I. Immediate Postoperative Phase (Day 1 to 10)

**Goals:**
1) Active quadriceps muscle contraction
2) Safe (isometric control), independent ambulation
3) Passive knee extension to 0 degrees
4) Knee flexion to 90 degrees or greater
5) Control of swelling, inflammation, bleeding

**Day 1 to 2**

- **Weight Bearing** - Walker/two crutches WBAT
- **CPM** - 20 to 70 degrees as tolerated
- **ROM** – 0-70°
- **Cryotherapy** - Commercial unit used continuously or ice 20 min of each hour
- **Exercises:**
  - Ankle Pumps with leg elevation
  - Passive knee extension exercise
  - Electrical stimulation to quads
  - Straight leg raises (SLR)
  - Quad sets
  - Knee extension exercise 90-30 degrees
  - Hamstring stretches (gentle)

**Day 4 to 10**

- **Weight Bearing** - As tolerated
- **CPM** - 0 to 90 degrees as tolerated
- **ROM** – 0-90°
- **Exercises:**
  - Ankle pumps with leg elevation
  - Passive knee extension stretch – emphasis on full knee extension
  - Active assistive ROM knee flexion
  - Quad Sets
  - Straight leg raises
  - Hip abduction/adduction
  - Knee extension exercise 90-0 degrees
  - Continue use of cryotherapy

**Gait Training** - Continue safe ambulation. Instruct in transfers.
II. **Motion Phase** (Week 2-6)

**Goals:**
1. Improve range of motion  
2. Enhance muscular strength/endurance  
3. Dynamic joint stability  
4. Diminish swelling/inflammation  
5. Establish return to functional activities  
6. Improve general health

**Criteria to enter Phase II**
1. Leg control, able to perform SLR  
2. Active ROM 0-90 degrees  
3. Minimal pain/swelling  
4. Independent ambulation/transfers

**Week 2-4**

**Weight Bearing** - WBAT with assisted device

**ROM**
- Week 2: 100-105°  
- Week 3: 110-115°  
- Week 4: 125°+

**Exercises:**
* Quad Sets  
* Knee extension exercise 90-0 degrees  
* Terminal knee extension 45-0 degrees  
* Straight leg raises (flexion/extension)  
* Hip abduction/adduction  
* Hamstring curls  
* 1/4 Squats  
* Stretching  
  - Hamstrings, Gastrocnemius, Soleus, Quads  
* Bicycle ROM Stimulus  
* Initiate pool program  
* Continue passive knee extension stretch  
* Continue use of cryotherapy  
* Discontinue use of TEDS hose at 2-3 weeks  
  (physician's approval)  
* Begin front lunge & lateral step up week 3  
* Begin machine program (gentle) week 4  
  - Leg press  
  - Hip abduction/adduction
III. **Intermediate Phase** (Week 5-12)

**Goals:**
1) Enhancement of strength/endurance
2) Eccentric/concentric control of the limb
3) Cardiovascular fitness
4) Functional activity performance

**Criteria to enter Phase III**
1) Range of motion 0-115 degrees
2) Voluntary quadriceps muscle control
3) Independent ambulation
4) Minimal pain/inflammation

**Week 5-10**

**Exercises:**
- Continue all exercises listed in Phase II
- Initiate progressive walking program
- Initiate endurance pool program
- Continue closed kinetic chain & machine exercises
- Progress to entire lower extremity strengthening
- Return to functional activities
- Emphasize eccentric/concentric knee control

IV. **Advanced Activity Phase** (Week 10-26)

**Goals:**
1) Allow selected patients to return to advanced level of function (recreational sports)
2) Maintain/improve strength and endurance of lower extremity
3) Return to normal life style

**Criteria to enter Phase IV**
1) Full non-painful ROM 0-120/125 degrees
2) Strength of 4+/5 or 85% of contralateral limb
3) Minimal to no pain and swelling
4) Satisfactory clinical examination

**Exercises:**
- Continue maintenance program
- Quad Sets
- Straight Leg Raises (flexion/extension)
- Hip abduction/adduction
- 1/2 squats
- Lateral step ups
* Knee extension exercise 90-0 degrees
* Machine weights as tolerated
* Bicycle for ROM stimulus and endurance
* Stretching
  - Knee extension to 0 degrees
  - Knee flexion to 105 degrees
* Initiate gradual golf, tennis, swimming, bicycle, walking program