Action Taken Report on Feedback of Stakeholders

Session (2023-24)

Program Name: Bachelor of Science (Hons) Physics

Department of Sciences
Faculty of Graduate Studies
Quantum University, Roorkee

Action Taken Report of the Department

(*On the basis of the suggestions made by the IQAC and Sub Specialty Groups of the Departments on the Feedback of all stakeholder*)

Action Taken Report **Department Name: Department of Sciences**		
Feedback Session: 2023-24		
Curriculum Design		
Code	**Recommendation by Sub Specialty Groups of the Department**	**Action taken in designing the syllabus for 2024-25**
CY31105	**R-2:** Subject faculty and SSG recommended shifting Solid State and Ionic Equilibrium to VI semester.	Implemented
MA32135	**R-2:**SSG recommended modification in Unit II, Unit IV, Unit V.	Introduced the topic Wornskian properties and its applications in Unit II, method of solving simultaneous linear differential equation with constant coefficient in Unit IV, non-linear partial differential equation and method of solving and Charpit's method in Unit V.
MA33205	**R-2:**SSG recommended modification in Unit III, Unit IV, Unit V.	Introduced topics in Introduction, Methods of Interpolation, Newton forword Interpolation, Newton backword Interpolation, Linear Interpolation, Lagrange's in Unit III , Numerical Differentiation For Equally/Unequally Spaced Values of the Arguments,Newton divided difference formula,Derivative using Lagrange formula,Maximum and minimum value of atabulated functions. Trapezoidal Rule, Simpson's Rule, Simpson's three – eighth rule in Unit IV and new Unit V **Numerical solution of Ordinary differential Equation-** Introducation, Picard method,Eulersmethod,Taylor method, Runge-Kutta method, Milne;s Method.
CS34222	**R-2:**As per suggestion by alumni	Implemented

	followed by approval from SSG to introduce new course Introduction to Python Programming.	
CS34287	**R-2:**As per suggestion by alumni expert followed by approval from SSG to introduce new course named Python Programming Lab.	Implemented
PH35322	**R-2:**SSG recommended replacement of Physics of the Atmosphere by Oceanographically Physics.	Implemented
PH35323	**R-2:**SSG recommended modification in syllabus.	Introduced new Unit I Spectra of Hydrogen Atom Emission-spectra of Hydrogen atom,wave number, Bohr atomic modal, explanation of spectral series in Hydrogen atom, un-quantized states and continuous spectra, Absorption spectra of Hydrogen atom, effect of nuclear motion on line spectra, Rydberg constant in terms of reduced mass, short coming of Bohr's theor, Sommerfeld extension of Bohr's modal, Sommerfeld relativistic correction, Short comings of Bohr-Sommerfeldtheory, Quantum mechanical treatment of hydrogen atom (concept only),Interpretation of Quantum numbers, Comparison of quantum mechanics results to old quantum Bohr-Sommerfeld theory. Selection rule. Introduced new Unit II Vector Atom Model-Orbital magnetic dipole moment, Bohr Magneton, behaviour of magnetic dipole in external magnetic field, Larmor Precession and Larmor frequency, Space quantization, Electron spin, Vector Model of Atom: Coupling of Angular Momenta, Spectroscopic terms and their notation, Stern-Gerlach experiment and its theory. Spin-orbit interaction and Hydrogen Fine structure, Pauli's exclusion principle. Introduced topics in Unit III Helium atom and its spectrum, Main features of Alkali Spectra and their theoretical interpretation, term series and limits, Ritz combination principle, Absorption spectra of Alkali atoms, observed doublet fine structure in

		the spectra of alkali atoms and its interpretation Intensity rules for doublets. Introduced new Unit V with topics Salient features of molecular spectra. Rotation, vibration and electronic spectra of molecules, associated quantum numbers and selection rules. Theory of pure rotation and rotation- vibration spectra, Raman spectra, Classical and Quantum theory of Raman spectra, Rotational and vibrational Raman spectra.
PH38435	**R-2:**As per NEP guidelines of compulsory 20% modification in syllabus and suggested by SSG replacement of Astronomy and Astrophysics by Advanced Quantum Mechanics.	Implemented
PH38436	**R-2:**As per NEP guidelines of compulsory 20% modification in syllabus and suggested by SSG replacement Applications of Quantum Mechanics by Project & Dissertation.	Implemented

Other Teaching Learning Aspects		
Overall Teaching Learning Process	**R-2**: Integrate industry feedback, ensure regular curriculum updation, foster interdisciplinary learning, incorporate emerging technologies, and emphasize practical, hands-on experiences alongside theoretical knowledge. **R-4:** SSG suggested to update equipment, integrate modern technology, and provide adequate supplies. Encourage research projects and collaboration with industry to keep the lab relevant and innovative. **R-9:**Enrolling in one MOOC course offered by NPTEL or Coursera should be made mandatory for students under	Including presentations, expert lectures, industry feedback, curriculum updates, practical experiences (Science Exhibition, poster presentation related activity).

	teachers assisted activity.	
Communication Skills	**R-3:** To improve communication skills , active participation of students in class discussions, practice public speaking, seeking feedback from peers and mentors, and engaging in diverse social interaction activities to enhance clarity and confidence.	Conduction of boot camp for final and pre- final year students including communication skill lectures by faculties.
Training for Placements	**R-12:** SSG recommended to encourage reflective practice to align internships with career goals and academic learning.	Conduction of departmental and inter-departmental boot camps in collaboration with placement cell.
Orientation	**R-1**: Enhanced orientation by incorporating engaging activities and opportunities for socializing. Include detailed campus tours, sessions on academic and support services, and platforms for students to connect with faculty and peers, fostering a welcoming environment.	Separate orientation programs for first year and senior batches to be done.
Evaluation System	**R-10**: Ensure clarity in learning outcomes, incorporate transparency by giving prompt feedback on assignments/mid-semester exams, use ERP for maintaining scores.	Identify students as Slow/Advanced learner based on mid-term marks and activities will be performed for Slow/Advanced separately.
Experiential Learning and Workshop	**R-8:**Enhance extracurricular activities by fostering student-led initiatives, host regular events, and integrate feedback mechanisms. Ensure accessible participation, and recognize achievements to boost engagement and development. **R-5:** Promote awareness through interactive workshops, guest lectures and including compulsory credit courses like human values, disaster management & preparedness, environmental studies etc.	Organizing extra-curricular activities (IKS related activity, guest lectures, workshop etc.) with students. Promoting awareness through workshops, educational visits, and compulsory courses like human values, disaster management, and environmental studies.

Problem Solving Approach	**R-6:**Encourage focus on integrating real-world problem-solving projects and brain storming sessions. **R-7:** Enhance inter-disciplinary courses by fostering collaboration among departments, incorporating diverse teaching methods, and providing flexible course structures. **R-13:** Encourage publication in reputable journals, promote open access to research findings, and cultivate a culture of innovation and academic freedom.	Assigning real-world projects, diverse teaching methods, journal publications, open-access research, innovation, and academic freedom to improve the dynamic personality in students.

Dr Varsha Gupta
faculty Incharge
University feedback system

HEAD OF DEPARTMENT
Dept. of Sciences
Quantum University, Roorkee

DIRECTOR
IQAC
Quantum University, Roorkee

Registrar
Quantum University, Roorkee

Action Taken Report on Feedback of Stakeholders

Session (2023-24)

Program Name: Bachelor of Science (Hons) Chemistry

Department of Sciences
Faculty of Graduate Studies
Quantum University, Roorkee

Action Taken Report of the Department

(*On the basis of the suggestions made by the IQAC and Sub Specialty Groups of the Departments on the Feedback of all stakeholder*)

Action Taken Report **Department Name: Department of Sciences**		
Feedback Session: 2023-24		
Curriculum Design		
Code	**Recommendation by Sub Specialty Groups of the Department**	**Action taken in designing the syllabus for 2024-25**
CY31105	**R-13:**Subject faculty and SSG. recommended shifting Solid State and Ionic Equilibrium to VI semester.	Implemented
MA32135	**R-13:** SSG recommended modification in Unit II, Unit IV, Unit V.	Introduced the topic Wornskian properties and its applications in Unit II, method of solving simultaneous linear differential equation with constant coefficient in Unit IV, non-linear partial differential equation and method of solving and Charpit's method in Unit V.
MA33205	**R-13:**SSG recommended modification in Unit III, Unit IV, Unit V.	Introduced topics in Introduction, Methods of Interpolation, Newton forword Interpolation, Newton backword Interpolation, Linear Interpolation, Lagrange's in Unit III , Numerical Differentiation For Equally/Unequally Spaced Values of the Arguments, Newton divided difference formula, Derivative using Lagrange formula, Maximum and minimum value of atabulated functions. Trapezoidal Rule, Simpson's Rule, Simpson's three – eighth rule in Unit IV and new Unit V **Numerical solution of Ordinary differential Equation**-Introduction, Picard method, Eulersmethod, Taylor method, Runge-Kutta method, Milnes Method.

CS34222	**R-13:**As per suggestion by alumni followed by approval from SSG introduced new course named Introduction to Python Programming.	Implemented
CS34287	**R-13:**As per suggestion by alumni expert followed by approval from SSG introduced new course named Python Programming Lab.	Implemented
CY35324	**R-13:**As per NEP guidelines of compulsory 20% modification in syllabus and suggested by SSG replacement of Organic Chemistry by Introduction to Polymer Chemistry.	Implemented
CY36346	**R-13:**As per NEP guidelines of compulsory 20% modification in syllabus and suggested by SSG replacement of Industrial Chemical and Environment by Chemical Hazards and Environment.	Implemented

Other Teaching Learning Aspects		
Overall Teaching Learning Process	**R-1:**Quality of teaching should be improved by presentation session, expert lecture, increasing value adding lab hours. **R-4:** Integrate industry feedback, ensure regular curriculum updation, foster and emphasize practical, hands-on experiences alongside theoretical knowledge. **R-11:** Enrolling in one MOOC course offered by NPTEL or Coursera should be made mandatory for students under teachers assisted activity.	Including presentations, expert lectures, industry feedback, curriculum updates, practical experiences (Science Exhibition, poster presentation related activity).

Assistance of mentor	**R-3:** SSG recommended mentors to create collaborative decision making where interest of student is considered under guidance of mentor making up for an inclusive environment.	Mentor will take care of problems related to students and proper guiding for the same.
Problem Solving Approach	**R-6**: Encourage focus on integrating real-world problem-solving projects, Presentation by students andbrain storming sessions. **R-9:**Enhance inter-disciplinary courses by fostering collaboration among departments, incorporating diverse teaching methods, and providing flexible course structures. **R-14:**Encourage publication in reputable journals, promote open access to research findings, and cultivate a culture of innovation and academic freedom.	Assigning real-world projects, diverse teaching methods, journal publications, open-access research, innovation, and academic freedom to improve the dynamic personality in students.
IT Enabled Literacy	**R-13**: Increase student engagement through use of multimedia resources and supporting diverse learning styles.	Mandatory MOOC enrollment via NPTEL or Coursera with teacher support.
Communication Skills	**R-5:** To improve communication skills, active participation of students in class discussions, practice public speaking, seeking feedback from peers and mentors, and engaging in diverse social interaction activities to enhance clarity and confidence.	Conduction of boot camp for final and pre- final year students including communication skill lectures by faculties.
Training for Placements	**R-8** SSG recommended to encourage reflective practice to align internships with career goals and academic learning.	Conduction of departmental and inter-departmental boot camps in collaboration with placement cell.
Orientation	**R-2**: Enhanced orientation by incorporating engaging activitiesand opportunities for socializing. Include detailed campus tours, sessions on academic and support services, and platforms for students to connect with faculty and peers, fostering a	Separate orientation programs for first year and senior batches to be done.

	welcoming environment.	
Evaluation System	**R-12**: Ensure clarity in learning outcomes, incorporate transparency by giving prompt feedback on assignments/mid-semester exams, use ERP for maintaining scores.	Identify students as Slow/Advanced learner based on mid-term marks and activities will be performed for Slow/Advanced separately.
Experiential Learning and Workshop	**R-10:**Enhance extracurricular activities by fostering student-led initiatives, host regular events, and integrate feedback mechanisms. Ensure accessible participation, and recognize achievements to boost engagement and development. **R-7:**Promote awareness through interactive workshops, guest lectures, Industrial Visit and including compulsory credit courses like human values, disaster management & preparedness, environmental studies etc.	Organizing extra-curricular activities (IKS related activity, guest lectures, workshop etc.) with students. Promoting awareness through workshops, educational visits, and compulsory courses like human values, disaster management, and environmental studies.

HEAD OF DEPARTMENT
Dept. of Sciences
Quantum University, Roorkee

Thanks
Dr Varsha Gupta
Faculty Incharge
University feedback system

DIRECTOR
IQAC
Quantum University, Roorkee

Registrar
Quantum University, Roorkee

Action Taken Report on Feedback of Stakeholders

Session (2023-24)

Program Name: Bachelor of Science (Hons)Mathematics

Department of Sciences
Faculty of Graduate Studies
Quantum University, Roorkee

Action Taken Report of the Department

(*On the basis of the suggestions made by the IQAC and Sub Specialty Groups of the Departments on the Feedback of all stakeholder*)

Action Taken Report **Department Name: Department of Sciences**		
Feedback Session: 2023-24		
Curriculum Design		
Code	**Recommendation by Sub Specialty Groups of the Department**	**Action taken in designing the syllabus for 2024-25**
CY31105	**R-4:** Subject faculty and SSG. recommended shifting Solid State and Ionic Equilibrium to VI semester.	Implemented
MA32135	**R-4:** SSG recommended modification in Unit II, Unit IV, Unit V.	Introduced the topic Wornskian properties and its applications in Unit II, method of solving simultaneous linear differential equation with constant coefficient in Unit IV, non-linear partial differential equation and method of solving and Charpit's method in Unit V.
MA33205	**R-4:** SSG recommended modification in Unit III, Unit IV, Unit V.	Introduced topics in Introduction, Methods of Interpolation, Newton forword Interpolation, Newton backword Interpolation, Linear Interpolation, Lagrange's in Unit III , Numerical Differentiation For Equally/Unequally Spaced Values of the Arguments,Newton divided difference formula,Derivative using Lagrange formula,Maximum and minimum value of atabulated functions. Trapezoidal Rule, Simpson's Rule, Simpson's three – eighth rule in Unit IV and new Unit V **Numerical solution of Ordinary differential Equation**-Introducation, Picard method,Eulersmethod,Taylor method, Runge-Kutta method, Milne;s Method.

CS34222	**R-4:** As per suggestion by alumni followed by approval from SSG.	Introduced new course in Semester IV named Introduction to Python Programming.
CS34287	**R-7:** As per suggestion by alumni expert followed by approval from SSG.	Introduced new course in Semester IV named Python Programming Lab.
MA35306	**R-4:** SSG recommended modification in Unit I, Unit II, Unit IV and Unit V.	Introduced topics in Unit I -Basics of solutions. Simplex method,Big M Method, Two phase simplex method, Introduced topic in Unit II-Dual simplex method. Introduced new Unit IV-Introduction, terminology and notation, Problems with n jobs through. Two machine, Problems with n jobs through, Three machine, Problems with n jobs and, K machine, Introduced new Unit V-Introduction, Type of Game, Game without Saddle point(Mixed Strategies), 2*2 Games without saddle point, Graphical method for 2*n or m*2 Game.Introduced topics in
MA35321	**R-4:** Subject faculty and SSG recommended modification in Unit I, Unit II and Unit V.	Introduced topics in Unit I Charpit's method and working rule while using charpit's method Derivation of partial differential equations by elimination of arbitrary constant and function Introduced topics in Unit II working rule for reducing hyperbolic equation , parabolic equation and elliptic euatio.n to its canonical form Introduced topics in Unit V solution of the equation of the vibrating membrane , Solution of Wave equations By D' Alembert's method , laplace equation
MA37406	**R-4:** SSG recommended modification in Unit I, Unit III and Unit V.	Implemented
MA37423	**R-12:** As per NEP guidelines of compulsory 20% modification in syllabus and suggested by SSG replacement Calculus of Variation	Implemented

	by Research Methodology I.	
MA38433	**R-12:** As per NEP guidelines of compulsory 20% modification in syllabus and suggested by SSG Replaced Research Methodology I by Research Methodology II.	Implemented

Other Teaching Learning Aspects		
Overall Teaching Learning Process	**R-1**: Quality of teaching should be improved by presentation session, expert lecture, increasing lab hours and assigning case studies. **R-4**: Integrate industry feedback, ensure regular curriculum updation, foster and emphasize practical, hands-on experiences alongside theoretical knowledge. **R-7**: To improve the quality of labs, SSG suggested to ensure labs are well-maintained. Extend lab hours to allow more hands-on practice, update lab materials and manuals to reflect current industry standards. **R-10:** SSG recommended to regularly update courses to keep up with the latest trends and needs and ensure that course content is diverse and inclusive.	Including presentations, expert lectures, industry feedback, curriculum updates, practical experiences (Science Exhibition, poster presentation related activity).
Assistance of mentor	**R-3**: SSG recommended mentors to create collaborative decision making where interest of student is considered under guidance of mentor making up for an inclusive environment	Mentor will take care of problems related to students and proper guiding for the same.
Communication Skills	**R-5:** To improve communication skills , active participation of students in class discussions, practice public speaking, seeking feedback from peers and mentors, and engaging in diverse social interaction activities to enhance clarity and confidence.	Conduction of boot camp for final and pre- final year students including communication skill lectures by faculties.
Training for Placements	**R-8:**SSG recommended to encourage reflective practice to align internships with career goals and academic learning.	Conduction of departmental and inter-departmental boot camps in collaboration with placement cell.

Orientation	**R-2**: Enhanced orientation by incorporating engaging activities and opportunities for socializing. Include detailed campus tours, sessions on academic and support services, and platforms for students to connect with faculty and peers, fostering a welcoming environment.	Separate orientation programs for first year and senior batches to be done.
Evaluation System	**R-9**: Ensure clarity in learning outcomes, incorporate transparency by giving prompt feedback on assignments/mid-semester exams, use ERP for maintaining scores.	Identify students as Slow/Advanced learner based on mid-term marks and activities will be performed for Slow/Advanced separately.
Workshops	**R-13:** Promote awareness through interactive workshops, guest lectures and including compulsory credit courses like human values, disaster management & preparedness, environmental studies etc.	Organizing extra-curricular activities (IKS related activity, guest lectures, workshop etc.) with students. Promoting awareness through workshops, educational visits, and compulsory courses like human values, disaster management, and environmental studies.
Problem Solving Approach	**R-6**: Encourage focus on integrating real-world problem-solving projects and brain storming sessions. **R-11:**Enhance inter-disciplinary courses by fostering collaboration among departments, incorporating diverse teaching methods, and providing flexible course structures. **R-12:**Encourage publication in reputable journals, promote open access to research findings, and cultivate a culture of innovation and academic freedom.	Assigning real-world projects, diverse teaching methods, journal publications, open-access research, innovation, and academic freedom to improve the dynamic personality in students.

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