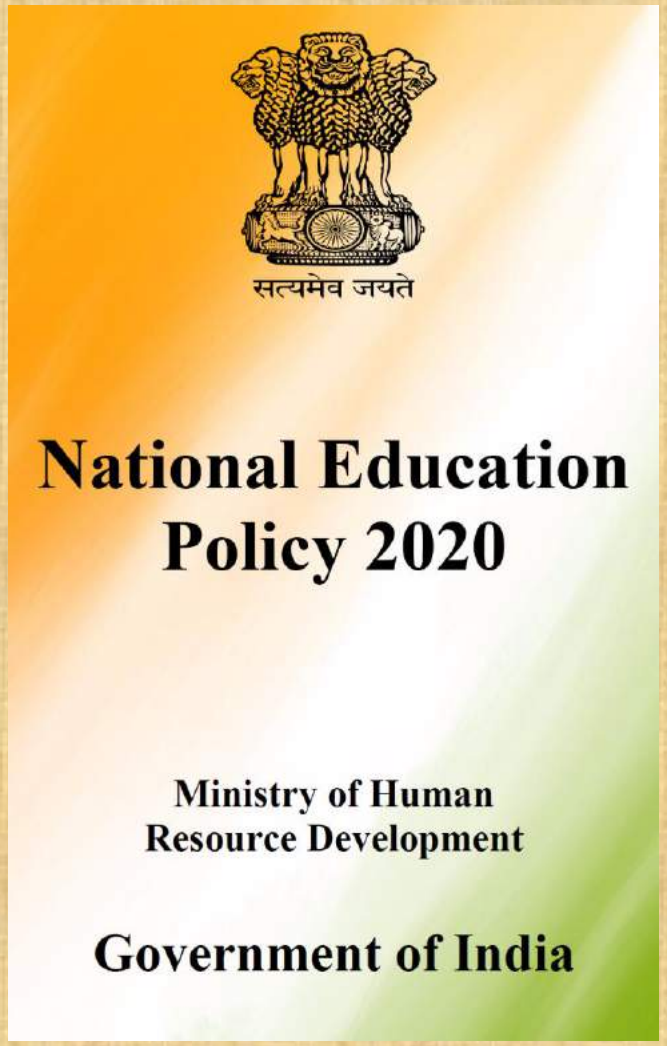
APS College of Arts & Science, N. R. Colony, Bengaluru – 560 019.



Orientation program for the implementation of National Education Policy 2020

Committee @ APSAS

Dr. B Jayashree – Principal
Dr. Narsimha Parvatikar – Nodal Officer
Prof. Satyashree – Member
Dr. Ramesha K – Member
Prof. Harisha M C – Member
Shri. Ragesh Bhat - Member

- ***“We want that education by which character is formed; Strength of Mind increased and intellect expanded… the education by which one can stand on one’s own feet”***

Swami Vivekananda

Fundamental Principles of NEP 2020

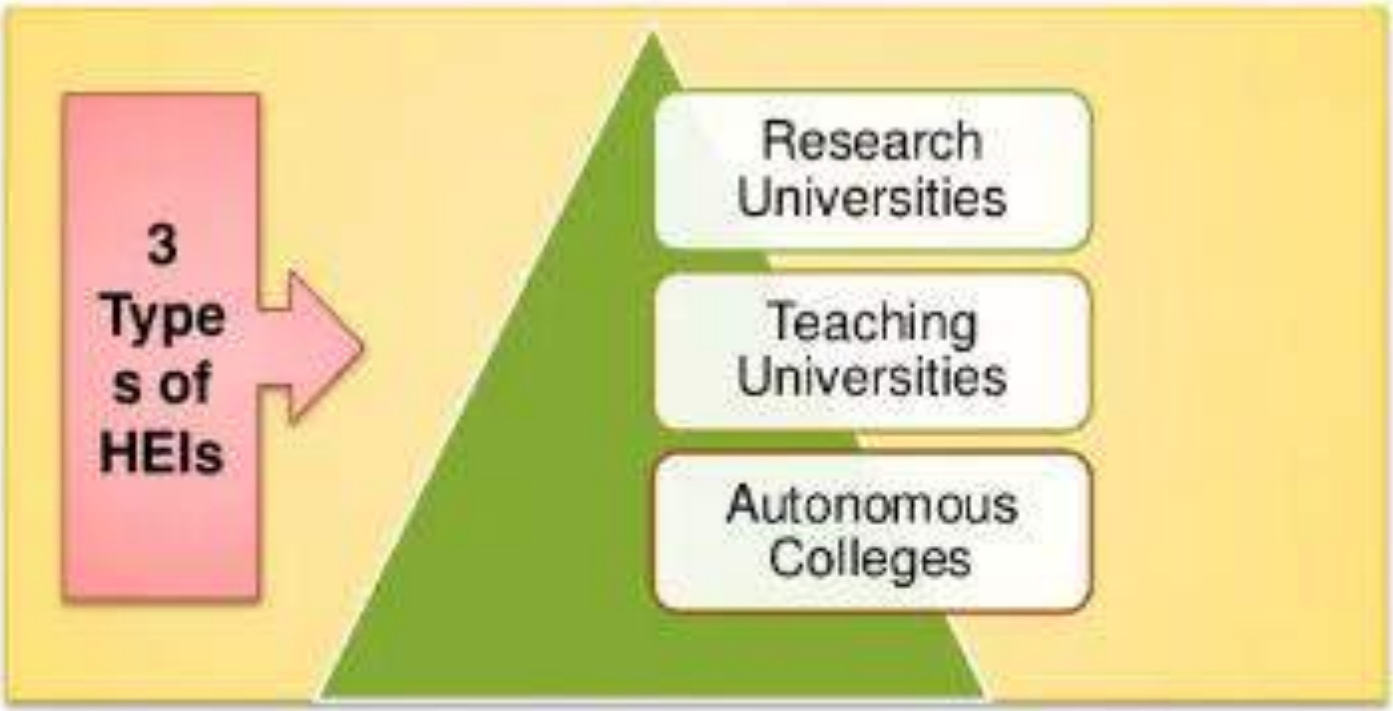
- **Focus on regular formative assessment for learning**
- **Extensive use of technology** in teaching and learning
- **Respect for diversity** and **respect for the local context.**
- **Full equity and inclusion.**
- **Synergy in curriculum across all levels of education**
- **teachers and faculty as the heart of the learning process**
- A **'light but tight' regulatory framework** to ensure **integrity, transparency**, and **resource efficiency** of the educational system through audit and public disclosure while encouraging innovation and out-of-the-box ideas through **autonomy, good governance and empowerment**
- **Outstanding research.**
- **A rootedness and pride in India.**

Fundamental Principles of NEP 2020

- **Recognizing, identifying,** and **fostering the unique capabilities of each student**
- **Flexibility.**
- **No hard separations** between arts and sciences, between curricular and extra-curricular activities, between vocational and academic streams, etc.
- **Multidisciplinarity** and a **holistic education**
- **Emphasis on conceptual understanding ,creativity and critical thinking**
- **Promoting multilingualism and the power of language** in teaching and learning
- **Life skills** such as communication, cooperation, teamwork, and resilience.

Higher Education

- Quality HE aims to develop good, thought ful, well-rounded & creative individuals.
- Must form a basis for Knowledge Creation & Innovation.
- Purpose of QHE –creation of greater opportunities for individual employment.
- Re-energising of HE through- Multidisciplinary Universities & Colleges, undergraduate education, faculty & institutional autonomy etc.



Multidisciplinary Education & Research Universities(MERUS)-Model Public Universities for Holistic & multidisciplinary Education at par with IITs,IIMs etc.

Structure

- **Degree programme-3 or 4 years duration**

Certificate after completing one year
Diploma after completing 2 years .
Bachelor's degree after 3 years
Multidisciplinary bachelor's degree after 4 years.

- **Master programme-1 or 2 years**

2year with 3 year bachelor degree
1year with 4 years bachelor degree

- Integrated 5 Years bachelor/Master programme
- Ph.D Master degree or 4 years bachelor degree.
- **M.Phil programme discontinued.**

NEP 2020: Multiple entry and exit programme

- Aims at 50% gross enrolment ratio by 2035.
- There will be **multiple entry and exit options** for those who wish to leave the course in the middle.
- Their credits will be transferred through **Academic Bank of Credits.**

NEP 2020: Financial Autonomy to be given to 45K affiliated colleges

- There are over 45,000 affiliated colleges in our country.
- Graded Autonomy, Academic, Administrative & Financial Autonomy will be given to colleges on the basis of the status of their accreditation.

Physical and Mathematical Sciences

Example 1: Physics

Exit after ONE YEAR: CERTIFICATE PROGRAMME:

EXPECTED OUTCOMES: ***After the successful completion of the Course, the student will be able to:***

1. ***Discipline Knowledge:*** *Acqire* knowledge of science and apply to relevant areas.
2. ***Problem solving:*** Execute a solution process using first principles of science to solve problems related to respective discipline.
3. ***Modern tool usage:*** Use a modern scientific, engineering and IT tool or technique for solving problems in the areas of their discipline.
4. ***Ethics:*** Apply the professional ethics and norms in respective discipline.
5. ***Individual and teamwork:*** Work effectively as an individual as a team member in a multidisciplinary team.
6. ***Communication:*** Communicate effectively with the stake holders, and give and receive clear instructions.

Exit after ONE YEAR: CERTIFICATE PROGRAMME:

POSSIBLE JOBS after EXIT:

1. Lab Technicians
2. Data Entry Operators
3. Mechanical Repair and Maintenance
4. Electrical Repair and Maintenance
5. Electronics Repair and Maintenance
6. Agriculture Equip Maintenance

Technical Skills (Options):

1. ICT
2. Computer Programming
3. Equations and Graphs
4. Chemical Handling
5. Materials Testing
6. Electrical Maintenance
7. Basic- Data Mgmt.
8. Electronic Maintenance
9. Agriculture Equip Maintenance

Soft Skills & Languages:

1. Kannada
    1. LSRW skills
    2. Science Communication
2. English
    1. LSRW skills
    2. Science Communication
3. Personality Development & Etiquettes
4. Team Work and Confidence Building
5. Awareness of Constitution of India and Environmental Science

Exit after TWO YEARS: DIPLOMA PROGRAMME:

EXPECTED OUTCOMES: ***After the successful completion of the Course, the student will be able to:***

1. ***Discipline Knowledge:*** Acquire the knowledge of science and apply to relevant areas.
2. ***Conduct investigations:*** Conduct investigations of technical issues as per their level of understanding and knowledge.
3. ***Problem solving:*** Formulate and implement a solution process using first principles of science to solve problems related to respective discipline.
4. ***Modern tool usage:*** Apply a modern scientific, engineering and IT tool or technique for solving problems in the areas of their discipline.
5. ***Ethics:*** Apply and commit to the professional ethics and norms in respective profession.
6. ***Individual and teamwork:*** Work effectively as an individual in a multidisciplinary team.
7. ***Communication:*** Communicate effectively with the stake holders, and give and receive clear instructions.

Exit after TWO YEARS: DIPLOMA PROGRAMME:

POSSIBLE JOBS after EXIT:

1. **Instructors**
2. **Supervisors**
3. **Lab Technicians**
4. **Primary School Teacher**
5. Data Entry Operators
6. Mechanical Repair and Maintenance
7. Electrical Repair and Maintenance
8. Electronics Repair and Maintenance
9. Agriculture Equip Maintenance

Technical Skills (Options):

1. ICT
2. Computer Programming
3. Equations and Graphs
4. Chemical Handling
5. Materials testing
6. Electrical Maintenance
7. Basic- Data Mgmt.
8. Electronic Maintenance
9. Agriculture Equip Maintenance
10. Laboratory practices and safety
11. Graphing Software
12. **History of Science**

Soft Skills & Languages:

1. Kannada
    1. LSRW skills
    2. Science Communication
2. English
    1. LSRW skills
    2. Science Communication
3. Personality Development & Etiquettes
4. Team Work and Confidence Building
5. Compulsory Sub: like Environmental Science
6. **Teaching: Pedagogical Skills**

Exit after THREE YEARS: DEGREE PROGRAMME:

EXPECTED OUTCOMES: ***After the successful completion of the Course, the student will be able to:***

1. ***Discipline Knowledge:*** Acquire the knowledge of basics of science and apply the understanding of fundamentals of major discipline in solving complex problems.

2. ***Conduct investigations:*** Conduct investigations of issues in their respective disciplines and arrive at valid conclusions.

3. ***Problem solving:*** Implement a solution process using first principles of science to solve problems related to respective discipline.

4. ***Modern tool usage:*** Select and use a modern scientific, engineering and IT tool or technique for solving problems in the areas of their discipline.

5. ***Environment and Society:*** Evaluate the impact of scientific solutions on society and environment and the need for sustainable solutions.

6. ***Ethics:*** Demonstrate professional ethics, responsibilities and norms in respective profession.

7. ***Individual and teamwork:*** Work effectively as an individual as a team member and as a leader in a multidisciplinary team.

8. ***Communication:*** Communicate effectively with the stake holders, write and comprehend project reports and documentation, deliver effective presentations, and give and receive clear instructions.

Exit after THREE YEARS: DEGREE PROGRAMME:

POSSIBLE JOBS after EXIT:

1. High School Teacher
2. Entrepreneur
3. Administration (Govt &Pvt jobs) via Competitive Exams
4. Science Communicators
5. NGO and Environmental Activists
6. Wildlife and Nature Photographer
7. Lab Technicians
8. Data Entry Operators
9. Mechanical Repair and Maintenance
10. Electrical Repair and Maintenance
11. Electronics Repair and Maintenance
12. Agriculture Equip Maintenance

TECHNICAL SKILLS (Options):

1. History of Science
2. Scientific Philosophy
3. Entrepreneurship and Business
4. Sports Science
5. Science of Music
6. Nature & Wild Life Photography
7. ICT
8. Computer Programming
9. Equations and Graphs
10. Chemical Handling
11. Materials testing
12. Electrical Maintenance
13. Basic- Data Mgmt.
14. Electronic Maintenance
15. Agriculture Equip Maintenance
16. Laboratory practices and safety
17. Graphing Software

Soft Skills & Languages:

1. General Knowledge
2. Mental Ability and Maths
3. Scientific Communication
   a. Seminars and Conference Presentations
   b. Reporting minor Research Projects
4. Science Communication in Kannada
5. Science Communication in English
6. Personality Development & Etiquettes
7. Team Work and Confidence Building

COMPLETION OF COURSE AFTER FOUR YEARS: DEGREE

Exit after FOUR YEARS: HONORS PROGRAMME:

EXPECTED OUTCOMES: ***After the successful completion of the Course, the student will be able to:***

1. ***Discipline Knowledge:*** Acquire the knowledge of basics of science and research, and apply the understanding of fundamentals of specialized discipline in solving complex scientific problems.
2. ***Conduct investigations:*** Conduct investigations of issues using research methods and research-based discipline knowledge including design of experiments, data collection, interpretation and analysis to arrive at valid conclusions.
3. ***Problem analysis:*** Identify, formulate and analyze complex scientific problems using first principles of respective discipline.
4. ***Design and Development of solutions:*** Design solutions for complex scientific problems and execute them by considering the environmental, societal and public safety aspects appropriately.
5. ***Modern tool usage:*** Identify, select and use a modern scientific, engineering and IT tool or technique for modeling, prediction, data analysis and solving problems in the areas of their discipline.
6. ***Environment and Society:*** Evaluate the impact of scientific solutions on society and environment and design sustainable solutions.
7. ***Ethics:*** Demonstrate professional ethics, responsibilities and norms in respective profession.
8. ***Individual and teamwork:*** Work effectively as an individual as a team member and as a leader in a multidisciplinary team.
9. ***Communication:*** Communicate effectively with the stakeholders with emphasis on communicating with scientific community, comprehend scientific reports, write research papers and projects proposals and reports, deliver effective presentations, and give and receive clear instructions.
10. ***Project Management and Finance:*** Apply the knowledge of scientific and technological principles to one's own work to manage projects in multidisciplinary settings.
11. ***Lifelong Learning:*** Identify knowledge gaps and engage in lifelong learning in the context of changing trends in respective discipline.

Exit after FOUR YEARS: HONORS PROGRAMME:

POSSIBLE JOBS after EXIT:

1. **Scientist/Researcher**
2. **College Teacher**
3. **Entrepreneur**
4. **Competitive Exams**
5. Lab Technicians
6. Data Entry Operators
7. Mechanical Repair and Maintenance
8. Electrical Repair and Maintenance
9. Electronics Repair and Maintenance
10. Agriculture Equip Maintenance

Technical Skills (Options):

1. **History of Science**
2. **Scientific Philosophy**
3. **Entrepreneurship and Business**
4. ICT
5. Computer Programming
6. Equations and Graphs
7. Chemical Handling
8. Materials testing
9. Laboratory practices and safety
10. Graphing Software

Soft Skills & Languages:

1. Kannada Science Communication
2. English Science Communication
3. Personality Development & Etiquettes
4. Team Work and Confidence Building
5. **Scientific Communication**

a. **Seminars and Conference Presentations**

b. **Reporting minor Research Projects**

6. **Entrepreneurship and Business Etiquettes**

OPTION 1

Sem	DSC	GEC	Languages	AEC	SEC	CC	Total Credits
I	DSC-1A (4) DSC-2A (4) DSC-3A (4)		L1, L2 (6)	AEC-1 (2)	SEC-1 (2)	CC-1 (2)	24
II	DSC-1B (4) DSC-2B (4) DSC-3B (4)		L3, L4 (6)	AEC-2 (2)	SEC-2 (2)	CC-2 (2)	24
Exit Option with Certification							
III	DSC-1C (4) DSC-2C (4) DSE-1C (3)		L5, L6 (6)	AEC-3 (2)	SEC-3 (2)	CC-3 (2)	23
IV	DSC-1D (4) DSC-2D (4) DSE-1D (3)		L7, L8 (6)	AEC-4 (2)	SEC-4 (2)		21
Exit Option with Diploma							
V	DSC-1E (5) DSC-2E (5) DSE-3E (4)	GEC-1 (3)		AEC-5 (4)	SEC-5 (2)		23
VI	DSC-1F (5) DSC-2F (5) DSE-3F (4)	GEC-2 (3)		AEC-6 (4)	SEC-6 (2)		23
Exit Option with Bachelor's Degree							
VII	DSC-1G (10) DSE-1G (2)	Research Project (8)		AEC-7 (4)			24
VIII	DSC-1H (10) DSE-1H (2)	Research Project (8)		AEC-7 (4)			24
Bachelor's Degree with Honors							186

DSC	Discipline Specific Core / Major	AEC	Ability Enhancement Course
DSE	Discipline Specific Elective / Minor	SEC	Skill Enhancement Course
L1 & L2	Languages - (MIL)	CC	Compulsory Course (Constitution of India / Environmental Studies / Physical Education)
GEC	Generic Elective Course	TC	Total Credits

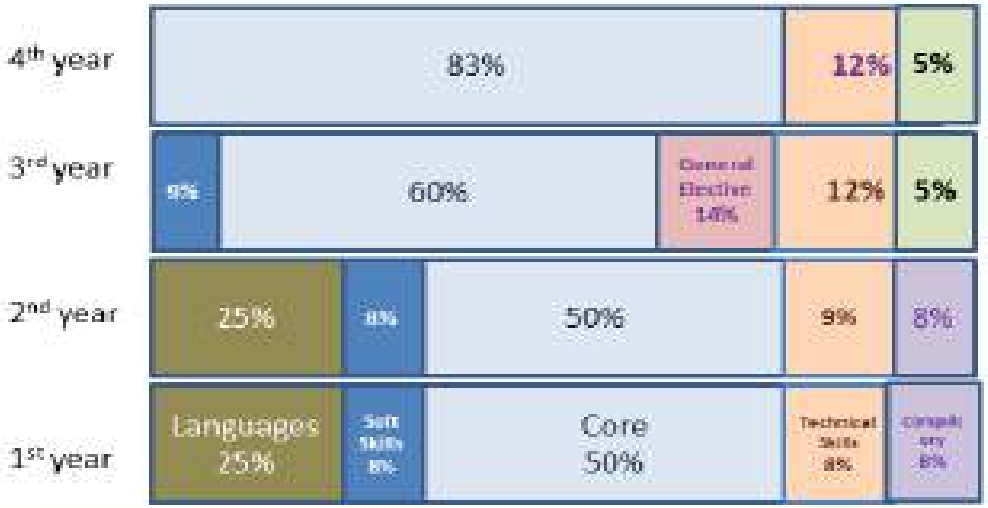
OPTION 2

Sem	DSC	GEC	Languages	AEC	SEC	CC	Total Credits
I	DSC-1A (4) DSC-2A (4) DSC-3A (4)		L1, L2 (6)	AEC-1 (2)	SEC-1 (2)	CC-1 (2)	24
II	DSC-1B (4) DSC-2B (4) DSC-3B (4)		L3, L4 (6)	AEC-2 (2)	SEC-2 (2)	CC-2 (2)	24
Exit Option with Certification							
III	DSC-1C (4) DSE-1C (3) DSE-2C (3)		L5, L6 (6)	AEC-3 (2)	SEC-3 (2)	CC-3 (2)	22
IV	DSC-1D (4) DSE-2D (3) DSE-1D (3)		L7, L8 (6)	AEC-4 (2)	SEC-4 (2)		22
Exit Option with Diploma							
V	DSC-1E (5) DSE-2E (4) DSE-3E (4)	GEC-1 (3)		AEC-5 (4)	SEC-5 (2)		22
VI	DSC-1F (5) DSE-2F (4) DSE-3F (4)	GEC-2 (3)		AEC-6 (4)	SEC-6 (2)		22
Exit Option with Bachelor's Degree							
VII	DSC-1G (10) DSE-1G (2)	Research Project (8)		AEC-7 (4)			24
VIII	DSC-1H (10) DSE-1H (2)	Research Project (8)		AEC-7 (4)			24
Bachelor's Degree with Honors							184

DSC	Discipline Specific Core / Major	AEC	Ability Enhancement Course
DSE	Discipline Specific Elective / Minor	SEC	Skill Enhancement Course
L1 & L2	Languages - (MIL)	CC	Compulsory Course (Constitution of India / Environmental Studies / Physical Education)
GEC	Generic Elective Course	TC	Total Credits

Note: The student should earn a minimum of 62 credits, to be eligible to get the Bachelor's Degree with Honours, in a particular Discipline. If the student has earned lesser credits in a particular discipline, the credits can be made up through self learning (MOOCs, ARPIT/SWAYAM or any other modes) to be eligible to opt for a particular discipline for the fourth year.

CHART OF CREDIT ALLOCATION FOR 4 YEAR B.Sc HONOURS COURSE



Legends:

Languages:
1 Credit: Language
1 Credit: Literature
1 Credit: Science Comm.

Soft Skills :
Personality Development
Science Communication
Scientific Communication
L.S.R.W

Core:
Theory: 60%
Practicals: 30-40%
4th Sem[Research Methodology course, 1 course suggested by guide, 2 courses out of suggested pool of courses. Thesis based on research topic]

Technical Skills:
a. Subject related
b. Skill related
c. Projects

Compulsory Course:
a. Constitution of India
b. Environment studies
c. ICT, etc

Gen.Elective:
Gen. Electives offered by institution

Self-Study:
Self-Study/Lifelong Learning