## **EECE.2160: ECE Application Programming**Spring 2018

Lecture 33: Key Questions April 27, 2018

1.	Explain the malloc() function.
2.	Explain the use of type casting, and why it is necessary with the allocation functions.

3. Explain the calloc() function.

4. Explain the realloc() function.

5. Explain how free () is used to deallocate memory.

6. **Example:** What does the following program print?

```
void main() {
  int *arr;
  int n, i;
  n = 7;
  arr = (int *)calloc(n, sizeof(int));
  for (i = 0; i < n; i++)
     printf("%d ", arr[i]);
  printf("\n");
  n = 3;
  arr = (int *)realloc(arr, n * sizeof(int));
  for (i = 0; i < n; i++) {
    arr[i] = i * i;
    printf("%d ", arr[i]);
  }
  n = 6;
  arr = (int *)realloc(arr, n * sizeof(int));
  for (i = 0; i < n; i++) {
    arr[i] = 10 - i;
    printf("%d ", arr[i]);
  }
  free(arr);
}
```

M. Geiger Lecture 33: Key Questions

7. What are the common pitfalls of dynamic memory allocation?