WELCOME

I Sem Students of 2024 Admission Batch (2022 Scheme)

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Experiential Learning

Themes, Rubrics & Process of Evaluation
Instructions to students

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Presentation Outline

1. About Experiential Learning & Advantages.
2. P & C Cycle courses under EL Evaluation.
3. EL Themes for the batch of 2024 admission.
4. Rules for Team Formation.
5. Guidelines for the Selection of Themes.
6. Mode of Evaluation of EL
7. Expected outcomes

Experiential learning- Advantages

- **Enhanced Retention**: Learning through experience helps solidify knowledge, making remembering and applying concepts easier.
- **Active Engagement**: Participants are actively involved in the learning process, leading to increased motivation and interest.

Experiential learning- Advantages

Critical Thinking: Experiential learning encourages problem-solving and critical thinking skills as learners navigate real-world challenges.

Practical Application: Learners can immediately apply theoretical knowledge to real situations, bridging the gap between theory and practice.

Development of Soft Skills: Skills such as teamwork, communication, and leadership are often enhanced through collaborative experiences.

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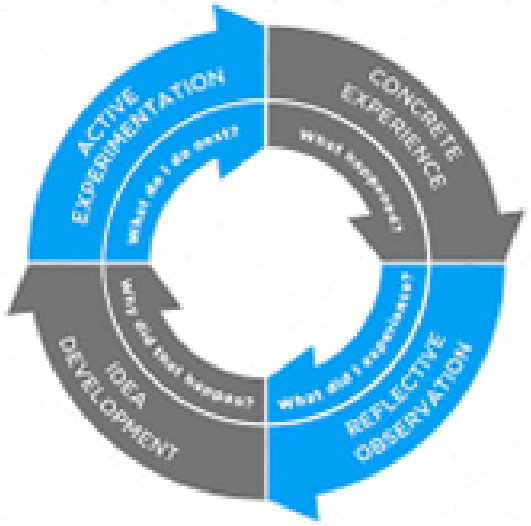
Experiential learning- Advantages

- **Personal Growth**: Engaging in hands-on activities fosters self-awareness and personal development, encouraging learners to reflect on their experiences.
- **Adaptability:** Learners become more adaptable and resilient as they face and overcome unexpected challenges.
- **Diverse Learning Styles**: Experiential learning accommodates various learning styles, making it inclusive and effective for many learners.
- **Feedback Opportunities**: Real-time feedback during experiential activities helps learners understand their strengths and areas for improvement.



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Guidelines to EL

- Every course in both Physics and Chemistry cycles has CIE
- CIE (Continuous Internal Evaluation) include:
  1. TEST for 40 Marks.
  2. Quizzes for 20 marks, and
  3. Experiential learning component for 40 marks respectively.
  4. Total CIE for 100 Marks.
  5. Minimum passing marks in CIE: 40 Marks (40%)
- Leaving the lab-only courses, we consider the following courses for consideration of composite EL.

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First Year courses for EL

FIRST SEMESTER CHEMISTRY CYCLE				
CS STREAMS: (AI, BT, CS, CD, CY & IS)				
SL. NO.	BoS	FIRST SEM COURSE CODES	Course Title	**Credits**
1	MA	**MA211TC**	Fundamentals of Linear Algebra, Calculus And Statistics	**4**
2	CM	**CM211IA**	Chemistry Of Smart Materials And Devices (Theory & Practice)	**4**
3	ME	**ME112GL**	Computer Aided Engineering Graphics	**3**
4	XX	**XX113XTX**	Engineering Science Courses-I	**3**
5	XX	**XX115XIX**	Programming Language Courses (Theory & Practice)	**3**
6	HS	**HS111EL**	Communicative English-I	**1**
7	HS	**HS114TC**	Fundamentals of Indian Constitution	**1**
8	HS	**HS115YL**	Scientific Foundations of Health-Yoga Practice	**1**

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First Year courses for EL

FIRST SEMESTER PHYSICS CYCLE				
ME, EC & CV STREAMS: (AS, CH, IM & ME), (EC, EE, EI & ET) & C V				
SL. NO.	BoS	FIRST SEM COURSE CODES	Course Title	Credits
1	MA	**MA211TA**	Fundamentals of Linear Algebra, Calculus And Numerical Methods	4
	MA	**MA211TB**	Fundamentals of Linear Algebra, Calculus And Differential Equations	4
	MA	**MA211TD**	Applied Mathematics – I	4
2	PY	**PY211IA**	Condensed Matter Physics for Engineers (Theory & Practice)	4
	PY	**PY211IB**	Classical Physics for Engineers (Theory & Practice)	4
	PY	**PY211ID**	Applied Physics for Engineers (Theory & Practice)	4

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First Year courses for EL

FIRST SEMESTER PHYSICS CYCLE				
ME, EC & CV STREAMS: (AS, CH, IM & ME), (EC, EE, EI & ET) & C V				
SL. NO.	**BoS**	**FIRST SEM COURSE CODES**	**Course Title**	**Credits**
3	XX	XX112TX	Professional Core Courses	3
4	XX	XX113XTX	Engineering Science Courses-I	3
5	XX	XX114XTX	Emerging Technology Courses-I	3
6	HS	HS111EL	Communicative English-I	1
7	HS	HS112KS HS113KB	Samskruthika Kannada Balake Kannada	1
8	ME	ME111DL	IDEA LAB (Idea Development, Evaluation & Application)	1

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PROCESS OF EVALUATION

1. Experiential Learning for I and II semesters will be evaluated for 100 marks over 3 phases.
2. The themes are not course-specific and you will be graded for the outcomes obtained. However, we have ensured that all the themes will find significant amount of impact on the courses of both Physics and Chemistry Cycles.
3. Maximum marks may be taken as 100. and these 100 marks, will be proportionally divided for EL components of all the 3 and 4 credit courses as listed above.
4. On all Saturdays except the ***first and the third Saturdays***, there will be classes for EL discussions and evaluations.

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CHIEF MENTORS FOR VARIOUS THEMES

Sl.No	Theme	Faculty Coordinator	Mobile	Email ID
1	Advanced Materials	Dr Prapulla S B	83102 58463	prapullasb@rvce.edu.in
		Dr Karthik Shastry	88979 20216	karthikshastry@rvce.edu.in
2	Energy	Dr. Shanmukha Nagaraj	9845129398	shanmukhan@rvce.edu.in
		Dr Shubha S	99454 86431	shubhas@rvce.edu.in
3	Manufacturing Process	Dr. Keshava Murhty Y.C	99457 16487	keshavamurthyyc@rvce.edu.in
		Dr. V. Mamtha	99453 77144	mamthav@rvce.edu.in
4	Quantum Mechanics	Dr. K.S.Geetha	99007 00990	geethaks@rvce.edu.in
		Dr. Praveena T	99005 15950	praveenat@rvce.edu.in
5	Environment (air, water)	Dr. B.V. Uma	98455 93646	umabv@rvce.edu.in
		Dr. M. Lokeshwari	83101 44349	lokeshwarim@rvce.edu.in

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Instructions for Team Selection

Rules to be followed in the team making process

1. The team must strictly consist of 4/5 members.
2. The team should be interdisciplinary i.e., the team should consist of students belonging to different branches. (then only we get a project truly interdisciplinary)
3. In a team, not more than 2 students can be from the same branch.
4. In a team, at least one person should belong to a different cycle.

Branches in P cycle: CV, AS, CH, IEM, ME, EE, EC, ET.
Branches in C cycle: CS (CS, CY, CD), ISE, BT.

Example - If there are 2 members from ISE, 1 from CS, the other team member must compulsorily belong to a branch in P cycle like CV.

Example - If there is 1 member from EC, 1 from EE, 1 from ME and the other team member must compulsorily belong to a branch in C cycle like CS.

Mode of Evaluation

In Phase 1, Phase 2 and Phase 3:

- In first phase 1 (Evaluation of Problem Definition) and 2 (Evaluation of Objectives and Methodology) of the presentation, each team will get 10 to 15 minutes to present the selected topic under respective theme.
- In the phase 3, **Phase 3 evaluation will be in the exhibition mode** students will present the topic alongside its objectives, Methodology and expected outcome (10 to 15 minutes).

✓ Style of content delivery,
✓ In Depth knowledge,
✓ Communication Skills,
✓ Coordination with group
✓ Demonstration of work/prototype/software module.

1. ADVANCED MATERIALS

- The focus of this theme is on developing either novel materials or their applications.
  - Nanotechnology & Sensor Technology
  - Meta-materials for Energy Storage
  - Advanced & Bio-Polymers
  - Electronics and Semiconductor Technology
  - Nano-materials & Composites
- Associated with various COEs on campus
  - COE-Macro-electronics
  - COE – Nano-device & Materials
- Either you can develop a product or a process!

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2. Energy

- It is one of the Sustainability Goals. (promoting sustainability, efficiency & accessibility.
- Affordable & Clean Energy, Renewable energy; Green energy
- Alternative sources of Energy (Solar, Wind, Geo-thermal, Hydropower, Ocean, Tidal, Bio-energy etc…
- Thousands of opportunities under this Theme:
  - Smart Grids;
  - Energy Efficient building, offices and cities;
  - Energy storage;
  - Battery management system;
  - Sustainable transportation;
  - Hydrogen and Biofuels;
  - Hyperloop systems
  - Smart traffic management;

3. MANUFACTURING PROCESSES

- **Avenues -** Enhanced safety features in automotives, Smart recycling technologies, Next-Gen smart factories, AI & IoT for predictive maintenance, Generative AI in 3D printing, Digital twin and hybrid manufacturing.
- **Outlook -** Reflecting a shift towards automated, sustainable, and optimized manufacturing processes.
- **Scope -** These areas equip students with cutting-edge knowledge and practical skills essential for tackling real-world challenges.
- **Benefit -** High quality work in these areas can lead to valuable publications or patent opportunities.
- **Associated with various COEs on campus:**
  - ✓RV Centre for Automation and Robotics - Fanuc
  - ✓RV Centre of Competence in Automation – Bosch Rexroth
  - ✓RV Mercedes Benz Centre for Automotive Mechatronics

4. QUANTUM MECHANICS

Importance

- Quantum Mechanics delves into the world of ultra small.
- It has many fascinating aspects like wave particle duality, uncertainty principle, quantum tunneling, quantum coherence , quantum superposition and quantum entanglement.
- These facets and its potential applications in the cutting edge development of technology, makes the subject a must for all of you who want to make a strong contribution to **Nation building** under the ***Government of India's Atma Nirbhar Bharat and National Quantum Mission.***
- **RVCE is setting up a Quantum Experience Lab, where everybody can participate and contribute.**

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5. Environment (Air & Water)

- An Environment is everything that is around us, which includes both living and nonliving things such as soil, water, animals, and plants, which adapt themselves to their surroundings.

Soil Pollution

Save Palnts/forests

Save animals

Water Pollution

Lake Rejuvenation

Air pollution

Agriculture

Climate Change


Thank You!