುವುದು.

Module-4

1. ಅಪ್ಪಣೆ / ಒಪ್ಪಿಗೆ, ನಿರ್ದೇಶನ, ಪ್ರೋತ್ಸಾಹ ಮತು ಒತ್ತಾಯ ಆರ್ಥರೂಪ ಪದಗಳು ಮತ್ತು ವಾಕ್ಯಗಳು
   Permission, Commands, encouraging and Urging words (Imperative words and sentences)
2. ಸಾಮಾನ್ಯ ಸಂಭಾಷಣೆಗಳಲ್ಲಿ ದ್ವಿತೀಯ ವಿಭಕ್ತಿ ಪ್ರತ್ಯಯಗಳು ಮತ್ತು ಸಂಭವನೀಯ ಪ್ರಕಾರಗಳು
   Accusative Cases and Potential Forms used in General Communication
3. "ಇರು ಮತ್ತು ಇರಲ್ಲ" ಸಹಾಯಕ ಕ್ರಿಯಾಪದಗಳು, ಸಂಭಾವ್ಯಸೂಚಕ ಮತ್ತು ನಿಷೇಧಾರ್ಥಕ ಕ್ರಿಯಾ ಪದಗಳು – Helping Verbs
   "iru and iralla", Corresponding Future and Negation Verbs
6. ಹೋಲಿಕೆ (ತರತಮ) , ಸಂಬಂಧ ಸೂಚಕ ಮತ್ತು ವಸ್ತು ಸೂಚಕ ಪ್ರತ್ಯಯಗಳು ಮತ್ತು ನಿಷೇಧಾರ್ಥಕ ಪದಗಳ ಬಳಕೆ- Comparitive, Relationship, Identification and Negation Words

ಬೋಧನೆ ಮತ್ತು ಕಲಿಕಾ ವಿಧಾನ	ಪುಸ್ತಕ ಆಧಾರಿತ ಬ್ಲಾಕ್ ಬೋರ್ಡ್ ವಿಧಾನ, ಪ್ರಮುಖ ಅಂಶಗಳ ಚಾರ್ಟ್ ಗಳನ್ನು ಬಳಸುವುದು, ಪಿಪಿಟಿ ಮತ್ತು ದೃಶ್ಯ ಮಾಧ್ಯಮದ ವಿಡಿಯೋಗಳನ್ನು ಬಳಸುವುದು, ವಿದ್ಯಾರ್ಥಿಗಳೊಂದಿಗೆ ಚಟುವಟಿಕೆಗಳ ಮುಖಾಂತರ ಚರ್ಚಿಸುವುದು.

Module-5

1. ಕಾಲ ಮತ್ತು ಸಮಯದ ಹಾಗೂ ಕ್ರಿಯಾಪದಗಳ ವಿವಿಧ ಪ್ರಕಾರಗಳು - ifferent types of forms of Tense, Time and Verbs

2. ದ್, -ತ್, - ತು, - ಇತು, - ಆಗಿ, - ಅಲ್ಲ, - ಗ್, -ಕ್, ಇದೆ, ಕ್ರಿಯಾ ಪ್ರತ್ಯಯಗಳೊಂದಿಗೆ ಭೂತ, ಭವಿಷ್ಯತ್ ಮತ್ತು ವರ್ತಮಾನ ಕಾಲ ವಾಕ್ಯ ರಚನೆ - Formation of Past, Future and Present Tense Sentences with Verb Forms

3. Kannada Vocabulary List : ಸಂಭಾಷಣೆಯಲ್ಲಿ ದಿನೋಪಯೋಗಿ ಕನ್ನಡ ಪದಗಳು - Kannada Words in Conversation

ಬೋಧನೆ ಮತ್ತು ಕಲಿಕಾ ವಿಧಾನ	ಪುಸ್ತಕ ಆಧಾರಿತ ಬ್ಲಾಕ್ ಬೋರ್ಡ್ ವಿಧಾನ, ಪ್ರಮುಖ ಅಂಶಗಳ ಚಾರ್ಟ್ ಗಳನ್ನು ಬಳಸುವುದು, ಪಿಪಿಟಿ ಮತ್ತು ದೃಶ್ಯ ಮಾಧ್ಯಮದ ವಿಡಿಯೋಗಳನ್ನು ಬಳಸುವುದು, ವಿದ್ಯಾರ್ಥಿಗಳೊಂದಿಗೆ ಚಟುವಟಿಕೆಗಳ ಮುಖಾಂತರ ಚರ್ಚಿಸುವುದು.

ಬಳಕೆ ಕನ್ನಡ ಪಠ್ಯದ ಕಲಿಕೆಯಿಂದ ವಿದ್ಯಾರ್ಥಿಗಳಿಗೆ ಆಗುವ ಅನುಕೂಲಗಳು ಮತ್ತು ಫಲಿತಾಂಶಗಳು: **course Outcomes**

(Course Skill Set): At the end of the Course, The Students will be able

1. To understand the necessity of learning of local language for comfortable life.
2. To Listen and understand the Kannada language properly.
3. To speak, read and write Kannada language as per requirement.
4. To communicate (converse) in Kannada language in their daily life with kannada speakers.
5. To speak in polite conservation.

Assessment Details (both CIE and SEE)

The weightage of Continuous Internal Evaluation (CIE) is 50% and for Semester End Exam (SEE) is 50%. The minimum passing mark for the CIE is 40% of the maximum marks (20 marks). A student shall be deemed to have satisfied the academic requirements and earned the credits allotted to each subject/ course if the student secures not less than 35% (18 Marks out of 50)in the semester-end examination(SEE), and a minimum of 40% (40 marks out of 100) in the sum total of the CIE (Continuous Internal Evaluation) and SEE (Semester End Examination) taken together

Continuous Internal Evaluation:

Three Tests each of **20 Marks (duration 01 hour**)

a. First test at the end of 5th week of the semester
b. Second test at the end of the 10th week of the semester
c. Third test at the end of the 15th week of the semester

Two assignments each of **10 Marks : 1.** First assignment at the end of 4th week of the semester. 2. Second assignment at the end of 9th week of the semester

Group discussion/Seminar/quiz any one of three suitably planned to attain the COs and POs for **20 Marks** (**duration 01 hours**)

3. At the end of the 13th week of the semester

The sum of three tests, two assignments, and quiz/seminar/group discussion will be out of 100 marks and will be **scaled down to 50 marks**

CIE methods /question paper is designed to attain the different levels of Bloom's taxonomy as per the outcome defined for the course.

<u>ಸೆಮಿಸ್ಟರ್ ಅಂತ್ಯದ ಪರೀಕ್ಷೆಯು ಈ ಕೆಳಗಿನಂತಿರುತ್ತದೆ - Semester End Exam (SEE):</u>

SEE will be conducted by University as per the scheduled timetable, with common question papers for the subject.

3. The question paper will have 50 questions. Each question is set for 01 mark.
4. SEE Pattern will be in MCQ Model for 50 marks. Duration of the exam is 01 Hour.

Textbook :

ಬಳಕೆ ಕನ್ನಡ

ಲೇಖಕರು : ಡಾ. ಎಲ್. ತಿಮ್ಮೇಶ

ಪ್ರಸಾರಾಂಗ, ವಿಶ್ವೇಶ್ವರಯ್ಯ ತಾಂತ್ರಿಕ ವಿಶ್ವವಿದ್ಯಾಲಯ, ಬೆಳಗಾವಿ.

30.09.2022

III Semester

ELECTIVE- 1			
Course Code	**21ARC38**	CIE Marks	50
Teaching Hours/Week (L:T:P: S)	2:0:0:0	SEE Marks	--
Total Hours of Pedagogy	25	Total Marks	50
Credits	02	Exam Hours	--

Course objectives:

1) To gain experience in aspects of Architecture not offered in the regular curriculum.
2) To study particular areas of the curriculum in greater depth.
3) To explore career opportunities in the allied fields.

Teaching-Learning Process (General Instructions)

These are sample Strategies, which teacher can use to accelerate the attainment of the various course outcomes.

1) The teacher may use conventional method or an innovative method to deal with the subject.
2) The students need to work with hands on experiences to gain an expertise of the chosen field.
3) The teacher needs to use performance assessments to develop real life skills in the students.

a. ARCHITECTURAL PHOTOGRAPHY

OBJECTIVE

To impart the skills of taking aesthetically appealing and creative architectural photographs through the use of appropriate cameras/ lenses and lighting conditions.

OUTLINE

1. Introduction to architectural photography. Various types of compositions, framing, silhouette photography.
2. Use of various cameras, lenses and accessories, handling of equipment.
   a . SLR,DSLR cameras, lenses for different focal lengths for various contexts
   b. Use of wide angle, normal, tele, zoom, macro, close up lenses.
   c. Filters- UV, Skylight, colour filters, special effect filter.
3. Shutter speeds- slow, normal and high and their various applications.
4. Apertures- use of various apertures to suit different lighting conditions and to enhance depth of fields.
5. Selection of ISO rating to match various lighting conditions.
6. Optimizing selection of shutter speed, aperture and ISO.
7. Twilight and night photography.
8. Various uses of photography- documentation, presentations, competitions, lectures, etc.
9. Creative photography/ photo renderings, for special effects using software.
10. Play of light and shadows to achieve dramatic pictures.

11. Effects of seasons, inclusion of greenery, foliage, clouds, human scale etc.

12. Architectural photography as a profession, law on photography.

REFERENCES:

1. Schulz, Adrian. Architectural Photography: Composition, Capture, and Digital Image Processing, Rocky Nook, 2012.
2. McGrath, Norman . Photographing Buildings Inside and Out, Watson-Guptill Publications, 1993.

b. VERNACULAR ARCHITECTURE
OBJECTIVE:

To inculcate an appreciation of vernacular architecture; as an expression of local identity and indigenous traditions of the culture. *Vernacular architecture and environment are deeply interconnected, studying vernacular methods through the environmental responsiveness view point.*

OUTLINE:
The course would be conducted through seminars and field work.

1. Introduction to the approaches and concepts to the study of vernacular architecture, history and organisation of vernacular buildings of different regions in the Indian context; with an understanding of forms, spatial planning, cultural aspects, symbolism, colour, art, materials of construction and construction techniques. Study of factors that shape the architectural character and render the regional variations of vernacular architecture - geographic, climatic, social, economic, political and religious aspects, local materials and skills available in the region etc.

2. Methods of observation, recording, documenting and representing vernacular architecture with examples.

3. Study and documentation of vernacular architecture of selected building typologies. Rigorous documentation, accuracy in measuring, collating the recorded information and drawing them up in specified formats and scales are part of this module.

4. A critical review of the relevance and application of vernacular ideas in contemporary times. An appraisal of architects who have creatively innovated and negotiated the boundaries of 'tradition' while dynamically responding to the changing aspirations and lifestyles of the world around.

5. Case Study of how vernacular materials can help ease climatic challenges.

6. Design Activity - design an informal settlement using vernacular elements. Mapping old vernacular materials and how they have evolved (different contexts) and thus how it can be applied for informal settlements today.

REFERENCES:

1. Carter, T., & Cromley, E. C. Invitation to Vernacular Architecture: A Guide to the Study of Ordinary Buildings and Landscapes. Knoxville: The University of Tennessee Press. 2005
2. Cooper, I. Traditional buildings of India. Thames and Hudson Ltd, London, 1998
3. Oliver, P. Encyclopaedia of Vernacular Architecture of the World, Cambridge University Press, 1997

c. VISUAL COMMUNICATION

OBJECTIVE: *To impart the techniques of visual communication.*

OUTLINE:

1. Visual communication used in day to day life, print, electronic media, advertisement and in art / architecture context - differences and similarities.
2. Understanding meaning generation process in visual language.
3. Devices of visual language - space, context, scale, associate, transform, crop, frame, distort, abstract, fragment, exaggerate, and subvert, irony.
4. Pictograms and ideograms.
5. Understanding the differences between logo and symbol. Process of logo creation.
6. Hierarchy in visual content being presented.
7. Relationship between text and images and their interrelationships.
8. Cultural context of meaning generation and aesthetic principles involved.

REFERENCES:

1. Barnes, Susan B. An Introduction to Visual Communication: From Cave Art to Second Life, Peter Lang Publishing Inc, 2011
2. Bo Bergström, Essentials of Visual Communication, Laurence King Publishing, 2009

OPEN ELECTIVE:

The college has the discretion to offer an open elective in the areas/subject/fie other than already covered under the syllabus. The college can decide to offer need based electives depending on the availability of the expertise. However, the college will require to submit the title of such electives with the course outline stating learning objectives and mode of delivering the content to the Registrar/ Registrar (evaluation) within the 15 days of the commencement of the semester

Course outcome (Course Skill Set)

1) To develop desired knowledge and skill in a particular domain of Architecture
2) To develop an understanding of the processes required for the particular subject.
3) To develop an expertise in the chosen field for career enhancement.

Assessment Details (CIE)

(methods of CIE need to be defined topic wise i.e.- Studio/ Class room/Tutorial discussions, Reviews, Time problems, test, Seminar or micro project)

The weightage of Continuous Internal Evaluation (CIE) is 100% and there is no Semester End Exam (SEE) .The student has to obtain a minimum of 50% marks in CIE and is conducted for 100 marks. Based on the CIE marks grading will be awarded.

Continuous Internal Evaluation:

Methods suggested:

1. Studio discussions, Reviews, Time problems, CIE tests, Seminar or micro project, Quiz, report writing etc.
2. The class teacher has to decide the course of learning for the Elective subject, in the beginning only. The teacher has to announce the methods of CIE for the subject in advance in writing.

Semester End Examination:

There is no Semester End Exam (SEE) The CIE marks list generated is to be signed by the internal examiners and submitted to VTU as per the procedure through the Principal of the institution.

Web links and Video Lectures (e-Resources):

- https://ndl.iitkgp.ac.in
- https://www.youtube.com/watch?v=OtZAku_co3w
- https://www.youtube.com/watch?v=XkDKjARcZjw
- https://www.youtube.com/watch?v=_a-QGF4p__c
- https://www.youtube.com/watch?v=xoQOB_XaJBM
- https://www.youtube.com/watch?v=Y9ixRTTx5iU

Activity Based Learning (Suggested Activities in Class)/ Practical Based learning

1) Students need to explore and meet an expert to understand the subject in a greater depth.
2) Students need to work with hands on experiences to develop desired skills in the field..

30.09.2022

III Semester

30.09.2022