Name of the Policy/Guidelines	Treated Waste-Water Reuse
Short Description	Policy for recycling and reuse of waste water. Based on guidelines of Govt of India in view of reducing availability of fresh water both in terms of quality and quantity.
Scope	This Policy applies to all campuses and constituent units of Nitte (Deemed to be University). This Policy, if applied, will reduce the load on the freshwater to be used in all campuses and constituent units of NitteDU.
Policy Status	☒ Original ☐ Revised
Date of Approval of Original Policy	05-08-2019
Revision No.	Not Applicable
Brief description of the last revision	Not Applicable
Date of approval of the current revision	Not Applicable
Effective date	06-08-2019
Approval Authority	Registrar, NitteDU
Responsible Officer	Air Cmde. S.K. Pai (Retd.) Assistant Director (Estate Mgt)

Introduction:

Water is the most crucial natural resource required to sustain all forms of life on earth. It is essential to have abundant availability of water to support economic activities. India has around 5% freshwater in the world, whereas it is home to 16% of the global population. There is significant rainfall in Mangalore in most months of the year, especially between June and September. The average annual rainfall in Mangalore is around 360cms. In the recent past years, it has been observed that the intensity of rainfall on some days during June or July is very high and the rainfall is not uniform in all the days during the monsoon period. Hence, in Mangalore, a shortage of potable water starts in January itself. Therefore, to reduce the water consumption by industries, wastewater (sewage) from households is collected, treated, and sent to Mangalore SEZ for further tertiary treatment. Today entire sewage collected is reused after proper treatment by the industries.

Nitte DU currently is using around 7.67 lakh liters per day in all the campuses and is generating around 5.59 lakh liters/day wastewater. About 60% of the total water consumed is by the hospital. Already, there exists a good practice of collection and proper treatment of this water. At present, a portion of the treated wastewater is used in flushing toilets by providing a dual pipeline, while the rest is used for gardening and landscaping purposes.

In accordance with the Government principle and NitteDU Policy on the environment, it is decided to collect the different liquid wastewater generated in the campus and treat them properly so that the treated wastewater can be used for other non-potable usages like flushing toilets, irrigation, cooling, water-cooled A/c and wherever treated wastewater can be used for non-potable purposes.

Need for Water Recycling Policy:

The rainfall pattern in Mangalore is erratic, and therefore, the water from the Nethravathi river and ground-water sources are not available in adequate quantity. With an increase in patient footfalls and expansion in the number of student admissions, the demand for water has considerably increased. The ground-water levels have fallen with poor levels of recharge. Therefore, it has become necessary to look for alternatives. Since most of the water supply returns to the sewerage system (80%), the disposal of such contaminated wastewater is another issue. To address these issues, as a socially conscious and responsible Higher Educational Institution (HEI), NitteDU is taking several steps, and one among them in the Policy on the reuse of treated wastewater. This Policy, if implemented, will reduce the stress and over-dependence on the freshwater for non-potable purposes also.

Objectives:

1. To reduce the freshwater consumption either from ground-water or municipal supply and thus preserving our precious natural resource.
2. To reduce the over-dependence on fresh potable quality water for use in applications that can tolerate inferior quality.

3. To reduce water billing cost and energy cost
4. To raise awareness about the concept of reducing, recover, reuse, and recycle among employees and students.

Statutory and Policy Framework:

The reducing trends of the water resources and the concept of treated wastewater recycling and reuse have caught the attention of university officials. Since this technology is now a matured one, it is a plausible and feasible one to address the issue of reduction in usage of freshwater resources. The citizen's responsibility towards the environment is mentioned in the Constitution of India. The Water (Prevention and Control) Act 1986, addresses the need for wastewater treatment and subsequent use for non-potable purposes. This Policy is therefore framed keeping in view the provisions in the Constitution of India and Statutes and policies of MOEF, CPCB and KSPCB and other regulatory bodies.

Policy Considerations:

1. Nitte DU will put in place a proper sewerage system (collection mechanism) to collect all contaminated wastewater and transport them to treatment sites. Accordingly, planning and creation of infrastructure for adequate capacity for collection, treatment of wastewater and possible infrastructure for reuse of all treated wastewater will be reviewed periodically and implemented.
2. Nitte DU intends to use treated wastewater for non-potable purposes as an additional source of water. The prescribed water quality norms will always be met, and there won't be any compromise on this front.
3. Nitte DU treats this treated wastewater as an economic resource.
4. Nitte DU intends to select and commission the latest technological units/technologies for the treatment of wastewater, which are effective, simple to operate, low cost, and environment-friendly.
5. Nitte DU will strive towards using only treated wastewater for all construction activities inside the university.
6. Nitte DU intends to use treated wastewater for flushing toilets, irrigating lawns, and the development of greenbelt.
7. Nitte DU will make all efforts to collect 100% of liquid wastewater and establish adequate treatment facilities so that 100% reuse of the treated wastewater can be implemented (zero discharge concept).